
Press Room

Intel ISEF

Intel ISEF 2015 Special Awards Ceremony

9:13PM, May 14, 2015

May 14, 2015, Pittsburgh, PA – Society for Science & the Public, in partnership with the Intel Foundation, announced Special Awards of the Intel ISEF 2015. Student winners are ninth through twelfth graders who earned the right to compete at the Intel ISEF 2015 by winning a top prize at a local, regional, state or national science fair.

Acoustical Society of America

The Acoustical Society of America is the premier international scientific society in acoustics, dedicated to increasing and diffusing the knowledge of acoustics and promoting its practical applications.

First Award of \$1,500

EBED044| The Exchange iMproving Unit: An Auditory Device for Directional Filtering

Robert Cole Henning, 17, Mission Hills High School, San Marcos, California

Second Award of \$500

EBED037| Development of a Ultra Low-Cost Integrated Audiometer and Hearing Aid

Mukund Venkatakrishnan, 15, DuPont Manual High School, Louisville, Kentucky

Honorable Mention

BEHA0331 **Stay Tuned! Comparing the Effects of Long and Short-Term Auditory Stimulation for Increasing the Sensitivity of a Person's Hearing**

Alexandra Zoe Garth, 16, Redeemer Baptist School, North Parramatta, Australia

PHYS0321 **Physical Simulation Based on Bat's Pinna Structure and Its Deformation Binaural Sound Signal Measurement Experiment of Greater Horseshoe Bat**

Ruochen Hao, 17, Shandong Experimental High School, Jinan, China

ROBO0221 **Can I See It If I Cannot Hear It? Real-Time Visualization of Incoming Sound for People with Hearing Disabilities or Ear Obstruction**

Vasily Antonovich Tremsin, 15, Campolindo High School, Moraga, California

The first place award winner's school will be awarded \$500 and the student's mentor will be awarded \$250. The second place award winner's school will be awarded \$200 and the student's mentor will be awarded \$100. Each winner will also receive a one-year ASA membership.

ADA Foundation

As dentistry's premier philanthropic and charitable organization, the ADA Foundation (ADAF) is a catalyst for uniting people and organizations to make a difference through better oral health. The ADAF Dr. Anthony Volpe Research Center (formerly Paffenbarger Research Center) in Gaithersburg, MD, is hailed as one of the most productive dental research centers in the world. The ADAF's Mission Pillars include Charitable Assistance, Access to Care, Research, and Education (C.A.R.E.).

First Award of \$2,000

BMED0561 **The Development of an Inexpensive Hand Hygiene Monitoring System with a Raspberry Pi Computer: Applications for Healthcare and Beyond**

Timothy James Fossum Renier, 17, East High School, Duluth, Minnesota

Second Award of \$1,000

CBIO052I Computer-Aided Oral Cancer Diagnosis

Aditya Tushar Mohile, 17, Friendswood High School, Friendswood, Texas

Third Award of \$500

BMED100T Oral Antimicrobial Effect Using Eco-Friendly Substances

HyeRim Eam, 16, Busan Jangan High School, Busan, South Korea

Suyeon Lee, 16, Incheon Jinsan Science High School, Incheon, South Korea

Yoojin Ahn, 17, Busan Jangan High School, Busan, South Korea

Alcoa Foundation

Alcoa Foundation is one of the largest corporate foundations in the U.S., with assets of approximately \$446 million. Founded 60 years ago, Alcoa Foundation has invested more than \$550 million since 1952. Alcoa and Alcoa Foundation have contributed \$38 million to nonprofit organizations throughout the world, focusing on Environment and Education. Through this work, Alcoa Foundation is building innovative partnerships, engaging its people to improve the environment and educating tomorrow's leaders.

Sustainable Urban Design, First Award of \$2,500

CHEM016I Cavity: Analysis and Application of Nanostructures in Aluminumoxide

Arne Hensel, 18, Bundespräsident Theodor-Heuss-Schule, Homburg/Efze, Germany

Sustainable Design In Transportation, First Award \$2,500

ENMC039I The FIRST Frame: Personalized Front Impact Reduction System for Bicycles

Duncan Bayard Stothers, 17, St. George's School, Vancouver, Canada

Sustainable Urban Design, Second Award of \$1,500**ENEV080T BioDissolve: The Natural Breakdown of Polystyrene Waste through the Application of *Pseudomonas putida* to Produce Usable Byproducts**

James Savoldelli, 17, Columbia Grammar and Preparatory School, New York City, New York

Hugh Savoldelli, 17, Columbia Grammar and Preparatory School, New York City, New York

Drew Tomback, 17, Columbia Grammar and Preparatory School, New York City, New York

Sustainable Design In Transportation, Second Award \$1,500**ENMC015T Increasing Wing Lift for Safer Landing**

Viktar Beliautsou, 17, Minsk State Regional Lyceum, Minsk, Belarus

Mikita Syrovatnikau, 17, Minsk State Regional Liceum, Minsk, Belarus

Aleh Karabko, 17, Gymnasia №40, Minsk, Belarus

Sustainable Urban Design, Third Award \$1,000**CHEM071T Freestanding Carbon Nanofiber Electrodes Derived from Electrospun Polyacrylonitrile/ZIF-8 Composite for Supercapacitors**

Megan Yanjia Li, 16, R. C. Clark High School, Plano, Texas

Joycelyn Chung-Yan Yiu, 16, R. C. Clark High School, Plano, Texas

Sustainable Design In Transportation, Third Award of \$1,000**EGPH034I Forms of Energy for the Levitation of a Magnetic Vehicle**

Felix Junior Morales, 15, Colegio Congregacion Mita, San Juan, Puerto Rico

Sustainable Urban Design: When used in buildings, aluminum can enhance energy efficiency, reduce CO₂ emissions, and help achieve green-building standards. Alcoa Foundation grants three Special Awards to projects illustrating ingenuity and practical application towards bringing green to buildings. Sustainable Design In Transportation: Aluminum is strong and durable, and its light weight helps reduce the overall weight of an aircraft, automobile, or commercial vehicle to improve fuel economy and significantly reduce emissions during the vehicle use phase. Alcoa Foundation grants three Special Awards to projects illustrating ingenuity and practical application towards making transportation lighter and greener.

American Association of Pharmaceutical Scientists

The American Association of Pharmaceutical Scientists (AAPS) is a professional scientific organization of approximately 11,000 members dedicated to the discovery, development and manufacture of pharmaceutical products and therapies through advances of science and technology. AAPS provides an international forum for the exchange of knowledge among scientists to enhance their contributions to health. We offer timely scientific programs, ongoing education, opportunities for networking, and professional development.

First Award of \$2,000

BMED072I Development of a Novel Oncolytic Virus for Cancer Treatment and Diagnosis

Aditya Anand Mohan, 18, Colonel By Secondary School, Ottawa, Canada

Second Award of \$1,000

CELL051I Identification of Therapeutic Compounds for Treating Huntington's Disease: High Content Screening of Small Molecules for Modulating N17 Phosphorylation of Mutant Huntingtin

Samuel Han, 16, Abbey Park High School, Oakville, Canada

Third Award of \$500

BCHM021I Investigating the Protective Effects of Interleukin 22 on Intestinal Epithelium: Potential Graft-versus-Host Disease Treatment

Juliet Adela Ivanov, 17, Ossining High School, Ossining, New York

Fourth Award of \$250

BMED0371 TETEBENE: Effects of the Experimental Therapeutic Model Isolated Peptide Toxic- Prodrug in the Inhibition of Poly(ADP)Ribose Polymerase for Breast Cancer Treatment by the Use of Molecular Nanotransporters

Demetrio Agustin Rodriguez Fajardo, 19, Centro de Ensenanza Tecnica Industrial Plantel Colomos, Guadalajara, Mexico

CBIO0331 Novel Potent Inhibitors for CIP2A with Mutational Classification Method

Mohammad Mansour Tarek, 19, Salman EL-Farisy High School, Cairo, Egypt

The winners will also receive a certificate, a one-year membership in the association including three AAPS journals, reduced rates for meetings and numerous educational materials.

American Chemical Society

The American Chemical Society Education Division promotes excellence in science education and science literacy through a number of activities supporting teachers and learners of chemistry. Through its participation in Intel ISEF, ACS encourages and supports high school students in their exploration of the chemical sciences through research experiences.

First Award of \$4,000

CHEM0741 Photoelectrochemical Properties of 2-D Transition Metal Dichalcogenides (TMDCs) Functionalized with Porphyrins

Arjun Srinivasan Ramani, 16, West Lafayette Junior Senior High School, West Lafayette, Indiana

Second Award of \$3,000

CHEM073T Development of a Novel Radiation Shielding Material

Seyit Alp Herdem, 19, Isiklar Air Force High School, Bursa, Turkey

Tahsin Elmas, 19, Isiklar Air Force High School, Bursa, Turkey

Third Award of \$2,000**CHEM031I Synthesizing and Utilizing Difluoromethyl- & Trifluoromethyl-Artemisinin to Interrupt the Life Cycle of Malaria Parasites, Year III**

Shreya Sundaresh Ramayya, 17, Palos Verdes Peninsula High School, Rolling Hills Estates, California

Fourth Award of \$1,000**CHEM033T Measurement of Radon Emanation and Its Correlation with Indoor Radon Levels in Some Areas of Mallow**

Caoimhe Marie Cronin, 15, St.Mary's Secondary School, Cork, Ireland

Shauna Murphy, 14, St.Mary's Secondary School, Cork, Ireland

Certificate of Honorable Mention**CHEM021I Formation of Poly(3-hydroxybutyrate) Inclusion Compounds with Urea and Thiourea**

Pavithran T. Ravindran, 17, W. Tresper Clarke High School, Westbury, New York

CHEM029T Bagasse-Based Activated Carbon as Effective Adsorbent for Heavy Metal Contamination from Industrial Activities (Case Study: Gold Mining Area in Mandor River, West Kalimantan)

Hansen Hartono, 17, SMA Katolik Gembala Baik, Pontianak, Indonesia

Shinta Dewi, 18, SMA Katolik Gembala Baik, Pontianak, Indonesia

CHEM030I Nucleophilic Difluoromethylation of Arylidene Meldrum's Acid Derivatives

Alexey Trifonov, 17, Moscow Chemical Lyceum, Moscow, Russian Federation

CHEM037I Comparative Studies of Gold Nanoparticles as Chemical Sensing Materials: Electronic Tongue vs. Electronic Nose, Year Three

Seung Hye (Beatrice) Choi, 16, University High School - Fresno, Fresno, California

CHEM043I Novel Design of Water Soluble Porphyrin Containing Supramolecular Complex Nanoparticles for Enhanced Photodynamic Cancer Therapy

Swetha Vanathy Shutthanandan, 17, Richland High School, Richland, Washington

CHEM060T From Greenhouse Gas to an Energy Source of the Future: New Findings on Emission and Formation of Methane

Antonia Hartmann, 19, Hanns-Seidel-Gymnasium, Hosbach, Germany

Felicitas Kaplar, 18, Hanns-Seidel-Gymnasium, Hösbach, Germany

All award winners and honorable mentions receive a subscription to "ChemMatters."

[American Committee for the Weizmann Institute of Science](#)

The American Committee for the Weizmann Institute of Science, founded in 1944, develops philanthropic support for the Weizmann Institute of Science in Israel, one of the world's premier scientific research institutions. The Dr. Bessie F. Lawrence International Summer Science Institute at the Weizmann Institute provides students with a unique opportunity to participate in hands-on studies in professional academic laboratories at the forefront of scientific research.

All-expense paid four week trip and scholarship to the Bessie Lawrence International Summer Science Institute

CELL023I Zip1 C-terminal Phosphorylation Promotes Zip1-Sgs1 Interaction in Meiotic Cells

Jay Wolf Zussman, 17, William A. Shine Great Neck South High School, Great Neck, New York

Alternate for trip**PLNT069I A Rapid Field Detection of Liberibacter Bacteria using Lateral Flow Technology**

Saumya Ramadugu Keremane, 18, Martin Luther King High School, Riverside, California

Trip and scholarship is held at the Weizmann Institute of Science in Rehovot, Israel each July. A valid passport is required for travel.

American Geosciences Institute

The American Geosciences Institute (AGI) is pleased to recognize three projects that best reflect the study of Earth and the mission of AGI. Founded in 1948, AGI strives to increase public awareness of the vital role of the geosciences to mankind and society. In support of Intel ISEF, AGI sponsors a first place award of \$1,000, a certificate and an AGI publication; a second award of \$750, a certificate and an AGI publication; and a third award of \$250, a certificate and an AGI publication.

First Award of \$1,000**EAEV048I Patination of Raw Lithic Materials for Analysis of Prehistoric Artifacts**

Emily Cross, 15, Hammarskjold High School, Thunder Bay, Canada

Second Award of \$750**PHYS048I Analyzing the Surface of Mercury in Three-Dimensions**

Elena Jayne Mitchell, 18, Walden School of Liberal Arts, Provo, Utah

Third Award of \$250

EAEV029I Impact of Eyjafjallajokull Volcano Eruption on Atmospheric Temperature in 2010

Tsai-Ju Yu, 18, National Lo-Tung Senior High School, Luodong Township, Yilan County, Chinese Taipei

American Intellectual Property Law Association

Founded in 1897, AIPLA is a national bar association constituted primarily of lawyers in private and corporate practice, in government service, and in the academic community. AIPLA represents a wide and diverse spectrum of individuals, companies and institutions involved directly or indirectly in the practice of patent, trademark, copyright, trade secret, and unfair competition law, as well as other fields of law affecting intellectual property. Our members represent both owners and users of intellectual property.

First Award of \$1,000

BEHA040T The Effect of Shape, Weight, and Diameter on Haptic Perception: An Active Haptic Sensing Study of the Predicted and Actual Grip Forces and Their Impacts on Weight Detection Thresholds

Sophia Nicole Korner, 16, DuPont Manual High School, Louisville, Kentucky

Diya Mathur, 16, DuPont Manual High School, Louisville, Kentucky

EBED020I TALK - An AAC Device: Converting Breath into Speech for the Disabled

Arsh Shah Dilbagi, 17, DAV Public School, Panipat, India

Second Award of \$250**EAEV091T IF - Intelligent Flow**

Eusebio da Conceicao Almeida, 20, Escola Profissional de Rio Maior, Rio Maior, Portugal

Joao Pedro Bronze Rodrigues, 17, Escola Profissional de Rio Maior, Rio Maior, Portugal

ROBO007I Autonomous Motion Planning for Hyper-Redundant Modular Robotic Systems using State Estimation, Obstacle Avoidance, and Intelligence Locomotion Algorithms

Puneeth Naga Sai Krishna Meruva, 17, Homestead Senior High School, Fort Wayne, Indiana

American Mathematical Society

The American Mathematical Society was founded in 1888, to further the interests of mathematical research & scholarship, as well as to serve the national/international community through its publications, meetings, advocacy & other programs. Friends and family of the late mathematician, Karl Menger, contribute to a fund in his memory, to be distributed by the AMS for annual awards at the Intel International Science and Engineering Fair.

First Award of \$2,000

MATH021I Characterizing the Constructible N-Division Points of the Rational C-Hypocycloids through Straightedge and Compass Constructions

Nitya Mani, 17, The Harker School, San Jose, California

Second Award of \$1,000

MATH036I Solution to the Realization Problem for Two Element Delta Sets

Stefan Luka Colton, 18, Hunter College High School, New York, New York

MATH046I Vector Parking Functions and Tree Inversions

Petar Milkov Gaydarov, 18, Model High School of Mathematics "Akad. Kiril Popov", Plovdiv, Bulgaria

Third Award of \$500

MATH005T Mathematical Fire Fighting: Combating Fire with Delaunay Triangulation and

Longitudinal-Reversible Cellular Automata

Vishal Rajesh, 16, Plano Senior High School, Plano, Texas

Nisha Rajesh, 15, Jasper High School, Plano, Texas

MATH0131 What Number Cannot Be Realized as the Number of Regions Divided by n Straight Lines?

Chia Hua Chang, 18, National Taichung Girls Senior High School, Taichung, Taiwan

MATH0201 Cylindric Young Tableaux and Their Properties

Eric Michael Neyman, 18, Montgomery Blair High School, Silver Spring, Maryland

MATH0401 Signatures of Multiplicity Spaces in Tensor Products of sl_2 and $Uq(sl_2)$ Representations

Shashwat Kishore, 18, Unionville High School, Kennett Square, Pennsylvania

Certificate of Honorable Mention**MATH0111 The Base Dependent Behavior of Kaprekar's Routine: A Theoretical and Computational Study Revealing New Regularities**

Daniel M. Hanover, 18, John L Miller Great Neck North High School, Great Neck, New York

MATH0171 A Generalisation of the Determinant to Rectangular Matrices: Implications in Gauge Theory

Abhimanyu Pallavi Sudhir, 15, Dhirubhai Ambani International School, Mumbai, India

MATH0341 Categorizing Point Sets with No Empty Pentagons

George Drimba, 17, Stuyvesant High School, New York, New York

MATH0371 Connected Matchings in Graphs with Independence Number 2

Jung Yoon Kim, 17, Thomas Jefferson High School for Science and Technology,
Alexandria, Virginia

MATH0391 Preserving Algebraic Structures on Exact Infinity: Categories with the K-theory Functor

Sanath Kumar Devalapurkar, 15, West High School, Torrance, California

A booklet on Karl Menger will be given to each winner.

[American Meteorological Society](#)

The American Meteorological Society (AMS) is the nation's leading scientific and professional society advancing the atmospheric and related sciences, technologies, applications, and services for the benefit of society. Founded in 1919, the AMS has a membership of more than 14,000 professionals, students, and weather enthusiasts. AMS offers numerous scholarships and fellowships to support students pursuing careers in the field.

First Award of \$2,000

SOFT0091 An Atmospheric Visibility Measurement System Using Smartphone

Jianing Lin, 16, The High School Affiliated to Renmin University of China, Beijing,
China

Second Award of \$1,000

EAEV045T Secrets of San Lorenzo Valley's Atmosphere, Part Three: The Dangers of Particulate Matter 2.5 and SLV Inversion Analysis

Connor Burke Lydon, 18, San Lorenzo Valley High School, Felton, California

Natalie Gallagher, 17, San Lorenzo Valley High School, Felton, California

Third Award of \$500

EBED041T Agri-Weather: Meteorological Solutions for the Agribusiness

Pedro Otavio Liberato Rocha, 17, Instituto Federal de Educacao, Ciencia e Tecnologia de Mato Grosso do Sul, Campo Grande, Brazil

Eduardo da Silva Campos, 19, Escola Antonietta e Leon Feffer, Sao Paulo, Brazil

Lucas Moraes, 17, Instituto Federal de Educacao, Ciencia e Tecnologia de Mato Grosso do Sul, Campo Grande, Brazil

Certificate of Honorable Mention

EAEV029I Impact of Eyjafjallajokull Volcano Eruption on Atmospheric Temperature in 2010

Tsai-Ju Yu, 18, National Lo-Tung Senior High School, Luodong Township, Yilan County, Chinese Taipei

EAEV066I The Effect of the Atlantic Multidecadal Oscillation on the Accumulated Cyclone Energy and Annual Storm Counts of Atlantic Tropical Storms and Hurricanes

Emma Camille Barbin, 16, Saint Joseph's Academy, Baton Rouge, Louisiana

EAEV073I The Effect of the Atlantic Ocean on Polar Vortex Weakening

Jesse Tan Zhang, 17, Fairview High School, Boulder, Colorado

Winners receive a certificate, an AMS Journal/Bulletin Archive DVD, and a one-year student membership to the AMS. The student membership includes a subscription to the "Bulletin of the American Meteorological Society" or "Weatherwise" magazine.

[American Physiological Society](#)

The American Physiological Society (APS) is a nonprofit devoted to fostering education, scientific research, and dissemination of information in the physiological sciences. The Society was founded in 1887 with 28 members and today has more than 10,500 members. APS participates as a Special Awards Sponsor for the Intel ISEF. Each year, the APS recognizes outstanding high school research projects in life sciences. Four students receive cash awards and a year's subscription to the APS journal, "Physiology."

First Award of \$1,500

CELL056I **Directed Differentiation of Human Pluripotent Stem Cells into Functional Kidney Cells that Form Nephrons in Kidney Scaffolds**

Demetri Maxim, 17, Gould Academy, Bethel, Maine

Second Award of \$1,000

BCHM031I **The Role of Extracellular Nuclear Factor-Erythroid Derived Protein 2 (NF-E2) as a Danger Associated Molecular Pattern (DAMP) Released during Acrolein Induced Renal Fibrosis**

Sanjana J. Rane, 17, DuPont Manual High School, Louisville, Kentucky

Third Award of \$500

BMED120I **Characterization of Vascular Responses to Mechanically Induced Continuous Flow Patterns in Bovine Models**

Sumanth Chennareddy, 17, DuPont Manual High School, Louisville, Kentucky

APS Exceptional Science Award for \$500

CBIO040T **Identification of Differentially Expressed Genes in Pancreatic Regulatory T Cell Survival**

Jake Spencer Carrion, 16, Jericho Senior High School, Jericho, New York

Michael Benett Carrion, 16, Jericho Senior High School, Jericho, New York

Four winners will receive cash, a certificate, a t-shirt, and a one-year subscription to APS publications.

American Psychological Association

The American Psychological Association is the largest scientific and professional organization representing psychology in the United States. APA is the world's largest association of psychologists, with nearly 130,000 researchers, educators, clinicians, consultants and students as its members. APA's mission is to advance the creation, communication and application of psychological knowledge to benefit society and improve people's lives.

First Award of \$1,500

BEHA016I **Sticks and Stones May Break My Bones: Middle School Students' Perceptions of Bullying**

Aansh Shah, 17, Roslyn High School, Roslyn, New York

Second Award of \$1,000

BEHA033I **Stay Tuned! Comparing the Effects of Long and Short-Term Auditory Stimulation for Increasing the Sensitivity of a Person's Hearing**

Alexandra Zoe Garth, 16, Redeemer Baptist School, North Parramatta, Australia

Third Award of \$500

BEHA010T **The Effect of Multitasking on Reading Comprehension in Teens**

Colter Norick, 17, Columbia Falls High School, Columbia Falls, Montana

Colin Norick, 16, Columbia Falls High School, Columbia Falls, Montana

BEHA028I **Game Theoretic Model of Genetic Discrimination**

Margaret Caroline Steiner, 17, Academy of Science and Technology, The Woodlands, Texas

BEHA049T **Constructing a Carcinogen Indicator Application Based on Statistical Analysis of Statewide Cancer Incidences in Relationship with Graphical Consumer Data**

Sarah Asfari, 17, Al-Huda School, College Park, Maryland

Yousuf Asfari, 15, Al-Huda School, College Park, Maryland

BMED101T **Intranasal Insulin Enhances Spatial Memory and Cognitive Adjustment**

Tran Minh Hieu, 17, Lam Son High School for the Gifted, Thanh Hoa, Viet Nam

Le Hoang Nhat, 17, Lam Son High School for gifted students, Thanh Hoa, Viet Nam

EBED020I **TALK - An AAC Device: Converting Breath into Speech for the Disabled**

Arsh Shah Dilbagi, 17, DAV Public School, Panipat, India

Award recipients also receive a certificate and a one-year student affiliate membership to APA

American Society for Horticultural Science

Founded in 1903, the purposes of the American Society for Horticultural Science are to promote and encourage national and international interest in scientific research and education in horticulture in all its branches.

First Award of \$1,000

PLNT014I **The System Establishment of Micro Grafting between *in vitro* Regeneration Buds and Seedling Rootstocks in Peony**

Yu Wen, 15, Shanghai Qibao High School, Shanghai, China

Second Award of \$500

PLNT029I Solving World Hunger: One Family at a Time

Leah Hefty, 17, DeKalb High School, Waterloo, Indiana

Third Award of \$250

PLNT023I The Role of Ethylene in Cotyledon Curling of Japanese Radish (*Raphanus sativus* var. *longipinnatus*)

Yusuke Kubo, 17, Ibaraki Prefectural Namiki Secondary School, Tsukuba-city, Japan

Each awardee and his/her school will receive a one-year subscription to ASHS "HortScience" and "Hort Technology," plus a mounted certificate.

[American Society for Microbiology](#)

Founded in 1899, the American Society for Microbiology (ASM) is the largest single life science membership organization in the world. Members worldwide represent 26 disciplines of microbiological specializations plus a division for microbiology educators. The ASM's awards honors the most outstanding microbiology projects.

First Award of \$2,500

MCRO039I Suppression of Antimicrobial Resistance Using CRISPRs

Karissa Wang, 16, Northern Utah Academy for Math Engineering and Science, Layton, Utah

Second Award of \$1,750

MCRO001I Magnetotactic Bacteria with a Faraday Application

Bernard Adriaan Smit, 18, Hoerskool Waterkloof, Pretoria, South Africa

Third Award of \$1,000

MCRO055I **Detecting Novel Strains of Lassa Virus via an Interdisciplinary Modernization Based on Genomic Sequencing**

Matthew Dae-Young Park, 17, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

Fourth Award of \$750

MCRO006I **Proteomic Characterization of Mosquito Host Cell Glycoproteins during Dengue Virus Egress**

Carly Elizabeth Crump, 18, Episcopal School of Jacksonville, Jacksonville, Florida

Fifth Award of \$400

MCRO005I **Determination of the Antimicrobial Activity of *Heliotropium arborescens* in Cultures of Bacteria that Cause Infection in the Respiratory Tract**

Jeffrey Nathan Freidenson Bejar, 17, Leon Pinelo, Lima, Peru

MCRO009I **An RK2 Mediated Bacterial Conjugation Delivery System for Artificial Genes Coding for Antimicrobial Polypeptides: A Novel Synthetic Biology Approach to Antibiotic Resistance**

Logan Thrasher Collins, 18, Fairview High School, Boulder, Colorado

MCRO021I **Designing a Genetic CRISPR-cas Detection Probe for Adherent Invasive *Escherichia coli* Utilizing Comparative Genomics**

Brian Joseph Righter, 17, Smithtown High School East, Saint James, New York

MCRO025I **Identification of a Crucial Legionnaire's Disease Virulence Factor: The Transmembrane Permease Lpg0730 Is Integral to the Ability of *Legionella pneumophila* to Infect Protozoan Host Cells**

Nicholas P. Miller, 18, West Linn High School, West Linn, Oregon

MCRO036I The Medicinal Effects of Juglone

Rachel Johns, 18, Northwestern High School, Kokomo, Indiana

MCRO060I Isolation of a Bacteriophage for *Staphylococcus aureus* from Rumen Fluid

Rachel Danielle Swope, 16, Central Bucks High School West, Doylestown, Pennsylvania

All finalists in the Microbiology Category receive a student membership to ASM, which includes a one-year subscription to "Microbe," ASM's monthly news magazine, and access to the members only web resources.

American Statistical Association

The American Statistical Association is the world's largest community of statisticians. The ASA supports excellence in the development, application, and dissemination of statistical science through meetings, publications, membership services, education, accreditation, and advocacy. Our members serve in industry, government, and academia in more than 90 countries, advancing research and promoting sound statistical practice to inform public policy and improve human welfare.

First Award of \$1,500

MATS057I Developing an Automatic Nonrigid Image Registration Algorithm for Nanoscience Research

Melissa Amber Yu, 18, Farragut High School, Knoxville, Tennessee

Second Award of \$1,000

SOFT032I The Phoney Lift: Using Accelerometers to Identify People

Yashaswini Makaram, 17, Massachusetts Academy of Math and Science, Worcester,

Massachusetts

Third Award of \$500

CBIO007I **A Novel Coevolution Data-based Approach for Computational Drug Design to Target Intrinsically Disordered Proteins**

Niranjan Balachandar, 18, Texas Academy of Mathematics and Science, Denton, Texas

Certificate of Honorable Mention

BEHA036I **Growing Pains: Long-Term Effects of Physical Activity and Sleep Patterns on Adolescent Health**

Grace W. Hwang, 17, Hershey High School, Hershey, Pennsylvania

BMED070I **Development of a Bakery Product for Celiacs: A Novel Approach for Fiber Enrichment Using Agroindustrial Residues**

Alessandro Hippler Roque, 18, Instituto Federal de Educacao, Ciencia e Tecnologia do Rio Grande do Sul – Campus Osorio, Osorio, Brazil

BMED138I **Development of a Novel Biomarker Algorithm for the Early Detection of Liver Cancer**

Jeremy Wang, 14, Methacton High School, Eagleville, Pennsylvania

EAEV064I **Modeling and Analyzing Melting Arctic Sea Ice with Percolation Theory**

Anthony Lu Cheng, 16, Hillcrest High School, Midvale, Utah

MATH015I **A Mathematical Analysis of the Transmission of Ebola Hemorrhagic Fever using Intuitive Graphical Representations and a Stochastic SEIR Epidemiological Model**

Robert Brooks Carlson, 16, Rustburg High School/Central Virginia Governor's School for Science and Technology, Rustburg, Virginia

PHYS0201 **AGN Properties and Host Galaxy Star Formation Rate in Palomar-Green Quasars**

Lia Eggleston, 15, Home School, Laramie, Wyoming

ROBO017T **Functional Neural Networks Evaluated by Weierstrass Polynomials**

Phillip Kuznetsov, 17, West High School, Salt Lake City, Utah

William Hebgen Guss, 18, West High School, Salt Lake City, Utah

Patrick Bo Chen, 17, West High School, Salt Lake City, Utah

All American Statistical Association finalists receive one-year subscriptions of "Significance" and "Chance." Their schools will also receive a one-year school membership in the American Statistical Association.

Ashtavadhani Vidwan Ambati Subbaraya Chetty Foundation

AVASC is an educational and medical service foundation dedicated to recognizing academic talent and providing services to the needy. AVASC will award projects that display outstanding creativity, ingenuity, and have the potential to alleviate the human condition or mark a substantive advancement in the scientific field.

First Award of \$1,000

BCHM0311 **The Role of Extracellular Nuclear Factor-Erythroid Derived Protein 2 (NF-E2) as a Danger Associated Molecular Pattern (DAMP) Released during Acrolein Induced Renal Fibrosis**

Sanjana J. Rane, 17, DuPont Manual High School, Louisville, Kentucky

BMED0411 **A Novel Synergistic Approach for Enhancing Immunotherapy in the Treatment of Melanoma**

Emily Lorin Ashkin, 17, Providence Day School, Charlotte, North Carolina

Second Award of \$500

BMED151| **Engineered Intraocular Injection Guide (IIG): Pain Reduction in Ophthalmic Disease Treatment**

Vikas Rammohan Maturi, 17, Carmel High School, Carmel, Indiana

CBIO034| **Enabling Precision Medicine with Big Data: A Cross-Platform Framework to Computationally Characterize Gene Presence and Function**

Swetha Revanur, 16, Evergreen Valley High School, San Jose, California

CHEM037| **Comparative Studies of Gold Nanoparticles as Chemical Sensing Materials: Electronic Tongue vs. Electronic Nose, Year Three**

Seung Hye (Beatrice) Choi, 16, University High School - Fresno, Fresno, California

ENEV019| **The Heavy Metal Movement Phase II: A Field and Laboratory Study of *Panicum virgatum* L. and Its Ability to Phytoremediate Soil from the Tar Creek Superfund Site**

McKalee Steen, 17, Grove High School, Grove, Oklahoma

ENMC028| **Development of Novel Process for Large-Scale Fabrication of High Surface Area MOF (Metal Organic Framework) Membranes for CO₂ and H₂ Capture**

Naveena Bontha, 15, Hanford High School, Richland, Washington

MATH022| **Mathematical Modeling and Simulation of Cardiac Tissue Electrophysiology: Effect of Cardiac Deformation on Action Potential Duration**

Swapnil Pande, 17, Mills E. Godwin High School, Henrico, Virginia

ROBO0271 Brain-Actuated Robotics: Controlling and Programming a Humanoid Using Electroencephalography

Ava Carmen Lakmazaheri, 17, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

SOFT0201 A Hand-centric Gestural Interface for 3D Navigation and Interaction in Visualization

Justin Barish, 17, Kings Park High School, Kings Park, New York

Equivalent awards available for non-U.S. winners.

[Association for Computing Machinery](#)

ACM is widely recognized as the premier membership organization for computing professionals, delivering resources that advance computing as a science and a profession; enable professional development; and promote policies and research that benefit society. ACM hosts the computing industry's leading Digital Library and serves its global members and the computing profession with journals and magazines, conferences, workshops, electronic forums, and Learning Center.

First Award of \$1,000

SOFT0271 Image Processing Algorithms towards Optical Detection of 2D Nanomaterials

Onkar Singh Gujral, 18, La Martiniere for Boys, Kolkata, Kolkata, India

Second Award of \$500

SOFT0631 A Novel Algorithm for #SAT

Elliot Gorokhovskiy, 16, Fairview High School, Boulder, Colorado

Third Award of \$300

SOFT053T Development of a Rapid, Accurate, and Private Contact Tracing System Utilizing Smartphone Proximities

Clarissa Sophie Scoggins, 16, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

Rohan Suri, 16, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

Fourth Award of \$200**MATH032I Approximating the Maximum k-Colorable Subgraph Problem on Dotted Interval Graphs**

Alexander Lin, 17, Millburn High School, Millburn, New Jersey

SOFT033I Composing Music with Sign Language Pattern Recognition

Amina Mustafa, 15, Dearborn Center for Math, Science, and Technology, Dearborn Heights, Michigan

SOFT039T Generation via Embedding of Quasi-Optimal Networks for Application in High Performance Computing

Sahil Abbi, 16, Herricks High School, New Hyde Park, New York

Arjun Kapoor, 17, The Wheatley School, Old Westbury, New York

ACM Special Award winners receive complimentary ACM Student Memberships for the duration of their undergraduate education. Intel ISEF finalists competing in the Computer Science category receive complimentary ACM Student Lite Memberships upon written request.

[Association for the Advancement of Artificial Intelligence](#)

AAAI is a scientific society devoted to advancing the scientific understanding of the mechanisms underlying thought and intelligent behavior and their embodiment in

machines. AAI promotes research in, and responsible use of, artificial intelligence, as well as public understanding of artificial intelligence. AAI also strives to improve the teaching and training of AI practitioners, and provide guidance on the importance and potential of current AI developments and future directions.

First Award of \$1,500

SOFT036I Low-Cost, Fun and Colorful Glove for 3D Hand Posture Estimation System

Chin Yeoh, 15, Chengdu International School, Chengdu, China

Second Award of \$1,000

SOFT051T Automated Illustration of Text to Improve Semantic Comprehension

Konrad Neal Urban, 16, Fox Chapel Area High School, Pittsburgh, Pennsylvania

Suvir Prakash Mirchandani, 16, Fox Chapel Area High School, Pittsburgh, Pennsylvania

Third Award of \$500

ROBO011I Biologically-Inspired Flying Sensor Platform for Autonomous Emergency Response

Mihir Garimella, 15, Fox Chapel Area High School, Pittsburgh, Pennsylvania

Honorable Mention

CBIO048I Artificial Evolution

Martin Rolf Henning Lindblom, 18, Lugnetgymnasiet, Falun, Sweden

ENMC037I Little Insect Project (Inspired by DARPA LittleDog Project)

Vanessa Wang, 15, American High School, Fremont, California

ROBO017T Functional Neural Networks Evaluated by Weierstrass Polynomials

Phillip Kuznetsov, 17, West High School, Salt Lake City, Utah

William Hebgen Guss, 18, West High School, Salt Lake City, Utah

Patrick Bo Chen, 17, West High School, Salt Lake City, Utah

SOFT049I Self-Driving Car Intersection

Neal Vinay Agarwal, 17, Chantilly High School, Chantilly, Virginia

SOFT063I A Novel Algorithm for #SAT

Elliot Gorokhovsky, 16, Fairview High School, Boulder, Colorado

Winners of this artificial intelligence award will receive a certificate, and their schools will receive a one-year membership in the Association for the Advancement of Artificial Intelligence, including a subscription to "AI Magazine."

[Astronomical Society of the Pacific and the American Astronomical Society](#)

The Astronomical Society of the Pacific is a scientific and educational organization with international membership. The American Astronomical Society is the premier American society of professional astronomers.

Priscilla and Bart Bok First Award of \$1,000

PHYS051T A Search for Exoplanets in the Open Star Clusters Messier 35 and Kaposov 62 Using A Novel Large-Scale Photometric Algorithm for the "Crippled" Kepler Mission

Shashank Dholakia, 16, Adrian C Wilcox High School, Santa Clara, California

Shishir Dholakia, 16, Adrian C Wilcox High School, Santa Clara, California

Priscilla and Bart Bok Second Award of \$500**PHYS033T Detection of Cosmic Particles Using Balloons**

Maxime Horlaville, 18, Lycee La Mennais, Guerande, France

Jeremiah Alexis Knockaert, 17, Lycee La Mennais, Guerande, France

Quillere Manon, 16, Lycee La Mennais, Guerande, France

The awarded funds are intended to be used by the recipients to further their education and research efforts. Up to \$1,000 in travel is also provided for each recipient to attend the winter meeting of the AAS following the receipt of the award.

ASU Rob and Melani Walton Sustainability Solutions Initiatives

ASU Walton Sustainability Solutions Initiatives are the result of a \$27.5 million investment in Arizona State University's Julie Ann Wrigley Global Institute of Sustainability by the Walton Family Foundation. Within the Walton Sustainability Solutions Initiatives, diverse teams of faculty, students, entrepreneurs, researchers, and innovators collaborate to deliver sustainability solutions, accelerate global impact, and inspire future leaders through eight distinct initiatives.

First Award of \$2,500**BMED055I Temperature-Independent, Portable, and Rapid Field Detection of Ebola via a Silk-Derived Lateral-Flow System**

Olivia Anne Hallisey, 16, Greenwich High School, Greenwich, Connecticut

EGPH023I Novel Low Grade Waste Heat Recovery System with Simultaneous Electricity Generation, Carbon Sequestration and Urea Production

Ethan Novek, 16, Greenwich High School, Greenwich, Connecticut

ENEV055I Production of Energy and Fertilizer from Ordinary Waste Materials through Micro-Scale Anaerobic Digestion

Robert Z. Halfon, 16, American Heritage School of Boca Delray, Delray Beach, Florida

ENEV080T **BioDissolve: The Natural Breakdown of Polystyrene Waste through the Application of *Pseudomonas putida* to Produce Usable Byproducts**

James Savoldelli, 17, Columbia Grammar and Preparatory School, New York City, New York

Hugh Savoldelli, 17, Columbia Grammar and Preparatory School, New York City, New York

Drew Tomback, 17, Columbia Grammar and Preparatory School, New York City, New York

Carnegie Mellon University Leonard Gelfand Center for Service Learning and Outreach

Carnegie Mellon University has been a birthplace of innovation since 1900. The Gelfand Center assists students and faculty who share expertise to motivate learners or solve problems in the community. Mechanical Engineering faculty judges for the Energy Innovation Award are affiliated with the Scott Institute for Energy Innovation, a university-wide research initiative at Carnegie Mellon focused on improving energy efficiency and developing new, clean, affordable and sustainable energy sources.

First Award of \$2,500

EGPH023I **Novel Low Grade Waste Heat Recovery System with Simultaneous Electricity Generation, Carbon Sequestration and Urea Production**

Ethan Novek, 16, Greenwich High School, Greenwich, Connecticut

Second Award of \$1,500

EGPH017I **Utilizing a Piezoelectric Crystal Tree to Harvest Electrical Energy from Rain Water**

Kelly Devens, 17, Roanoke Valley Governor's School for Science and Technology, Roanoke, Virginia

Third Award of \$1,000

EGPH042T My School Self-Powered

Raneem Hasan Alqwasm, 15, Alawda Basic School for Girls, Bethlehem, Palestine

Amal Hashim Ali, 15, Alawda Basic School for Girls, Bethlehem, Palestine

China Association for Science and Technology (CAST).

China Association for Science and Technology (CAST) is the largest organization of scientists and technologists in China. One of its missions is to promote public understanding of science. Having developed science education programs, CAST supports youth and adolescents in becoming citizens with high scientific literacy. CAST awards are given to the projects that best reflect the originality and innovation of the students' work in all scientific disciplines.

Award of \$ 1,200

BMED082I Low-Cost Disposable Device for Point-of-Care Nucleic Acid Testing of HIV: Sample-to-Answer in 60 Minutes for Less than \$5.00

Nicole Sabina Ticea, 16, York House School, Vancouver, Canada

CBIO035T Systematic Rational Identification of Sex-Linked Molecular Alterations and Therapies in Cancer

Sadhika S. Malladi, 17, The Harker School, San Jose, California

Jonathan QuanXuan Ma, 16, The Harker School, San Jose, California

CBIO046T Wearable LED Illumination for Skin Sensitivity Calibration

Madhumitha Shridharan, 17, NUS High School of Mathematics and Science, Singapore, Singapore

Yuhua Ren, 17, NUS High School of Mathematics and Science, Singapore, Singapore

CELL017I Advancing the Cancer Stem Cell Approach for Early Tumorigenesis: Delineation of p53 Pathways in Differentially Expressed Tumor-Initiating Cells

Fan Liu, 17, Fontbonne Academy, Milton, Massachusetts

CHEM008T Obtention of Detergent Solution for Organ's Decellularization Process

Vitoria Muller Gerst, 17, Fundacao Escola Tecnica Liberato Salzano da Cunha, Novo Hamburgo, Brazil

Gabriela Bronca Lopes, 18, Fundacao Escola Tecnica Liberato Salzano Vieira da Cunha, Novo Hamburgo, Brazil

MATS003T Revolutionary Ligand for Spatial Modification of Biologically Active Nanoparticles

Gennady Vatkovskiy, 18, Lyceum # 2, Cheboksary, Russian Federation

Timofei Iakhontov, 18, Lyceum #3, Cheboksary, Russian Federation

MCRO001I Magnetotactic Bacteria with a Faraday Application

Bernard Adriaan Smit, 18, Hoerskool Waterkloof, Pretoria, South Africa

PHYS015I Efficient Light Transport Simulation through Utilization of Temporal Coherence

Lukas Stockner, 18, Maria-Ward-Gymnasium Altotting, Altotting, Germany

ROBO027I Brain-Actuated Robotics: Controlling and Programming a Humanoid Using Electroencephalography

Ava Carmen Lakmazaheri, 17, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

SOFT051T Automated Illustration of Text to Improve Semantic Comprehension

Konrad Neal Urban, 16, Fox Chapel Area High School, Pittsburgh, Pennsylvania

Suvir Prakash Mirchandani, 16, Fox Chapel Area High School, Pittsburgh,

Pennsylvania

Each winner will also receive a certificate. Award will be shared by team members.

Coalition for Plasma Science (CPS)

The Coalition for Plasma Science is a group of institutions, organizations, and companies joining forces to increase awareness and understanding of plasma science and its many applications and benefits for society.

First Award of \$1,500

PHYS060T Developing a More Efficient Fusion Reactor through Computer Modeling

Jorge Antonio Perez, 15, Albuquerque Academy, Albuquerque, New Mexico

Che Manuel Olavarria Gallegos, 16, Albuquerque Academy, Albuquerque, New Mexico

Consortium for Ocean Leadership

A Washington, DC based nonprofit organization that represents 89 of the leading public and private ocean research educational institutions, aquaria and industry; working to advance research, education and sound ocean policy. The Organization also manages ocean research and education programs in scientific ocean drilling, ocean observing, ocean exploration and ocean partnerships. Awards will be given to the best projects in ocean sciences, in the areas of oil spill related science, marine geosciences, and overall ocean exploration and conservation.

Award of \$2,000 for best overall project in ocean science and exploration.

EAEV0081 Hohonukai: An Environmental Study of Hawaii's Marine Biota Using Underwater Time-Lapse Photography

Christopher James Lindsay, 16, Iolani School, Honolulu, Hawaii

Award of \$2,000 for a project in oil spill related science, projects focusing on the ocean or coasts.

ENEV0471 **The Development of an Oleophilic and Hydrophobic Polystyrene Synthetic Polymer Coated Cotton for High Efficiency Marine Oil Spill Absorption**

Sahil Veeramoney, 15, Oregon Episcopal School, Portland, Oregon

Honorable Mention

EAEV009T **March of the Molokai Mangrove: The Socio-Economic and Ecological Impacts of Introduced Red Mangrove (*Rhizophora mangle*) on Molokai, Hawaiian Islands**

Sarah 'Alohilani Jenkins, 17, Molokai High School, Ho'olehua, Hawaii

Lily Nalulani Jenkins, 15, Molokai High School, Ho'olehua, Hawaii

EAEV0471 **A Method for Identifying the Photoproducts, Mechanisms, and Toxicity of Petroleum from the Deepwater Horizon by High-Performance Liquid Chromatography and DNPHi Derivatization**

Keiana Ashli Cave, 17, Lusher Charter High School, New Orleans, Louisiana

ENEV0411 **Recycling Hair: Investigating Flocculation as an Alternate Method of Assembling Hair Fibers for Oil Recovery**

Dominique Marie Marchini, 17, Sleepy Hollow High School, Sleepy Hollow, New York

ENEV0731 **International Oil Spill Remediation: The Numerical Simulation of an *in-situ* Subsea Separator, Part II**

Karan Jerath, 18, Friendswood High School, Friendswood, Texas

ENMC041T **Gills: The Use of Electrolysis for Extended Underwater Exploration**

Ishpreet Singh, 16, Albemarle High School, Charlottesville, Virginia

Seth Wijesooriya Liyanage, 16, Albemarle High School, Charlottesville, Virginia

ROBO004I Convolutional Neural Network Structure for Ocean Health

Evan Cater, 17, Yorktown High School, Arlington, Virginia

Drexel University

Drexel University will award eight full scholarships to those students whose projects match Drexel's curriculum. Drexel is recognized for its focus on experiential learning through co-operative education, its commitment to cutting-edge academic technology and its growing enterprise of use-inspired research. Drexel Co-op enables students to balance classroom theory with practical, hands-on experience.

Full tuition scholarship

CHEM003I Effects of Morphology and Illumination on the Catalytic Properties of Gold Nanoparticles

Bo You, 17, Miami Palmetto Senior High School, Miami, Florida

EAEV025I Assessing the Influence of Swamp Areas on Rangeland Stream Flow Rate at Blair Wallis, Wyoming

Blandon E. Su, 17, Adlai E. Stevenson High School, Lincolnshire, Illinois

EAEV074I Identifying and Remediating the Sources of Pollution in Impaired Bangor Streams

Paige Elizabeth Brown, 16, Bangor High School, Bangor, Maine

EBED036I A Wireless Smartphone-Based System for Diagnosis of Pulmonary Illnesses

Maya Varma, 16, Presentation High School, San Jose, California

EGPH004I **Is There a Correlation between Hydropower Efficiency and Flap Arrangement?**

Craig Worley, 17, Luella High School, Locust Grove, Georgia

EGPH012I **Fueling the World One Layer at a Time: Improving the Efficiency of the Gratzel Cell with Nanotechnology**

Aidan Rhys Dwyer, 17, Northport High School, Northport, New York

PHYS006I **Critical Point Energy Storage**

Shixuan Justin Li, 17, Rutherford High School, Panama City, Florida

ROBO027I **Brain-Actuated Robotics: Controlling and Programming a Humanoid Using Electroencephalography**

Ava Carmen Lakmazaheri, 17, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

Scholarships are renewable for up to five years pending maintenance of a 3.0 GPA and full-time status. Each scholarship is valued at \$150,000. Scholarships will go into effect upon admission to the University.

European Organization for Nuclear Research-CERN

CERN, the European Organization for Nuclear Research, is one of the world's largest and most respected centers for scientific research. Its business is fundamental physics, finding out what the universe is made of and how it works. At CERN, the world's largest and most complex scientific instruments are used to study the basic constituents of matter and the fundamental particles. By studying what happens when these particles collide, physicists learn about the laws of nature.

All expense paid trip to tour CERN

MATH021I **Characterizing the Constructible N-Division Points of the Rational C-Hypocycloids through Straightedge and Compass Constructions**

Nitya Mani, 17, The Harker School, San Jose, California

MATH035I

Boolean Algebra: A Nature-Inspired Framework for the Analysis of Cancer Genes

Krithika Iyer, 16, iSchool High STEM Academy, Lewisville, Texas

PHYS021I

Trapped Field Magnets with Thin Film Superconductor Tapes

Kavita Selva, 15, Clear Lake High School, Houston, Texas

PHYS023I

2015: A Photon Odyssey

Jasmine Sumpter, 14, Seacoast Collegiate High School, Santa Rosa Beach, Florida

PHYS047I

Pion Condensates in an External Magnetic Field

Julia Samantha Sakowitz, 16, The Brearley School, New York, New York

PHYS051T

A Search for Exoplanets in the Open Star Clusters Messier 35 and Kaposov 62 Using A Novel Large-Scale Photometric Algorithm for the "Crippled" Kepler Mission

Shashank Dholakia, 16, Adrian C Wilcox High School, Santa Clara, California

Shishir Dholakia, 16, Adrian C Wilcox High School, Santa Clara, California

ROBO011I

Biologically-Inspired Flying Sensor Platform for Autonomous Emergency Response

Mihir Garimella, 15, Fox Chapel Area High School, Pittsburgh,

Pennsylvania

ROBO026I

Object Recognition Based UAV Control

Francisca Vasconcelos, 17, Torrey Pines High School, San Diego, California

SOFT039T

Generation via Embedding of Quasi-Optimal Networks for Application in High Performance Computing

Sahil Abbi, 16, Herricks High School, New Hyde Park, New York
Arjun Kapoor, 17, The Wheatley School, Old Westbury, New York

SOFT051T

Automated Illustration of Text to Improve Semantic Comprehension

Konrad Neal Urban, 16, Fox Chapel Area High School, Pittsburgh, Pennsylvania
Suvir Prakash Mirchandani, 16, Fox Chapel Area High School, Pittsburgh, Pennsylvania

Alternate for CERN trip

ENMC040I

A Biomimetic Non-Planar Approach to Reducing Induced Drag from Trailing Vortices

Candace Rose Brooks-Da Silva, 15, Academie Ste. Cecile International School, Windsor, Canada

PHYS028I

Distribution and Kinematics of Cepheids in the Milky Way Galaxy

Nadiia Maslova, 16, Odessa Mariinsky High School, Odessa, Ukraine

This award is made possible by cooperative grants from Intel and CERN, which

collaborates with Intel in the framework of CERN openlab. Students must be available for travel to Switzerland and France on the established dates of 14-19 of June 2015 - (this may require leaving one day earlier and returning one day after). Passport and perhaps a visa are required for travel.

Florida Institute of Technology

Florida Institute of Technology, located on Florida's Space Coast near Kennedy Space Center, offers full undergraduate and graduate programs in engineering, science, psychology, business and aeronautics.

Full Tuition Presidential Scholarship

ANIM040I **Alzheimer's and *Drosophila*: Effect of Age on Efficacy of Treatment in a Model System**

Elise Nicole Paietta, 17, Carroll High School, Dayton, Ohio

CBIO004I **The Diagnosis: Disease Identification of Airborne Pathogens Using Mobile Non-Invasive Techniques**

Alexis Rose Hopkins, 16, Fort Walton Beach High School, Fort Walton Beach, Florida

MATS008I **Improved Efficiency of Seawater Steam Generation Using Carbon Nanoparticles**

Carolyn Kay Jons, 17, Eden Prairie High School, Eden Prairie, Minnesota

Florida Tech is offering three full tuition scholarships valued at approximately \$150,000 each.

Fondazione Bruno Kessler

The Bruno Kessler Foundation (FBK) is a leading research center in Trento, Italy. WebValley is the FBK Summer School program for interdisciplinary scientific research. A team of enthusiastic and motivated high school students and FBK researchers accepts a project challenge, this year on a novel web platform for data analytics on signals from wearable

sensors. FBK's Board of Directors will award 3 Intel ISEF finalists full fellowships, including travel to Italy, to be part of the WebValley team in June 2015.

Award to Travel to Trento, Italy to participate in summer school "Web Valley"

EBED042I Gas Analysis Using Ultrasonic

Niklas Fauth, 17, Friedrich-Schiller-Gymnasium, Marbach am Neckar, Germany

EGPH045I Novel Automated Designs and Rapid Multivariate Optimization of Next-Generation Multijunction Quantum Dot Solar Cells Using Monte Carlo Modeling

Valerie S. Ding, 18, Catlin Gabel School, Portland, Oregon

ENMC007I A Novel Approach to 3D Prototype Production

Andrew Kenneth Noonan, 18, International Baccalaureate School at Bartow High School, Bartow, Florida

PHYS004T Vortex Ring State Simulation in a Wind Tunnel: Drone Flight Stability and Rotor Lift

Vivianne Tu, 18, Plano Senior High School, Plano, Texas

Claire Goeckner-Wald, 18, Plano Senior High School, Plano, Texas

Award to participate in summer school "Web Valley" in Trento, Italy

EBED028I NapX: Safety Alert Mobile Application to Detect Drowsy Drivers

Mehar Kaushik Nallamalli, 17, Capital High School, Olympia, Washington

EBED034T SmartGuard: An Emergency Alert System for Android-OS

Jaime Angel Hernandez, 17, Veterans Memorial Early College High School, Brownsville, Texas REMOVE

Aleida Olvera, 17, Veterans Memorial Early College High School, Brownsville, Texas

Finalists must meet eligibility requirements for travel, and return documentation promptly to be considered. A valid passport is required for travel and visit to Italy.

GoDaddy

In addition to offering domain names, website builders and hosting, GoDaddy believes it has a responsibility to make a difference in the community. As part of that philosophy, GoDaddy contributes to nonprofit organizations that focus on causes meaningful to customers, employees and our community. GoDaddy will be presenting the following awards, the Web Innovator Award, the Mobile Application Award, the Open Source Award, the Data Award and the Forward Thinker Award.

\$1,500 Data Award

SOFT026I **Radiation Randomness: The Entropy of Thin Air**

Dominic Marcuse, 16, Mary Lyon Pilot High School, Brighton, Massachusetts

\$1,500 Forward Thinker Award

SOFT040T **Tracking and Killing Insects Using Photonic Fences**

Bimba Shrestha, 18, Maharishi School of the Age of Enlightenment, Fairfield, Iowa

Doga Ozesmi, 16, Fairfield Community High School, Fairfield, Iowa

\$1,500 Mobile Application Award

SOFT014I **Artemis Web Security: Smart Security System for Websites with Constant Control**

Uladzislau Hadalau, 15, State Institution of Education "Secondary School №11 the town of Slutsk", Slutsk, Belarus

\$1,500 Open Source Award

SOFT0311 **BitAV: Fast Anti-Malware by Distributed Blockchain Consensus and Feedforward Scanning**

Charles Noyes, 16, Villa Park High School, Villa Park, California

\$1,500 Web Innovator Award

SOFT0151 **Increasing Encryption Strength through the Alteration of Data Readability without a Key**

Jakob Shad Williamson, 17, Bullitt Central High School, Shepherdsville, Kentucky

Google

Education lies at the very core of Google's mission to organize the world's information and make it universally accessible and useful. We believe in the power of the web to help people discover, connect, and learn. That's why we support collaborative learning in communities around the world, and why we invest heavily in education programs, initiatives, and partnerships through our products and tools.

For the project that applies computer science to further inquiry in a field other than computer science; Google CS Connect Award

ROBO0141 **Automatic Seizure Prediction and Monitoring Algorithms and Evaluation for a Single, Strategically-placed, Bipolar Electroencephalogram**

Andrew Ethridge Amini, 16, Yorktown High School, Yorktown Heights, New York

For the project that addresses a large and seemingly-impossible problem, finding an elegant solution with broad impact; Google Thinking Big Award

BMED0811 **Stop the Bleeding! Discovery of a Novel Hemostatic Agent**

Deena S. Mousa, 16, Emma Willard School, Troy, New York

IEEE Foundation

IEEE is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. IEEE awards the \$10,000 Presidents' Scholarship to recognize a deserving student for an outstanding project demonstrating an understanding of electrical engineering, electronics engineering, computer science, or other IEEE field of interest.

The IEEE Foundation Presidents' Scholarship Award of \$10,000

ROBO006I Project Maverick: An Omni-Directional Robotic Mobility System

Alex Cristian Tacescu, 17, Clovis North High School, Fresno, California

The \$10,000 USD scholarship is payable over four years of undergraduate university study. The winner also receives a certificate, engraved plaque, and a four-year IEEE student-level membership.

International Council on Systems Engineering - INCOSE

The International Council on Systems Engineering (INCOSE) is a not-for-profit membership organization founded to develop and disseminate the interdisciplinary principles and practices that enable the realization of successful systems. INCOSE will award the best interdisciplinary project that can produce technologically appropriate solutions that meet societal needs.

First Award of \$1,500

EBED028I NapX: Safety Alert Mobile Application to Detect Drowsy Drivers

Mehar Kaushik Nallamalli, 17, Capital High School, Olympia, Washington

Certificate of Honorable Mention

BMED062I Using Electromyographic Technology and Voice Control to Create a Cost-Effective Prosthetic Arm

Nilay Mehta, 17, Irvine High School, Irvine, California

EBED010I **EyeMove: Using Electrooculography to Provide Mobility for the Disabled**

Burzin Poras Balsara, 15, R. C. Clark High School, Plano, Texas

EBED019I **Autoreader: A Wearable Assistant for the Visually Impaired**

Aditya Ashish Bhople, 14, Narayana Vidyalayam, Nagpur, India

EBED036I **A Wireless Smartphone-Based System for Diagnosis of Pulmonary Illnesses**

Maya Varma, 16, Presentation High School, San Jose, California

EBED054I **H.E.R.O.: A Novel Geographical Data-based Haptic Environment Response Operator for the Visually Impaired**

Wilfred Aldo Mason, 16, Laurier Senior High School, Laval, Canada

ROBO006I **Project Maverick: An Omni-Directional Robotic Mobility System**

Alex Cristian Tacescu, 17, Clovis North High School, Fresno, California

ROBO007I **Autonomous Motion Planning for Hyper-Redundant Modular Robotic Systems using State Estimation, Obstacle Avoidance, and Intelligence Locomotion Algorithms**

Puneeth Naga Sai Krishna Meruva, 17, Homestead Senior High School, Fort Wayne, Indiana

ROBO011I **Biologically-Inspired Flying Sensor Platform for Autonomous Emergency Response**

Mihir Garimella, 15, Fox Chapel Area High School, Pittsburgh, Pennsylvania

ROBO027I **Brain-Actuated Robotics: Controlling and Programming a Humanoid Using Electroencephalography**

Ava Carmen Lakmazaheri, 17, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

K. Soumyanath Memorial Award

This award is presented by the family of Krishnamurthy Soumyanath (1957 - 2010), for the best project in Computer Engineering. K. Soumyanath was an Intel Fellow and Chief Architect, Integrated Platform Research at Intel Labs, USA, leading research and development in circuits and architectures for next-generation transceiver devices. The prize honors the memory of an energetic and adventurous individual who inspired and mentored many young people to excel in all aspects of life.

First Award of \$3,000

EBED053I **Parallel Implementation of the Convolution Operation in Quotient Polynomial Rings for the NTRU Cryptosystem**

Vikul Gupta, 16, Oregon Episcopal School, Portland, Oregon

\$1,000 will be awarded to the winner's school.

The award of \$3,000 will go the winning student/team project in Circuits; a subcategory of Embedded Systems and \$1,000 will go to their school.

K. T. Li Foundation Special Award

Established in 1956, the National Taiwan Science Education Center (NTSEC) is the only national center for science education in the country. The Center's permanent exhibition area displays rich contents related to Life Sciences, Physics, Chemistry, Mathematics and the Earth Sciences, and the NTSEC also hosts the most up-to-date science exhibitions in collaboration with other international and domestic museums.

First Award of \$1,000

ENMC037I Little Insect Project (Inspired by DARPA LittleDog Project)

Vanessa Wang, 15, American High School, Fremont, California

ROBO021I A Novel Controller for Soft Robots: An Experimental Usage of Linear Temporal Logic Mission Planning (LTLMoP) with an Optimized Elastomeric Actuator

Simone Braunstein, 17, The Dalton School, New York, New York

Winning students will receive a certificate.

King Abdul-Aziz & his Companions Foundation for Giftedness and Creativity

The Kingdom of Saudi Arabia seeks to build a sustainable future by encouraging youth to search for creative means that pave the way toward developing technologies for renewable energy, thereby maintaining a sustainable future of energy. To achieve this goal, King Abdul-Aziz & His Companions Foundation for Giftedness and Creativity (MAWHIBA) will award a Special Prize in the field of Water Technology at Intel ISEF. MAWHIBA is a national cultural foundation established to help develop a comprehensive environment of creativity in Saudi Arabia to enable gifted citizens from all areas to properly use their talents for prosperity of their country.

Award for Water Technology**BMED113I Preferential Cytotoxicity of Groundwater Levels of Arsenic on Tissue-Specific Cancer Cells**

Hannah Mackenzie Easley, 18, Cascia Hall Preparatory School, Tulsa, Oklahoma

EAEV019I Water You Drinking? Development of a Novel Filter Utilizing Nanotechnology and Porous Materials to Remove Bacteria and Heavy Metals from Polluted Water for Third World Country and Military Applications

Raashi Thakkar, 16, Texas Academy of Mathematics and Science, Denton, Texas

- EAEV030T **The All In-House Recycling and Reusing System of Purified Water for Cleaning Purposes**
- Qing Wen Zhang, 17, Keang Peng School (Secondary Section), Macao, China, Macao Special Administrative Region
- Sio In Cheong, 18, Keang Peng School (Secondary Section), Macao, China, Macao Special Administrative Region
- EAEV040I **Use of Invasive Plants for Enhancing Nutrient Removal During Water Treatment**
- Stephanie Ranae Vaughn, 15, Weber High School, Pleasant View, Utah
- EAEV058I **H₂O_h No: Pharmaceuticals Contaminate Groundwater! Sulfamethazine Adsorption Isotherms and Kinetics with Hypercrosslinked Polymer MN250 at Varying Ionic Strengths**
- Maria Elena Grimmitt, 16, Oxbridge Academy of the Palm Beaches, West Palm Beach, Florida
- EGCH014I **A Novel Research for Efficient MFCs Using Electroactive Bacteria from Mangrove Trees**
- Marya Emad Alkurdi, 18, AlTarbia AlIslamia Schools, Riyadh, Saudi Arabia
- ENEV037I **Novel Photocatalytic Pervious Composites for Removing Multiple Classes of Toxins from Water**
- Deepika Saraswathy Kurup, 17, Nashua High School South, Nashua, New Hampshire
- ENEV042I **Development of a Filtration System for Simulated Wastewater Treatment to Reduce Microplastic Pollution in a Freshwater Ecosystem**
- Payton Sherilyn Sample, 18, Sunnyside High School, Sunnyside, Washington

ENEV063I **Removal of BTEX from Storm Water using Improved HDTMA Nano-Particle Enhanced Reactive Porous Concrete**

Megan Abigail Lange, 16, Auburn High School, Auburn, Alabama

ENEV065T **Crabyotics: Novel Chitosan Water Filtration - Structure and Filtration, Year Two**

Andrea Chin-Lopez, 16, Taos High School, Taos, New Mexico

Anthony Jade Archuleta, 16, Taos High School, Taos, New Mexico

Monsanto Company

Monsanto is committed to bringing a broad range of solutions to help nourish our growing world. We produce seeds that help farmers have better harvests while using resources more efficiently. And we collaborate with farmers, researchers, nonprofits and universities to tackle some of the world's biggest challenges.

Monsanto Award for Innovation in Plant Science First Award of \$2,500

PLNT016I **Aetiology of 'Bleeding Canker' Disease of Horse Chestnut Trees**

Anna Maria McEvoy, 18, Our Lady's College, Drogheda, Ireland

Second Award of \$1,500

PLNT069I **A Rapid Field Detection of Liberibacter Bacteria using Lateral Flow Technology**

Saumya Ramadugu Keremane, 18, Martin Luther King High School, Riverside, California

Third Award of \$1,000

PLNT057T **Utilization of Crude Plant Extract of *Imperata cylindrica* as Effective Bio-Insecticide to Eradicate Brown Plant Hoppers *Nilaparvata lugens* Stal in Rice**

Fields

Vasu Chavanasupitchaya, 16, The Demonstration School of Khonkaen University (Modindang), Khonkaen, Thailand

Natchamukda Paibool, 16, The Demonstration School of Khonkaen University (Modindang), Khonkaen, Thailand

Wanicha Khotwongsa, 16, The Demonstration School of Khonkaen University (Modindang), Khonkaen, Thailand

The first and second place winners of the Monsanto Award for Innovation in Plant Science will be flown to visit and present at Monsanto in St. Louis.

Mu Alpha Theta, National High School and Two-Year College Mathematics Honor Society

Mu Alpha Theta was formed over 50 years ago to develop strong scholarship in Mathematics and to promote the understanding and enjoyment of the subject. The Mu Alpha Theta Award is given to the most challenging, thorough, and creative investigation of a problem involving mathematics accessible to high school students. Components of the investigation may include, but are not limited to, mathematical proof, mathematical modeling, statistical analysis, visualization, simulation, and approximation.

First Award of \$1,500

MATH004| **Tortoise or Hare? Improving Accuracy of Frequency, Amplitude, and Phase with Explicit Integration Rather than Fast Fourier Transforms**

Elya Courtney, 16, Carmel Hill School, Baton Rouge, Louisiana

MATH005T **Mathematical Fire Fighting: Combating Fire with Delaunay Triangulation and Longitudinal-Reversible Cellular Automata**

Vishal Rajesh, 16, Plano Senior High School, Plano, Texas

Nisha Rajesh, 15, Jasper High School, Plano, Texas

Second Award of \$1,000

MATH009| **Deterministic and Stochastic Analysis in Biomedical Engineering: Chaotic**

Dynamics vs. Brownian Motion

Muhammad Ugur oglu Abdulla, 15, West Shore Junior-Senior High School,
Melbourne, Florida

MATH022I Mathematical Modeling and Simulation of Cardiac Tissue Electrophysiology: Effect of Cardiac Deformation on Action Potential Duration

Swapnil Pande, 17, Mills E. Godwin High School, Henrico, Virginia

SOFT039T Generation via Embedding of Quasi-Optimal Networks for Application in High Performance Computing

Sahil Abbi, 16, Herricks High School, New Hyde Park, New York

Arjun Kapoor, 17, The Wheatley School, Old Westbury, New York

Winners will receive a certificate and information about joining Mu Alpha Theta, in addition to their monetary award.

National Aeronautics and Space Administration

The National Aeronautics and Space Administration (NASA) is the United States government agency responsible for the nation's civilian space program and for aeronautics and aerospace research. Founded in 1958 by President Dwight D. Eisenhower, NASA's mission is to pioneer the future in space exploration, scientific discovery and aeronautics research, answering basic questions like: What's out there in space? How do we get there? What will we find?

Top Award of \$5,000

ENMC040I A Biomimetic Non-Planar Approach to Reducing Induced Drag from Trailing Vortices

Candace Rose Brooks-Da Silva, 15, Academie Ste. Cecile International
School, Windsor, Canada

Second Award of \$2,000

BMED081I Stop the Bleeding! Discovery of a Novel Hemostatic Agent

Deena S. Mousa, 16, Emma Willard School, Troy, New York

CHEM017I Improved, Ecofriendly Solid Propellants for Space Related Applications

Saverio Nobbe, 19, Romain-Rolland-Oberschule, Berlin, Germany

PHYS023I 2015: A Photon Odyssey

Jasmine Sumpter, 14, Seacoast Collegiate High School, Santa Rosa Beach, Florida

Third Award of \$1,000**BEHA040T The Effect of Shape, Weight, and Diameter on Haptic Perception: An Active Haptic Sensing Study of the Predicted and Actual Grip Forces and their Impacts on Weight Detection Thresholds**

Sophia Nicole Korner, 16, DuPont Manual High School, Louisville, Kentucky

Diya Mathur, 16, DuPont Manual High School, Louisville, Kentucky

BMED055I Temperature-Independent, Portable, and Rapid Field Detection of Ebola via a Silk-Derived Lateral-Flow System

Olivia Anne Hallisey, 16, Greenwich High School, Greenwich, Connecticut

CHEM073T Development of a Novel Radiation Shielding Material

Seyit Alp Herdem, 19, Isiklar Air Force High School, Bursa, Turkey

Tahsin Elmas, 19, Isiklar Air Force High School, Bursa, Turkey

- ENEV045T** **Implementation of a Carbon Dioxide Refrigeration System as a Cogeneration Appliance and Alternative to Halocarbon-based Refrigeration Systems**
- Sonia Krishna Murthy, 17, Nikola Tesla STEM High School, Redmond, Washington
- Ethan Benjamin Perrin, 17, Nikola Tesla STEM High School, Redmond, Washington
- Sophia Tevosyan, 17, Nikola Tesla STEM High School, Redmond, Washington
-
- ENEV061T** **Life Supporting System on Mars**
- Shama Salam Altoobi, 16, Um AlKhair Basic Education School, Izki, Oman
- Lujain Yaqoob Alruqaishi, 16, Um AlKhair Basic Education School, Izki, Oman
- Shoud Saif Alamri, 16, Um AlKhair Basic Education School, Izki, Oman
-
- ENMC043I** **Aircraft Cabin Airflow: Curbing Disease Transmission**
- Raymond Wang, 17, St. George's School, Vancouver, Canada
-
- MATS005I** **Using Self-Cleaning Materials to Extend the Life of Stents and Catheters**
- Anshul Bhatnagar, 16, University School of Milwaukee, Mequon, Wisconsin
-
- PHYS030I** **The Periodic Effect of a Star's Change in Magnitude Due to a Planet's Transit: A Search for Habitable Planets**
- Emily Wroblewski, 16, Mathematics and Science High School at Clover Hill High School, Midlothian, Virginia
-
- PLNT008T** **Enhanced Hydrogen and Third-Generation Biofuel Production from Modified Algae**

Anoop Vemulapalli, 17, Plano West Senior High School, Plano, Texas

Wenjia Dara Li, 17, Plano West Senior High School, Plano, Texas

ROBO011I **Biologically-Inspired Flying Sensor Platform for Autonomous
Emergency Response**

Mihir Garimella, 15, Fox Chapel Area High School, Pittsburgh, Pennsylvania

Honorable Mention

EBED018I **Magnetic Positioning Sphere: A Single-Source 3D Positioning System
using Rotating Magnetic Fields**

Wei-Tung Chen, 16, Taipei Municipal Jianguo High School, Taipei City,
Taiwan

ENMC020I **A Study of Novel Spanwise Modifying Incomplete Spiroid Winglets**

Robert Joseph Hermanoff, 17, University School of Milwaukee, Mequon,
Wisconsin

MATS008I **Improved Efficiency of Seawater Steam Generation Using Carbon
Nanoparticles**

Carolyn Kay Jons, 17, Eden Prairie High School, Eden Prairie, Minnesota

PHYS048I **Analyzing the Surface of Mercury in Three-Dimensions**

Elena Jayne Mitchell, 18, Walden School of Liberal Arts, Provo, Utah

**Winning students will receive a signed certificate from NASA Administrator and Astronaut
Charles Bolden in addition to their monetary award.**

National Anti-Vivisection Society

Since 1929, the National Anti-Vivisection Society has promoted greater compassion, respect and justice for animals. NAVS educational and advocacy programs advance better, more humane science; support the development of alternatives to the use of animals in research, testing and education; and effect changes which help to end the unnecessary suffering of animals.

First Award of \$5,000

BMED123I 3D Tumor Model for Testing Anticancer Drugs

Anisha Priya Valluri, 17, Cabell Midland High School, Ona, West Virginia

Second Award of \$2,000

BMED144I Don't Be Led Ashtray: Toxicological Effects of Electronic Cigarettes on Inflammation and Lung Cell Viability with Comparison by Brand, Flavor, and Generation

Ralph Lawton, 16, Pennsylvania Leadership Charter School - University Scholars Program, West Chester, Pennsylvania

Third Award of \$1,000

BMED116I Diabetic Stem Cell Derived Cardiomyocytes in Disease Modeling and Therapeutic Discovery

Karina Schmidt, 18, Divine Savior Holy Angels, Milwaukee, Wisconsin

For more information on the specific guidelines for this award, visit the National Anti-Vivisection Society's website.

National Institute on Drug Abuse, National Institutes of Health & the Friends of NIDA

The Addiction Science Award is given by the National Institute on Drug Abuse (NIDA) to three exemplary projects on the topic of addiction science.

First Award of \$2,500

BCHM036| Naturalistic Painkillers: Design, Synthesis, and Biological Evaluation of Novel Fatty Acid Binding Protein Inhibitors

Glenn Yu, 17, Hunter College High School, New York, New York

Second Award of \$1,500

BMED144| Don't Be Led Ashtray: Toxicological Effects of Electronic Cigarettes on Inflammation and Lung Cell Viability with Comparison by Brand, Flavor, and Generation

Ralph Lawton, 16, Pennsylvania Leadership Charter School - University Scholars Program, West Chester, Pennsylvania

Third Award of \$1,000

BEHA038| Nomophobia: Effects of Smartphone Dependence and Separation on Stress, Anxiety, Memory and Cognition in Developing Adolescent Brain

Kashfia Nehrin Rahman, 14, Brookings High School, Brookings, South Dakota

Honorable Mention

BEHA013| A Novel Animal Model to Replicate Alcohol-Seeking Behavior in Humans

Ajitha Mallidi, 16, Westview High School, Portland, Oregon

CBIO010| Improving the Efficiency of Genome Variants Detection by the Parallelization of Its Computer Process

Lucas Lopes Cendes, 15, Escola Americana de Campinas, Campinas, Brazil

The Addiction Science Award is sponsored by the National Institute on Drug Abuse,

National Institutes of Health and Friends of NIDA.National Oceanic and Atmospheric Administration - NOAA

The National Oceanic and Atmospheric Administration (NOAA) is the United States government agency with a mission of science, service, and stewardship. Its mission touches the lives of every American, protecting life and property and conserving and protecting natural resources. NOAA recognizes outstanding projects in ocean, coastal, Great Lakes, weather, and climate sciences with cash awards and a first prize summer internship.

A fully paid summer internship at a NOAA research lab, plus a \$500 monetary award.

EAEV0101 **Mitigation of Hypoxic Ecosystems Using Hemolymph Analysis of *Callinectes sapidus* and *Procambarus clarkii* in Relation to Spartina Grasses, Year Two**

Natalie Marie Bush, 16, Saint Joseph's Academy, Baton Rouge, Louisiana

Award of \$500

EAEV0731 **The Effect of the Atlantic Ocean on Polar Vortex Weakening**

Jesse Tan Zhang, 17, Fairview High School, Boulder, Colorado

Alternate

ANIM0121 **Pisaster Disaster: Population Infection Dynamics of Sea-Star Wasting Disease in *Pisaster ochraceus***

Cole Alan Fuller, 16, Bend Senior High School, Bend, Oregon

EAEV0081 **Hohonukai: An Environmental Study of Hawaii's Marine Biota Using Underwater Time-Lapse Photography**

Christopher James Lindsay, 16, Iolani School, Honolulu, Hawaii

Winners also receive an All Hazards NOAA Weather Radio (NWR) and a certificate signed by the Under Secretary of Commerce for Oceans and Atmosphere. The first prize winner also receives an engraved plaque.

NSA Research Directorate

The NSA Research Directorate brings the power of science to secure the future by creating breakthroughs in science, technology, engineering, and mathematics. These discoveries help provide the tools and technologies used globally to safeguard cyberspace. The Research Directorate Science of Security Initiative promotes the academic maturation of cybersecurity principles on sound scientific roots for future scientists and researchers in order to provide trust in information systems.

First Award of \$3,000

SOFT063I A Novel Algorithm for #SAT

Elliot Gorokhovskiy, 16, Fairview High School, Boulder, Colorado

Second Award of \$1,000

BEHA009T Capacity Limits of Working Memory: The Impact of Multitasking on Cognitive Control in Digital Natives and Digital Immigrants

Alexandra Ulmer, 18, Oregon Episcopal School, Portland, Oregon

Sarayu Caulfield, 17, Oregon Episcopal School, Portland, Oregon

ROBO005I Development of an Authorship Identification Algorithm for Twitter Using Stylometric Techniques

Cherry Ying Zou, 16, Poolesville High School, Poolesville, Maryland

Office of Naval Research on behalf of the United States Navy and Marine Corps

The Naval Science Awards Program (NSAP) is a U.S. Navy and Marine Corps program that encourages our nation's students to develop and retain an interest in science and engineering. NSAP recognizes the accomplishments of eligible students at regional and state science and engineering fairs and the Intel International Science and Engineering Fair

(ISEF) in producing and presenting quality science and engineering projects.

The Chief of Naval Research Scholarship Award of 10,000

ENMC029I Robo F-Pads

Alberto Garcia, 18, Shallowater High School, Shallowater, Texas

Scholarships are payable at \$2,500 a year for four years. Recipient will also receive a certificate signed by the Chief of Naval Research and a U.S. Navy medal.

Oracle Academy

Oracle Academy, is the flagship program under Oracle's corporate social responsibility education pillar. Its mission is to advance computer science education and make it accessible to students globally to drive knowledge, innovation, skills development, and diversity in technology fields. In 2013, Oracle Academy supported more than 2.5 million secondary and post-secondary students globally, providing software, curriculum, professional development, and other resources with an in-kind grant value of more than US\$2.7 billion.

Award of \$5,000 for outstanding project in the systems software category.

SOFT007I Narrativa Soft: Software to Work on Narrative Production

Bibiana da Costa Davila, 18, Fundacao Escola Tecnica Liberato Salzano Vieira da Cunha, Novo Hamburgo, Brazil

SOFT008I Developing Mobile Algorithms to Detect Seizures and Falls

Amir Helmy, 14, Eastside High School, Gainesville, Florida

SOFT016I Modal Logic as a Programming Language

Nadine Theisen, 17, Max-Planck-Gymnasium Saarlouis, Saarlouis, Germany

SOFT018I SCC: Reversible Multi-Translation of High-Level Programming Languages and a Platform for Performance-Controlled Execution in Multi-Agent Systems

Danila Alexandrovich Baigushev, 17, Lyceum "Vtoraya Shkola", Moscow, Russian Federation

SOFT032I The Phoney Lift: Using Accelerometers to Identify People

Yashaswini Makaram, 17, Massachusetts Academy of Math and Science, Worcester, Massachusetts

SOFT035I Improving Crypto: A Novel Smartphone Based Entropy Generator

Benjamin Friesen, 16, Grimbsy Secondary School, Grimsby, Canada

SOFT039T Generation via Embedding of Quasi-Optimal Networks for Application in High Performance Computing

Sahil Abbi, 16, Herricks High School, New Hyde Park, New York

Arjun Kapoor, 17, The Wheatley School, Old Westbury, New York

SOFT055I Reverse PubMed Search Program

Mengyuan Sun, 17, Centennial High School, Ellicott City, Maryland

SOFT062I Cyber Automated Report Linker: A Network Approach to Minimizing Expansion of Catastrophic Cyber Infiltrations

Stephen Parish, 19, Home School, Colorado Springs, Colorado

As a proud sponsor of Intel ISEF, Oracle Academy will present nine projects a Special Organizations Award—for outstanding projects in the systems software category.

[Patent and Trademark Office Society](#)

The PTOS is a membership-based organization for Patent and Trademark professionals and other interested individuals. From its inception in 1917, the Society has been dedicated to the improvement and appreciation of the United States Patent and Trademark Systems through promoting the systems' growth and well-being, as well as promoting the social and intellectual welfare of the Society members.

First Award of \$500

BCHM018I Treating Alzheimer's Disease: New Proposal for Grayanotoxin Ligand Binding to the Carbonic Anhydrase I Receptor

Nandini Tondamantham Naidu, 14, Valley Catholic High School, Beaverton, Oregon

CHEM031I Synthesizing and Utilizing Difluoromethyl- & Trifluoromethyl- Artemisinins to Interrupt the Life Cycle of Malaria Parasites, Year III

Shreya Sundaresh Ramayya, 17, Palos Verdes Peninsula High School, Rolling Hills Estates, California

EAEV014I Sky Cleaner: Atmosphere's Purification from Greenhouse Gases

Imen Nouri, 18, Secondary Pilot High School of Gabes Tunisia, Gabes, Tunisia

EBED020I TALK - An AAC Device: Converting Breath into Speech for the Disabled

Arsh Shah Dilbagi, 17, DAV Public School, Panipat, India

EBED054I H.E.R.O.: A Novel Geographical Data-based Haptic Environment Response Operator for the Visually Impaired

Wilfred Aldo Mason, 16, Laurier Senior High School, Laval, Canada

EGPH046I The e-Drink: Capturing Electricity from Beverages

Ann Makosinski, 17, Saint Michaels University School, Victoria, Canada

ENEV010I **A Computer Controlled Low Cost Indoor Airborne Formaldehyde Removing System by Electrolysis of Common Salt Water**

Taige Wang, 17, No.2 High School of East China Normal University, Shanghai, China

Top Award of \$1,000, and an American flag and a framed copy of the first patent granted in the USA

BMED030I **Brace for It: The Effect of Q-angles on ACL Stress with Prototype and Development of Arduino Software to Create Smart Brace to Protect at Risk Patients**

Megan Guinn O'Briant, 17, Yorktown High School, Arlington, Virginia

Psi Chi, The International Honor Society in Psychology.

Psi Chi was founded in 1929, for the purposes of encouraging, stimulating, and maintaining excellence in scholarship and advancing the science of psychology. Membership is open to graduate and undergraduate students who are making the study of psychology one of their major interests, and who meet the minimum qualifications.

First Award of \$2,500

BEHA061T **Jamais Vu: Induced Memory Loss Through Semantic Satiation**

Andrew David Loftus, 16, Johns Creek High School, Johns Creek, Georgia

Nadav Ribak, 17, Johns Creek High School, Johns Creek, Georgia

Second Award of \$1,500

BEHA046I **The Economics of Decision-Making: Investigating the Effect of Social Pressure on Incentive Selection**

Henry Li, 18, West Linn High School, West Linn, Oregon

Third Award of \$1,000

BEHA0301 **Development of GAD2 Expressing Cells in the Zebra Finch HVC during Critical Periods of Song Learning**

Daniel Danhang Tang, 18, West Linn High School, West Linn, Oregon

All winners will receive a Psi Chi Certificate of Recognition.

Ricoh Americas Corporation

Ricoh is a global technology company specializing in office imaging equipment, production print solutions, document management systems and IT services. Ricoh has a long-standing environmental mission and commitment to sustainability, bringing corporate, social and environmental responsibilities into balance. Ricoh has been creating green technology and environment management systems that promote sustainability for more than three decades. Ricoh is consistently ranked high among the world's corporations for successfully balancing profit with environmental responsibility.

Ricoh Sustainable Development Award of \$12,500

EGPH0231 **Novel Low Grade Waste Heat Recovery System with Simultaneous Electricity Generation, Carbon Sequestration and Urea Production**

Ethan Novek, 16, Greenwich High School, Greenwich, Connecticut

ENEV0551 **Production of Energy and Fertilizer from Ordinary Waste Materials through Micro-Scale Anaerobic Digestion**

Robert Z. Halfon, 16, American Heritage School of Boca Delray, Delray Beach, Florida

Winning students will receive framed Ricoh Sustainable Development Award certificates and a scholarship of totaling \$25,000.

Sigma Xi, The Scientific Research Society

Founded in 1886, Sigma Xi is the international honor society of research scientists and engineers, with a distinguished history of service to science and society. This multi-disciplinary society includes members who were elected based on their research achievements or potential, and historically, more than 200 members have won the Nobel Prize. The Society is pleased to offer awards for the best demonstration of interdisciplinary research.

First Physical Science Award of \$2,000

ANIM062T **A New Method of Silk Sheath Production Developed from Observation of Spinning Behavior of Silkworms**

Thananon Hiranwanichchakorn, 16, Damrongratsongkroh, Muang, Thailand

Nattapong Chueasiritaworn, 15, Damrongratsongkroh, Muang, Thailand

Sutthiluk Rakdee, 15, Damrongratsongkroh, Muang, Thailand

First Life Science Award of \$2,000

MATS046T **Synthesizing an Artificial Biological Leaf Capable of Evolving Oxygen via Photosynthesis**

Wyatt Martin Pontius, 17, Loudoun Academy of Science, Sterling, Virginia

Liam Alexander Wallace, 17, Loudoun Academy of Science, Sterling, Virginia

Second Physical Science Award of \$1,000

PLNT008T **Enhanced Hydrogen and Third-Generation Biofuel Production from Modified Algae**

Anoop Vemulapalli, 17, Plano West Senior High School, Plano, Texas

Wenjia Dara Li, 17, Plano West Senior High School, Plano, Texas

Second Life Science Award of \$1,000

ENEV067T Synthesis of Electrospun Nanosilver-Functionalized Nylon 6 Nanofibres for Membrane Water Purification

Yi Zhao Tan, 17, Hwa Chong Institution, Singapore, Singapore

Zheng Theng Lim, 17, Hwa Chong Institution, Singapore, Singapore

Benjamin Kye Jyn Tan, 16, Hwa Chong Institution, Singapore, Singapore

Society for Experimental Mechanics, Inc.

The Society for Experimental Mechanics is composed of international members from academia, government, and industry who are committed to interdisciplinary application, research and development, education, and active promotion of experimental methods to: (a) increase the knowledge of physical phenomena; (b) further the understanding of the behavior of materials, structures and systems; and (c) provide the necessary physical basis and verification for analytical and computational approaches to the development of engineering solutions.

First Award of \$2,500**ENMC029I Robo F-Pads**

Alberto Garcia, 18, Shallowater High School, Shallowater, Texas

Second Award of \$1,500**ENMC039I The FIRST Frame: Personalized Front Impact Reduction System for Bicycles**

Duncan Bayard Stothers, 17, St. George's School, Vancouver, Canada

Third Award of \$1,000**BMED086I Investigating External Interventions Applied to Football Headgear to Decrease Mean Peak Acceleration as Measured by a Single Axis Accelerometer Array**

Clara Elizabeth Wagner, 16, Saginaw Arts and Sciences Academy, Saginaw, Michigan

Society of Experimental Test Pilots

Founded in 1955, the Society of Experimental Test Pilots is an international organization of flight test pilots and astronauts promoting air safety and education in the design and flight test of aerospace vehicles. SETP's membership extends across 30 countries worldwide, comprised of more than 2,400 active and retired test pilots representing all types of aerospace vehicles, military and civilian.

First Award of \$1,000

ENMC043I **Aircraft Cabin Airflow: Curbing Disease Transmission**

Raymond Wang, 17, St. George's School, Vancouver, Canada

Second Award of \$500

ENMC040I **A Biomimetic Non-Planar Approach to Reducing Induced Drag from Trailing Vortices**

Candace Rose Brooks-Da Silva, 15, Academie Ste. Cecile International School, Windsor, Canada

Third Award of \$300

ENMC015T **Increasing Wing Lift for Safer Landing**

Viktar Beliautsou, 17, Minsk State Regional Lyceum, Minsk, Belarus

Mikita Syrovatnikau, 17, Minsk State Regional Liceum, Minsk, Belarus

Aleh Karabko, 17, Gymnasia №40, Minsk, Belarus

Certificate of Honorable Mention

ENMC020I **A Study of Novel Spanwise Modifying Incomplete Spiroid Winglets**

Robert Joseph Hermanoff, 17, University School of Milwaukee, Mequon, Wisconsin

ENMC046T **Research on Next-generation High-efficiency Aircraft using the Aerodynamic Characteristics of the Korean Traditional Kite(Bangpaeyeon)**

Jun Su Jang, 18, Incheon Jinsan Science High School, Incheon, South Korea

Bo Mi Lee, 18, Gist, Gwangju, South Korea

Yang Se Young, 17, Yonsei University, Seoul, South Korea

ENMC052I **Airplane Wing Gust Suppression by Active Flow Control**

Scott Alexander Bollt, 17, Potsdam High School, Potsdam, New York

All honorees receive a certificate of recognition, book and guest invitation to the annual Symposium.

Society of Exploration Geophysicists

The Society of Exploration Geophysicists is a not-for-profit organization that promotes the science of applied geophysics and the education of geophysicists. SEG, founded in 1930, fosters the expert and ethical practice of geophysics in the exploration and development of natural resources, in characterizing the near surface, and in mitigating earth hazards. The Society, which has more than 33,000 members in 138 countries, fulfills its mission through its publications, conferences, forums, Web sites, and educational opportunities.

Distinguished Achievement Award of \$3,000, to be divided equally between the team members and a trip to the SEG International Exposition and Annual Meeting.

SOFT056T **Calculating Horizons with Perspective Projection**

Ben L. Schade, 16, Maine School of Science and Mathematics, Limestone, Maine

Justin Hunter Hamilton, 16, Maine School of Science and Mathematics, Limestone, Maine

Award of Merit of \$1,000

PHYS003I An Easy Way to Measure a Sidereal Day

Iselle Van Den Heever, 16, Jim Fouche High School, Bloemfontein, South Africa

Award of Merit of \$500

EAEV073I The Effect of the Atlantic Ocean on Polar Vortex Weakening

Jesse Tan Zhang, 17, Fairview High School, Boulder, Colorado

EGCH043I Modeling Gas Flow in Hydraulically Fractured Shale

Jovan Y. Zhang, 17, Los Alamos High School, Los Alamos, New Mexico

EGPH015I Riding the Wave: Energy in Motion II

Matthew Caffet, 18, Academy of Science and Technology, The Woodlands, Texas

PHYS039I Coupled Hydrodynamic Ocean and Atmospheric Simulation of El Niño

Coleman J. Kendrick, 17, Los Alamos High School, Los Alamos, New Mexico

Certificate of Honorable Mention

ENEV048I Can the Design of Natural Aquifers Be Used to Filter Run-off on the Roads in Communities and Wetlands?

Morgan Elizabeth Kane, 15, Mt. Hope High School, Bristol, Rhode Island

[Spectroscopy Society of Pittsburgh](#)

The Spectroscopy Society of Pittsburgh (SSP), along with our sister society, the Society for Analytical Chemists of Pittsburgh (SACP), is a non-profit organization dedicated to promoting science education in the Western Pennsylvania region. Using proceeds from

Pittcon, the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, we support member education programs, teacher and student awards, a wide variety of science educational programs, and grant programs for high schools, colleges, and beginning university professors.

First Place Award of \$1,500

EBED042I Gas Analysis Using Ultrasonic

Niklas Fauth, 17, Friedrich-Schiller-Gymnasium, Marbach am Neckar, Germany

Second Place Award of \$1,000

BCHM043T Two-Photon Spectroscopy for the Early Diagnosis of ALS: Folding and Aggregation of SOD1

Natasha Goenawan, 16, Kalamazoo Area Math and Science Center, Kalamazoo Township, Michigan

Ziyan Mo, 16, Kalamazoo Area Math and Science Center, Kalamazoo Township, Michigan

MATS058T Luminol and Silver Nanoparticles: A Brilliant Pair

Chiara Figazzolo, 18, Istituto Superiore "Ascanio Sobrero", Casale Monferrato, Italy

Filippo Cotta Ramusino, 18, Istituto Superiore "Ascanio Sobrero", Casale Monferrato, Italy

Third Place Award of \$750

BCHM041I Measuring Membranes: Quantifying Cortisone Interactions through X-Ray Diffraction

Adree Khondker, 17, Westdale Secondary School, Hamilton, Canada

BMED136I Can Magnetic Resonance Imaging (MRI) Differentiate between Gram-positive and Gram-negative Bacteria Species in Human Blood?

Tiffany Liu, 15, Villages Charter High School, The Villages, Florida

Winning students will receive a certificate and one-time cash award from the Spectroscopy Society of Pittsburgh.

SPIE, the international society for optics and photonics

SPIE, the international society for optics and photonics, was founded in 1955 to advance light-based technologies. Serving more than 235,000 constituents from approximately 155 countries, the Society advances emerging technologies through interdisciplinary information exchange, continuing education, publications, patent precedent, and career and professional growth. Annually SPIE provides more than \$3.2 million in support of education and outreach programs.

First Award of \$2,000

PHYS040I **Three Dimensional Object Tracking Using a Rapid Scanning Double Droplet System Microscope**

John L. Dean, 17, Scotia Glenville High School, Scotia, New York

Second Award of \$1,500

BCHM043T **Two-Photon Spectroscopy for the Early Diagnosis of ALS: Folding and Aggregation of SOD1**

Natasha Goenawan, 16, Kalamazoo Area Math and Science Center, Kalamazoo Township, Michigan

Ziyan Mo, 16, Kalamazoo Area Math and Science Center, Kalamazoo Township, Michigan

Third Award of \$1,000

BMED020I **TBI: Light More than Meets the Eye**

Savannah Floyd, 15, Ruston High School, Ruston, Louisiana

Fourth Award of \$500**SOFT004I Computer Vision: Mapping and Orientation in 3-D Space**

Daniel Zvara, 18, Gymnazium Velka Okruzna, Zilina, Slovakia

Thirty Meter Telescope

China, India, Japan, the U.S. & Canada comprise a team of scientists, engineers and project specialists currently planning and designing the most advanced and powerful optical telescope on Earth. The Thirty Meter Telescope (TMT) will enable astronomers to study objects in our own solar system, stars throughout our Milky Way, and forming galaxies at the very edge of the observable Universe, near the beginning of time. The winner of the TMT prize will travel to Hawaii to participate in the Pacific Astronomy and Engineering Summit, visit the telescopes of Mauna Kea and tour the TMT building site.

All-expense paid trip to participate in the Pacific Astronomy and Engineering Summit (PAES) and visit the telescope.

ROBO003I Wall-climbing Reconnaissance Robot Based on WiFi Technology

Kehan Yang, 17, Experimental High School Attached to Beijing Normal University, Beijing, China

U.S. Agency for International Development

The U.S. Agency for International Development (USAID) is the federal government agency responsible for administering foreign aid. USAID works to promote economic and social development in more than 100 countries around the world. The U.S. Global Development Lab works to accelerate the transformation of the development enterprise by opening development to people everywhere with good ideas, promoting new and deepening existing partnerships, bringing data and evidence to bear, and harnessing scientific and technological advances.

USAID Global Development Innovation award of \$10,000**BCHM046I Effectiveness of Influenza VLP and SAR9 Vaccination**

Koushal Rao, 17, Lincoln Park Academy, Ft. Pierce, Florida

BMED082I **Low-Cost Disposable Device for Point-of-Care Nucleic Acid Testing of HIV: Sample-to-Answer in 60 Minutes for Less than \$5.00**

Nicole Sabina Ticea, 16, York House School, Vancouver, Canada

EAEV001T **SOS Drought: Seeding Life through Low Cost Catchment and Desalination Systems in Semi Arid Region**

Maria Vanessa Oliveira Teodosio, 17, Escola Estadual De Educacao Profissional Julio Franca, Bela Cruz, Brazil

Fatima Natanna de Miranda, 17, Escola Estadual De Educacao Profissional Julio Franca, Bela Cruz, Brazil

EGPH042T **My School Self-Powered**

Raneem Hasan Alqwasmi, 15, Alawda Basic School for Girls, Bethlehem, Palestine

Amal Hashim Ali, 15, Alawda Basic School for Girls, Bethlehem, Palestine

Honorable Mention

EBED036I **A Wireless Smartphone-Based System for Diagnosis of Pulmonary Illnesses**

Maya Varma, 16, Presentation High School, San Jose, California

EGCH029I **Natural Additive-Enhanced Development of Novel All-Solid-State Batteries for Sustainable and Scalable Energy Storage**

Kathy Liu, 16, West High School, Salt Lake City, Utah

EGPH017I **Utilizing a Piezoelectric Crystal Tree to Harvest Electrical Energy from Rain Water**

Kelly Devens, 17, Roanoke Valley Governor's School for Science and Technology,

Roanoke, Virginia

EGPH021I Multi Purpose Smart Solar Device

Habab Idress, 18, Dewaan Dayaraam Jethmal Sindh Govt Science College, Karachi, Pakistan

We are proud to offer four development-focused awards at the Intel ISEF.

United States Environmental Protection Agency

From nanomaterials a billionth of a meter in size to global climate dynamics, EPA scientists and engineers are investigating every scale of our environment and the links between environment and human health. EPA conducts research that addresses the highest priority science needs of the nation. The work performed by EPA scientists, engineers and their research partners improves the quality of the air we breathe, the water that sustains us, and the land upon which we live.

The Patrick Hurd Sustainability Award winner will travel to EPA's National Sustainable Design Expo in Washington, DC

EAEV078I Low-cost Heteronanostructure Semiconductor Uses Visible Light Energy to Efficiently Degrade Toxins Threatening Aquatic Life

Joshua Zhou, 16, East Chapel Hill High School, Chapel Hill, North Carolina

Alternate trip winner

EAEV009T March of the Molokai Mangrove: The Socio-Economic and Ecological Impacts of Introduced Red Mangrove (*Rhizophora mangle*) on Molokai, Hawaiian Islands

Sarah 'Alohilani Jenkins, 17, Molokai High School, Ho'olehua, Hawaii

Lily Nalulani Jenkins, 15, Molokai High School, Ho'olehua, Hawaii

United States Steel Corporation

United States Steel Corporation, headquartered in Pittsburgh, Pa., is a leading integrated steel producer with major production operations in the United States and Central Europe and an annual raw steelmaking capability of 24.4 million net tons. The company manufactures a wide range of value-added steel sheet and tubular products for the automotive, appliance, container, industrial machinery, construction, and oil and gas industries.

First Award of \$2500

ENEV020I **Synthesis of a Novel Metal Organic Framework with a PCU Topology for CO₂ Separation in CCS**

Steve Daikai Zheng, 18, Jericho Senior High School, Jericho, New York

Second Award of \$1500

MATS046T **Synthesizing an Artificial Biological Leaf Capable of Evolving Oxygen via Photosynthesis**

Wyatt Martin Pontius, 17, Loudoun Academy of Science, Sterling, Virginia

Liam Alexander Wallace, 17, Loudoun Academy of Science, Sterling, Virginia

Third Award of \$ 1000

EGCH040I **Geometric Manipulation of Cuprous Oxide Nanocrystal Surface Morphology Enhances Photoelectrochemical Properties and Enables Fabrication of Low-Cost, High Efficiency Photovoltaic Cells**

Elizabeth P. Donoway, 17, Pine Crest School, Fort Lauderdale, Florida

United Technologies Corporation

United Technologies Corporation is a diversified company that provides a broad range of high-technology products and services to the global aerospace and commercial building systems industries. We are pleased to offer eight awards of \$3,000 in UTC common stock

for projects showing excellence in science and engineering.

Each winning project will receive \$3,000 in shares of UTC common stock.

CHEM017I Improved, Ecofriendly Solid Propellants for Space Related Applications

Saverio Nobbe, 19, Romain-Rolland-Oberschule, Berlin, Germany

EAEV017I Understanding Heat Transfer Mechanisms in Forest Fire Spread: Fuel Particle Heat Transfer

Kyra Leigh Seevers, 16, Paul Laurence Dunbar High School, Lexington, Kentucky

EGPH044I Application of Tetrahedrite and Magnesium Silicide in a Novel Thermoelectric Unicouple to Generate Electricity from Industrial Waste Heat

Sriharshita Vani Musunuri, 15, Henry M. Jackson High School, Mill Creek, Washington

EGPH045I Novel Automated Designs and Rapid Multivariate Optimization of Next-Generation Multijunction Quantum Dot Solar Cells Using Monte Carlo Modeling

Valerie S. Ding, 18, Catlin Gabel School, Portland, Oregon

ENMC043I Aircraft Cabin Airflow: Curbing Disease Transmission

Raymond Wang, 17, St. George's School, Vancouver, Canada

MATH032I Approximating the Maximum k-Colorable Subgraph Problem on Dotted Interval Graphs

Alexander Lin, 17, Millburn High School, Millburn, New Jersey

ROBO003I Wall-climbing Reconnaissance Robot Based on WiFi Technology

Kehan Yang, 17, Experimental High School Attached to Beijing Normal University, Beijing, China

ROBO026I Object Recognition Based UAV Control

Francisca Vasconcelos, 17, Torrey Pines High School, San Diego, California

Winners also receive a plaque, backpack, and UTC Annual Report. Stock to be shared by team members.

University of the Sciences in Philadelphia

University of the Sciences awards five \$15,000 scholarships to students whose research and academic interests align with the USciences mission. Scholarships become effective upon enrollment in the incoming class of fall 2016. At USciences, we are building on a life sciences legacy started almost two centuries ago as Philadelphia College of Pharmacy. From treating, researching, and studying diseases and cures on a molecular level to the medicines that improve lives worldwide, USciences is about moving life forward.

Tuition Scholarship of \$15,000 per year for four years.

BCHM024I **Squashing the Superbug: Discovery of Irreversible SrtA Inhibitors as Potential Antibacterial Drugs using a Novel Computational Drug Design Workflow**

David M. Lu, 17, Mills E. Godwin High School, Henrico, Virginia

BMED030I **Brace for It: The Effect of Q-angles on ACL Stress with Prototype and Development of Arduino Software to Create Smart Brace to Protect at Risk Patients**

Megan Guinn O'Briant, 17, Yorktown High School, Arlington, Virginia

BMED031I **The Effects of Taurine on Memory Retention in *D. dorotocephala***

Mariam Eman Dogar, 16, Massachusetts Academy of Math and Science, Worcester, Massachusetts

BMED054I **Chocolate's Theobromine, and Not Caffeine, Significantly Reduces Sleep in *Drosophila***

Reid W. Radulovacki, 16, Greenwich High School, Greenwich, Connecticut

BMED067I **Tumor Cell Streaming towards Blood Vessels in the Metastatic Cascade Is Mediated by Endothelial Cell-Secreted Hepatocyte Growth Factor**

Alice Xue, 16, Pelham Memorial High School, Pelham, New York

Scholarships are allocated toward tuition only and become effective upon enrollment in any undergraduate program offered at USciences. Each scholarship is renewable for up to four years provided the recipient is enrolled full time and is in good academic standing with the University.

West Virginia University

West Virginia University will be awarding 10 Academic Excellence or Presidential Scholarships (depending on residency) to students whose research and academic aptitude align with WVU's institutional goals and research interests. Classified as a Research University (High Research Activity) by the Carnegie Foundation for the Advancement of Teaching, West Virginia University offers 184 undergraduate and graduate degree programs in 14 academic colleges.

Renewable Tuition Scholarship Awards

ANIM063I **Studying the Resilience of Ants through the Effects of Food in an Ant Colony's Environment**

Robert Donald Phillips, 17, Musselman High School, Inwood, West Virginia

BMED021I **The Effect of the Citrus Flavonoid Naringin on Raji Burkitt Lymphoma Cells**

Kendall Reed Clark, 17, South Sumter High School, Bushnell, Florida

BMED123I 3D Tumor Model for Testing Anticancer Drugs

Anisha Priya Valluri, 17, Cabell Midland High School, Ona, West Virginia

BMED144I Don't Be Led Ashtray: Toxicological Effects of Electronic Cigarettes on Inflammation and Lung Cell Viability with Comparison by Brand, Flavor, and Generation

Ralph Lawton, 16, Pennsylvania Leadership Charter School - University Scholars Program, West Chester, Pennsylvania

CHEM020I Cleaning the Scene: Using Forensics to Test for the Presence of Blood

Brynn Myers, 16, Oak Ridge High School, Oak Ridge, Missouri

ENMC036I A Wing of the Future, Part II

Trevor Jordan, 17, Animas High School, Durango, Colorado

ENMC038I The Feasibility of Using an Electric Arc Flash as a Propellant

Nathanael Joshua Freeman, 17, Zane Trace High School, Chillicothe, Ohio

ROBO009I Traffic Camera Distracted Driver Detection (TCD³): Contextually Aware Heuristic Blob Analysis of Traffic Camera Footage to Identify Anomalous Driving

Vidur Tenali Prasad, 16, Dayton Regional STEM School, Kettering, Ohio

These awards are dependent on the student meeting the requirements of 1.) High school GPA (weighted or unweighted) of at least 3.8 and 2.) ACT score of 30 or SAT score of 1340 or higher.

Wolfram Research, Inc.

Founded by Stephen Wolfram in 1987, Wolfram Research is one of the world's most respected software companies—as well as a powerhouse of scientific and technical innovation. As pioneers in computational science and the computational paradigm, we have pursued a long-term vision to develop the science, technology, and tools to make computation an ever-more-potent force in today's and tomorrow's world.

Mathematica software for all Intel ISEF Finalists and Observers

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