Intel ISEF 2014 Special Awards

May 15, 2014, Los Angeles, California – Society for Science & the Public, in partnership with the Intel Foundation, announced the Special Awards of the Intel ISEF 2014. Student winners are ninth through twelfth graders who earned the right to compete at the Intel ISEF 2014 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 its practical applications.

First Award of $1,500

ME305 **The Physiological Effects of Noise Pollution on the Cardiovascular System of D. melanogaster**
Marcelo Ferrari, 18, Bancroft School, Worcester, Massachusetts
Akanksh Chaudhary, 17, Bancroft School, Worcester, Massachusetts

Second Award of $500

EN029 **Ultrasound-responsive Nanoparticles for Neurotherapeutic Delivery**
Shelby Chi Yuan, 17, University High School, Tucson, Arizona

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

MI022 **Development of in vitro Multispecies Biofilms with Hydroxyapatite and Artificial Saliva**
Terry Gwen Ni, 16, Boston Latin School, Boston, Massachusetts

Second Award of $1,000

ME102 **The Antimicrobial Efficacy of Nitric Oxide based on Release Rate from Mesoporous Silica Nanoparticles on A. actinomycetemcomitans and S. mutans**
Shraddha Rathod, 18, North Carolina School of Science and Mathematics, Durham, North Carolina

Third Award of $500

ME029 **Killed by Sweetness**
Karishma Sunil Patel, 15, Grants High School, Grants, New Mexico

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.

The Future of Transportation, First Award of $2,500

EE061 **Electromagnetic Tire Propulsion System**
Alexander William Beall, 17, Brunswick High School, Brunswick, Maryland

The Future of Transportation, Second Award of $1,500

PH315 **Flexible Shape Changing (Morphing) Wing**
Judah Khary Brooks, 17, From the Heart Christian School, Suitland, District of Columbia
Moises Diaz, 17, From the Heart Christian School, Suitland, District of Columbia

The Future of Transportation, Third Award $1,000

PH305 Holes Can Lift: A Continuing Study of the Separation Effects of Airfoil Slots
Sarah Nicole Hancock, 16, Clear Horizons Early College High School, Houston, Texas
Kate Rutherford, 17, Clear Horizons Early College High School, Houston, Texas

Assembly and Joining in the 21st Century, First Award $2,500

EE031 **Breaking Point**
Danika Louw, 14, Holy Spirit Catholic High School, Tuscaloosa, Alabama

Assembly and Joining in the 21st Century, Second Award $1,500

EE081 **Unlock Anywhere**
Ethan James Anderson, 16, Fort Wayne Area Home School, Fort Wayne, Indiana

Assembly and Joining in the 21st Century, Third Award of $1,000

EN051 **Deposition of Carbon on Copper Wire: A New Process for the Fabrication of Carbon Microtubes**
Burhan Azeem, 17, Staten Island Technical High School, Staten Island, New York

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

ME315 **Rational Discovery and Optimization of Synergistic Chemotherapy Combinations: A Novel Framework Integrating Gene Perturbation Analysis and Machine Learning Algorithms**
Steven Michael Wang, 17, The Harker School, San Jose, California
Andrew Cheng Jin, 17, The Harker School, San Jose, California

Second Award of $1,000

BI013 **Novel Inorganic Metallacarborane Inhibitors of HIV-1 Protease**

Robin Krystufek, 18, Gymnazium Na Vitezne Plani, Prague 4, Czech Republic

Third Award of $500

CS065 **Search Engine to Map FDA Approved Drugs to Diseases Based on Microarray Data Mined from GEO**
Axel Stephan Feldmann, 17, Hunter College High School, New York, New York

Fourth Award of $250

CB043 **A Novel Approach for Metastatic Breast Cancer Therapy: Pharmacological Inhibition of EZH2 Histone Methyl Transferase Activity Suppresses Cancer Stem Cells and Induces Epithelial Phenotype**
Sara Sakowitz, 18, The Brearley School, New York, New York

ME073 **Investigating the Opposing Roles of Oncoprotein gC1qR and Tumor Suppressive cC1qR as Mechanisms for Inhibiting Cancer Pathogenesis**
Emily M. Pang, 17, Dougherty Valley High School, San Ramon, California

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 Association of Physics Teachers and the American Physical Society

AAPT is the premier global professional society established to advance the greater good through physics education. With the support of our members worldwide, AAPT is an action oriented organization designed to develop, improve, and promote best practices for physics education as part of the global need for qualified Science, Technology, Engineering, and Mathematics teachers who will inspire tomorrow's leaders and decision makers. For additional information their companion sponsor, the American Physical Society, visit www.aps.org.

First Award of $1,200

PH041 **Spectral Smartphone: Rapid Prototyping Mobile Platform Diffraction Spectrophotometry**
Allen Jiang, 16, duPont Manual High School, Louisville, Kentucky

Second Award of $800

PH013 **Nova Delphini 2013: A Backyard Analysis of a Classical Nova**
Piper Michelle Reid, 17, Dripping Springs High School, Dripping Springs, Texas

Third Award of $500

PH305 **Holes Can Lift: A Continuing Study of the Separation Effects of Airfoil Slots**
Sarah Nicole Hancock, 16, Clear Horizons Early College High School, Houston, Texas
Kate Rutherford, 17, Clear Horizons Early College High School, Houston, Texas

Certificate of Honorable Mention

PH007 **Rocks of the Rainbow: Asteroid Classification Using SDSS Filters**
Stephanie Hiromi Spear, 16, Henry J. Kaiser High School, Honolulu, Hawaii

PH019 **Novel Automated Next-Generation Multijunction Quantum Dot Solar Panel Designs Using Monte Carlo-Based Modeling**
Valerie S. Ding, 17, Catlin Gabel School, Portland, Oregon

PH053 **Piezoforce Imaging of Confined Oxide Nanowires**
Akash Levy, 17, Taylor Allderdice High School, Pittsburgh, Pennsylvania

Top award winners receive a one-year AAPT and APS student membership, a certificate from both AAPT and APS, as well as one-year electronic subscriptions to AAPT's journals, "The Physics Teacher," "The American Journal of Physics," and other APS journals. Each sponsoring teacher of a student who receives an AAPT and APS award also will receive a certificate.

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

ET025 **Synthesis of Benzodifuran Derivatives for Solar Cells**
Valerie Youngmi Sarge, 17, Paul Laurence Dunbar High School, Lexington, Kentucky

Second Award of $3,000

BI046 **Development of a Therapeutic Drug for Alzheimer's Disease: A Chemical Approach to Cease Amyloidosis**
Yarim Lee, 17, Townsend Harris High School, Flushing, New York

Third Award of $2,000

CH020 **Building a Library of Difluoro- and Trifluoro- Artemisinins, Year Two**
Shreya Sundaresh Ramayya, 16, Palos Verdes Peninsula, Rolling Hills Estates, California

Fourth Award of $1,000

MA032 **A Monte Carlo Protein Folding Simulation using Energy Optimization with Novel Applications to Alzheimer's Disease Research**
Niranjan Balachandar, 17, Texas Academy of Mathematics and Science, Denton, Texas

Certificate of Honorable Mention

CB024 **In Search of Genomic Dark Matter: A Novel Method for the Global Identification of Active Regulatory Elements**
Carlo Bocconcelli, 17, Falmouth Academy, Falmouth, Massachusetts

CH027 **Carbonized Pineapple Peel (CPP) Waste as Low Cost Adsorbent for Acid and Reactive Dyes Removal**
Meor Zulhilmi Syahir Ahmad Shohailee, 17, Tun Syed Sheh Shahabudin Science Secondary Boarding School, Bukit Mertajam, Malaysia

EN022 **The Synthesis and Characterization of EGCG-PLGA Conjugates and Mixtures: A Novel Biomaterial for Tissue Engineering**
Anubhuti Mathur, 16, Glastonbury High School, Glastonbury, Connecticut

EN055 **Gold Nanoparticles: Efficient Synthesis of Catalytically Active Nanoparticles Using a One-Pot Method**
Justin Cheung, 17, Commack High School, Commack, New York

EN066 **Magnetic Field Modulation for Assembly and Manipulation of Responsive Nanoscale Optical Systems**
Michael Janner, 18, Redlands East Valley High School, Redlands, California

ET021 **Development of Highly Efficient and Stable Dye-sensitized Solar Cells Using Natural Hydrangea macrophylla Dyes**
Mie Yamanaka, 17, Miyagi Prefectural Sendai Daini Senior High School, Sendai-City, Japan

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

American Committee for the Weizmann Institute of Science

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

CB022 **Control of Induced Pluripotent Stem Cell Aging by Modulation of Mitochondrial DNA Deletions**
Joshua Abraham Meier, 18, Academy for the Advancement of Science and Technology, Hackensack, New Jersey

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

EA006 **Tidal Rhythms Recorded in Precambrian Banded Iron Formations**
Chinami Motomatsu, 18, Chiba Prefectural Yakuendai Senior High School, Funabashi-City, Japan

Second Award of $750

EA002 **Comparison of Evaporation Rates from Mine Lakes to the Transpiration Rates from Previous Plant Life**
Timothy J. Lillo, 17, South Sumter High School, Bushnell, Florida

Third Award of $250

PH007 **Rocks of the Rainbow: Asteroid Classification Using SDSS Filters**
Stephanie Hiromi Spear, 16, Henry J. Kaiser High School, Honolulu, Hawaii

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

EE029 **Versatile Field Construction Machine for Paddy Cultivation**
Namal Namal Udara Piyasiri, 18, Tabuththegama Central College, Thambuththegama, Sri Lanka

EE317 **Digital Sandwich: Tasty Terabytes**

Nikita Chernyadev, 17, Lyceum No.82, Nizhny Novgorod, Russian Federation
Dmitry Khodebko, 17, Lyceum No.82, Nizhny Novgorod, Russian Federation
Alexander Shkitilev, 17, Lyceum No.82, Nizhny Novgorod, Russian Federation

Second Award of $250

EE303 **Solid State Fan**
Eliot Lim, 18, NUS High School of Mathematics and Science, Singapore, Singapore
Shiyang Yu, 18, NUS High School of Mathematics and Science, Singapore, Singapore
Zhong Liang Ou Yang, 18, NUS High School of Mathematics and Science, Singapore, Singapore

EE315 **TBox: Tracking Box**
Andre Santos Ferreira, 17, Oliveira do Bairro High School, Oliveira do Bairro, Portugal
Goncalo Goncalves Duarte Pires, 16, Oliveira do Bairro High School, Oliveira do Bairro, Portugal
Ricardo Martins Coelho Nunes, 18, Oliveira do Bairro High School, Oliveira do Bairro, Portugal

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 $1,000

MA043 **Characterizing the n-Division Points of Genus-0 Curves through Straightedge and Compass Constructions**

Nitya Mani, 16, The Harker School, San Jose, California

Second Award of $500

EN068 **Strongly Coupling the Electrical and Mechanical Dynamics of the Heartbeat in a Diffuse Interface Model**
Kevin K. Lee, 17, University High School, Irvine, California

MA013 **Weighted Catalan Numbers and Their Divisibility Properties**
Sarah Lee Shader, 18, Laramie High School, Laramie, Wyoming

Third Award of $250

MA015 **Hidden Secrets in Cevian Triangles**
Shahar Silberstein, 16, Makif Alef, Be'er Sheva, Israel

MA024 **Odd Dunkl Operators and nilHecke Algebras**
Ritesh Narayan Ragavender, 17, South Brunswick High School, Monmouth Junction, New Jersey

MA035 **Covering Squares of Side Length n+e with Unit Squares**
Rayna Dimchova Gadzheva, 18, Mathematical High School 'Konstantin Velichkov,' Pazardzhik, Bulgaria

MA036 **On the Hamiltonicity of Cubic, Polyhedral, Bipartite Graphs**
Paul Clarke, 17, St. Paul's College Raheny, Dublin, Ireland

Certificate of Honorable Mention

MA009 **Characterization of the Line Complexity of Cellular Automata Generated by Polynomial Transition Rules**
Bertrand Andrew Stone, 17, Nicolet High School, Glendale, Wisconsin

MA016 **A New Statistical Measure of Effect Size: Rate-Adjusted Standardized Mean Difference (RASMD)**
Katherine Marie Webb, 18, Tabb High School, Yorktown, Virginia

MA040 **The Impact of Demand Elasticity on the Downs-Thomson and Braess Paradoxes**
Rishi Suvir Mirchandani, 17, Fox Chapel Area Senior High School, Pittsburgh, Pennsylvania

MA056 **Cohomology of Finite Groups without Homological Algebra**
Nikolai Mostovskii, 17, The Laboratory for Continuous Mathematical Education, St.Petersburg, Russian Federation

MA308 **Bracelet Problem with Identical Beads**
Ata Aydin Uslu, 18, Edirne Suleyman Demirel Fen Lisesi, Edirne, Turkey
Hamdi Goktan Ozmenekse, 18, Edirne Süleyman Demirel Fen Lisesi, Edirne, Turkey

A booklet on Karl Menger will also 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

EA015 **Geographic Belts for Hurricane Landfall Location Prediction**
William Wu, 17, Clear Lake High School, Houston, Texas

Second Award of $1,000

EA002 **Comparison of Evaporation Rates from Mine Lakes to the Transpiration Rates from Previous Plant Life**
Timothy J. Lillo, 17, South Sumter High School, Bushnell, Florida

Third Award of $500

EA005 **Increase in Tropical Cyclone Intensity and Ocean Subsurface Warming in the Western North Pacific Ocean**
Yu-Hsin Chen, 17, Taipei First Girls High School, Taipei, Chinese Taipei

Certificate of Honorable Mention

EA001 **Lunar Tide Contribution to Thermosphere Weather**
Jesse Tan Zhang, 16, Fairview High School, Boulder, Colorado

EA303 **Secrets of San Lorenzo Valley's Atmosphere: Vertical Meteorological Measurements, Part Two**
Connor B. Lydon, 17, San Lorenzo Valley High School, Felton, California
Natalie Rose Gallagher, 16, San Lorenzo Valley High School, Felton, California

EA304 **Hurricanes and Ocean Temperature**
Caroline Morris, 18, Henry W. Grady High School, Atlanta, Georgia
Mary Claire Morris, 17, Henry W. Grady High School, Atlanta, Georgia

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

BE015 **Role of Somatostatin Interneurons in Alzheimer's Disease**
Divya Koyyalagunta, 18, Clear Lake High School, Houston, Texas

Second Award of $1,000

EV025 **Effects of the Environmental Pollutant Acrylic Aldehyde on Renal Fibrosis**
Sanjana J. Rane, 16, duPont Manual High School, Louisville, Kentucky

Third Award of $500

CB011 **Age and Glaucoma Induced Changes in Retinal Ganglion Cell Function**
Garrett Elijah McGrady, 16, duPont Manual High School, Louisville, Kentucky

APS Exceptional Science Award for $500

CB012 **p38 in Muscle Differentiation**

Giuseppe Dall'Agnese, 20, Liceo Scientifico E. Vendramini, Pordenone, Italy

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

ME091 **Adolescent Loss of Lis1 Results in Defective Hippocampal Morphology and Distinct Behavioral Deficits Resembling a Schizophrenic-Like Phenotype**
Leighton Braunstein, 18, The Dalton School, New York, New York

Second Award of $1,000

BE002 **Hand Hygiene Gone Viral? A Study of Student Involvement in a Social Media Campaign as a Method of Bringing Hand Hygiene to the Masses**
Timothy James Fossum Renier, 16, Duluth East High School, Duluth, Minnesota

Third Award of $500

AS057 **A Study of the Effects of Transplantation of Tissue from Planarian Flatworms Conditioned with Light-Shock Therapy into Naïve Planarian Flatworms**

Chloe Sherry, 17, John Adams High School, South Bend, Indiana

BE013 **The Paradox of Emotional Dimensionality: The Effect of the Dimensionality of Audio Stimuli on the Brain's Electrical Activity, a Neuroscience Study**
Michelle Marie Marquez, 15, Math and Science High School at Clover Hill, Midlothian, Virginia

BE029 **Light Speed: A Measure of Ocular Phototransduction Using Pulsed Light Emitting Diodes**
Ashley Maye Hamlin, 16, Hilton Head Island High School, Hilton Head Island, South Carolina

BE035 **Linking Expression and Function of FoxP2 in Adult Songbirds Using Operant Preference Testing**
Petra Luna Grutzik, 18, Redondo Union High School, Redondo Beach, California

BI308 **The Correlation between Docosahexaenoic Acid (DHA) and Cognitive Function in Healthy Teens**
Colin Norick, 15, Columbia Falls High School, Columbia Falls, Montana
Colter Norick, 16, Columbia Falls High School, Columbia Falls, Montana

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

PS042 **Examining Potential False Positives for Genetic Modification in Taro**
Anuhea DeLude, 18, Kamehameha Schools Kapalama, Honolulu, Hawaii

Second Award of $500

PS023 **Molecular Characterization of Wild Beet in the Imperial Valley's Commercial Sugar Beet Fields**
Kapil Sinha, 14, Salinas High School, Salinas, California

Third Award of $250

PS043 **An Eco-friendly RNA Interference-based Insect Control for Management of Citrus Greening Disease using a Model System**
Saumya R. Keremane, 17, Martin Luther King High School, Riverside, California

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

MI304 **The State of Parental Mitochondria Influences the Replicative Lifespan of Zygotes of Saccharomyces cerevisiae**
Pei-Ming Chen, 16, Taipei Municipal Jianguo High School, Taipei, Chinese Taipei
Shao-Ting Chiu, 18, Taipei Municipal Jianguo High School, Taipei, Chinese Taipei

Second Award of $1,750

MI310 **Production of Bioplastic by a Bacterium Isolated from Waste Treatment Facility (from Lignocellulosic Glucose, Abundant Sucrose, Byproduct of Biodiesel & Spent Coffee Grounds Extract)**
Gi Na Lee, 18, Korean Minjok Leadership Academy, Hoengseong-gun, South Korea
Dong Il Je, 17, Korean Minjok Leadership Academy, Hoengseong-gun, South Korea

Third Award of $1,000

MI309 **Elucidating the Metabolism and Toxicity of Host-Derived Toxin Methylglyoxal in Mycobacterium Tuberculosis and Mycobacterium Smegmatis**
Zhun Che, 17, Pelham Memorial High School, Pelham, New York
Julia Burns Kavanagh, 17, Pelham Memorial High School, Pelham, New York
Luke E. Hellum, 16, Pelham Memorial High School, Pelham, New York

Fourth Award of $750

MI009 **Improved Multiplexed Automated Genome Engineering through Directed Evolution**
Mark Kit Lim, 17, Raffles Institution, Singapore, Singapore

Fifth Award of $400

MI002 **Development of a Novel Antimicrobial Polymer for Biomedical Applications**
Joshua Cyril Abreo, 16, James Clemens High School, Madison, Alabama

MI005 **The Conjugative Plasmid RK2 as a Delivery System for Artificial AnatheriaH Genes: A Novel Synthetic Biology Alternative to Traditional Antibiotics**
Logan Collins, 17, Fairview High School, Boulder, Colorado

MI022 **Development of in vitro Multispecies Biofilms with Hydroxyapatite and Artificial Saliva**
Terry Gwen Ni, 16, Boston Latin School, Boston, Massachusetts

MI059 **Identification of Novel Broad-Spectrum Antimicrobial Compounds in Curcuma amada**
Varsha Jayasankar, 17, Sir Winston Churchill Secondary School, St. Catharines, Canada

MI065 **Developing Novel Protein Targets for Bordetella pertussis Antibiotics: Understanding Protein Interfaces and Domain-Domain Interactions**
William Huang Jin, 18, Gwinnett School of Mathematics, Science, and Technology, Lawrenceville, Georgia

MI071 **DNA Repair Mechanisms in Yeast: Shu Complex Interactions with Rdh54**
Kyle T. Yoshida, 18, Kamehameha Schools Kapalama, Honolulu, Hawaii

All finalists in the Microbiology Category receive a student membership to AMS, 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

BE031 **Using Google Trends to Enhance Predictive Models of Mortgage Delinquency to Mitigate Risk in the Loan Lending Process**
Soham Daga, 17, Stuyvesant High School, Manhattan, New York

Second Award of $500

CS074 **Indium: Using Novel Machine Learning Algorithms to Develop a Nondisease-specific Personalized Medicine Engine**
Yousuf Mounir Soliman, 17, Canyon Crest Academy, San Diego, California

Third Award of $250

ME037 **Characteristics of Deleterious Mutations in Tumor Suppressor Genes**
Nathan Han, 15, Boston Latin School, Boston, Massachusetts

Certificate of Honorable Mention

BE038 **Healthy Youth: Effect of Physical Activity and Sleep Patterns on Physical and Mental Well-Being in Adolescents**
Grace Hwang, 16, Hershey High School, Hershey, Pennsylvania

BE040 **Self-induced Sleep Loss: A Novel Risk Factor for Nighttime Food Desire in Adolescents and the Association with Brain Dopamine Signaling and Obesity**
Zarin Ibnat Rahman, 17, Brookings High School, Brookings, South Dakota

CS011 **A Novel Method for Melanoma Skin Cancer Diagnosis at an Early Stage Using ANN and DNA Analysis**
Alaa Amri, 18, Pioneer High School of Gabes, Gabes, Tunisia

CS053 **Indoor Navigation with Maximum Likelihood Classification of Wi-Fi Fingerprints**
Noah Christian Pritt, 17, Pritt Home School, Walkersville, Maryland

CS062 **Predicting Cancer Drug Response Using Nuclear Norm Multi-Task Learning**
Ivan Paskov, 18, Edgemont High School, Scarsdale, New York

EM043 **Enhancing Nutrient Values of Gryllodes sigillatus for Future Food Sustainability**
Chase Evan Herman, 18, Nixa High School, Nixa, Missouri

ET306 **Comparison of Organized and Randomized Multilayer Films**
Andrew Moshova, 17, Manhasset High School, Manhasset, New York
Jessica Kim, 17, Manhasset High School, Manhasset, New York

MA025 **Identification of the Impact of Obesity Treatments on Gene Expression using a Novel Statistical Test**
Shreya Mathur, 17, Oxford High School, Oxford, Mississippi

MA029 **Development and Comparative Analysis of Machine Learning Algorithms for Breast Cancer Detection**
Clemen Deng, 16, Lincoln High School, Portland, Oregon

ME048 **Sugar Rush Sugar Crash: Analyzing the Effect of Sugar on Physical and Mental Performance Using ANoVA**
Chris Mathews, 14, Home School, Las Vegas, Nevada

ME095 **The Diagnostic Potential of Brain Derived Neurotrophic Factor in Mild to Moderate Depression**
Arjuna Sathyadeep Maharaj, 17, Ancaster High School, Ancaster, Canada

ME098 **Alzheimer's Disease Distribution in the Northwest in Relation to Microclimates, a Second Year Epidemiological Study**
Talia Alysse Lichtenberg, 16, West Linn High School, West Linn, Oregon

ME310 **Supertasting Ability, Satiety, and Childhood Obesity in the Hispanic Population**
Japmeet Kaur Sandhu, 16, Clovis North Educational Center, Fresno, California
Ashima Thusu, 15, Clovis North Educational Center, Fresno, California

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.

American Veterinary Medical Association

Founded in 1863, the American Veterinary Medical Association is an 86,000 member professional organization dedicated to advancing the science and art of veterinary medicine. The AVMA and its charitable arm, the American Veterinary Medical Foundation, are proud to present 5 first place awards of $1,000 each and a plaque. The awards are presented for excellence in the fields of food animal health, animal health, public health, comparative medicine, and biomedical research.

First Award of $1,000 and a plaque

AS019 **Optimal Equine Balance: Application of Biophysics to Assess and Reduce Equine Injury, Phase II**
Erika Nicole Mueller, 16, Clearfield High School, Clearfield, Utah

AS023 **Developmental Effects of Correlated Color Temperature of Artificial Lights on Painted Lady Butterflies Vanessa cardui**
Simiao You, 19, Holyoke Catholic High School, Chicopee, Massachusetts

AS301 **What Effect Does Gender, Tone, and Sound Location Have on the Response Behavior of Neogobius melanostomus (Round Gobies) and the Possibility of Future Trapping of this Invasive Species?**

Christine Elizabeth Neumann, 16, Cloquet Senior High School, Cloquet, Minnesota
Crystal Rae Moynan, 16, Cloquet Senior High School, Cloquet, Minnesota

EM007 **Why Did Water Strider Mysteriously Disappear from Rural Ponds?**
Xidian Zhang, 19, No.1 Senior Middle School Puyang, Puyang City, China

ME020 **Development of a Novel Blood-Based Diagnostic for Canine Lymphosarcoma**
Golda R. Shaw, 17, George M Steinbrenner High School, Lutz, Florida

All winners will also receive a plaque.

Arizona State University

Arizona State University is pleased to offer a comprehensive scholarship combining a monetary award and an environment focusing on knowledge, learning and research. The New American University Scholarship is renewable for four years. Individuals and teams were considered for these awards.

New American University Provost Scholarship

BI044 **Novel Design and Evaluation of Chitosan Nanoparticle Ocular Drug Delivery System**
Sriram Somasundaram, 16, The Harker School, San Jose, California

CB010 **Universal, MHC-E Restricted Killer T Cell Responses: Identification of a Novel Immune Response against HIV**
Reesab Pathak, 16, Camas High School, Camas, Washington

CB059 **Factomics: A Cloud-Enabled Application Incorporating Integrative Genomics and GWAS Facilitating Disease Causation Analysis**

Swetha Revanur, 15, Evergreen Valley High School, San Jose, California

CH003 **The Optimal Reclamation Point of Phosphate from a Wastewater Treatment Plant**
Lewis Michael Nitschinsk, 18, Queensland Academies for Health Sciences, Southport, Australia

CH022 **Electronic Tongue: Tastes of Toxic Metal Ions in Water**
Seung Hye (Beatrice) Choi, 15, University High School, Fresno, California

CH049 **Gas Phase Ion Chemistry and Ion Mobility of Pharmaceutical Substances in Counterfeit Formulations: Technology for Measurement and Confidence of Detection**
Jeongmin Lee, 16, Las Cruces High School, Las Cruces, New Mexico

CS019 **Panthera: Caching and Cache-based Scheduling in Distributed Computing Systems**
Dhaivat Nitin Pandya, 16, Appleton North High School, Appleton, Wisconsin

CS078 **A Novel Approach to Genetic Interaction Research with an Integrated Repository of Gene Regulatory Networks**
Shrey Gupta, 17, BASIS Scottsdale, Scottsdale, Arizona

EA001 **Lunar Tide Contribution to Thermosphere Weather**
Jesse Tan Zhang, 16, Fairview High School, Boulder, Colorado

EE056 **Demonstration and Characterization of Split Ring Resonators as Terahertz Waveguides**
Brandon Cui, 17, Hillcrest High School, Midvale, Utah

EE088 **Thermal Energy Storage: The Efficiency of Latent Heat Energy Storage using Phase Change Materials**
Julia Mariko Hirano, 15, Waimea High School, Waimea, Hawaii

EM017 **Developing a Sustainable Water Filtration System for Use in Low Income Countries**

Bluyé DeMessie, 17, William Mason High School, Mason, Ohio

EN029 **Ultrasound-responsive Nanoparticles for Neurotherapeutic Delivery**
Shelby Chi Yuan, 17, University High School, Tucson, Arizona

EN062 **A Novel Energy Harvesting System with a Piezo Element to Power a Visual Prosthesis**
Kumaran V.K. Ratnam, 15, Dublin High School, Dublin, California

PH007 **Rocks of the Rainbow: Asteroid Classification Using SDSS Filters**
Stephanie Hiromi Spear, 16, Henry J. Kaiser High School, Honolulu, Hawaii

PH019 **Novel Automated Next-Generation Multijunction Quantum Dot Solar Panel Designs Using Monte Carlo-Based Modeling**
Valerie S. Ding, 17, Catlin Gabel School, Portland, Oregon

PH026 **The Generation and Analysis of Waves with Varying Nonlinearity**
Thorsen Michael Wehr, 17, Odessa High School, Odessa, Washington

PH039 **Quantum Locking: Applications towards Controlled Frictionless Spatial Motion**
Julienne Sauer, 14, Dougherty Valley High School, San Ramon, California

PH045 **3D Hydrodynamic Simulation of Classical Nova Explosions**
Coleman J. Kendrick, 16, Los Alamos High School, Los Alamos, New Mexico

PH081 **The Leidenpump: A Non-Mechanical Means of Fluid Delivery**
John Chapman Alexander Caddell, 16, Stevenson School, Pebble Beach, California

PS043 **An Eco-friendly RNA Interference-based Insect Control for Management of Citrus Greening Disease using a Model System**

Saumya R. Keremane, 17, Martin Luther King High School, Riverside, California

PS301 **Enhanced Third-Generation Biofuel Production from Genetically Modified Algae**
Wenjia (Dara) Li, 16, Jasper High School, Plano, Texas
Anoop Vemulapalli, 16, Plano West Senior High School, Plano, Texas

Students must be admitted as undergraduate students in a degree seeking program immediately following their graduation from secondary school. The award amount is equal to the New American University Provost Scholarship; differentiated amounts exist for Arizona residents and non residents.

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 U.S. savings bond

CB043 **A Novel Approach for Metastatic Breast Cancer Therapy: Pharmacological Inhibition of EZH2 Histone Methyl Transferase Activity Suppresses Cancer Stem Cells and Induces Epithelial Phenotype**
Sara Sakowitz, 18, The Brearley School, New York, New York

MA001 **A Novel Mathematical Simulation to Study the Dynamics of CD4 Cells, CD8 Cells, and HIV Viral Load**
Nirali Kunjan Thakor, 16, Shepton High School, Plano, Texas

Second Award of $500 U.S. savings bond

AS056 **Cashew Tree (Anacardium occidentale): An Effective Treatment for Cattle Dermatitis**

Deeksha. P Hebbar, 14, Vivekananda English Medium School, Puttur, India

BI048 **A Novel Treatment for Stroke, Traumatic Brain Injury, Alzheimer's, and other Neurodegenerative Disease: Sildenafil Promotes Axonal Outgrowth in the CSPG Inhibitory Environment through Modulation of miRNA Levels**
Guangning An, 18, International Academy, Troy, Michigan

CB022 **Control of Induced Pluripotent Stem Cell Aging by Modulation of Mitochondrial DNA Deletions**
Joshua Abraham Meier, 18, Academy for the Advancement of Science and Technology, Hackensack, New Jersey

CS025 **Diagnosis of Abnormalities in 3-Dimensional Mammograms via an Artificial Neural Network**
Joshua Michael Zweig, 18, Commack High School, Commack, New York

EN324 **Optimization of Lithium-Sulfur Battery Cathode: Role of Sulfur-Carbon Interaction**
Madan A. Subheeswar, 15, duPont Manual High School, Louisville, Kentucky
Matthew Carmel Raj, 14, duPont Manual High School, Louisville, Kentucky
Richard Nipun Gunasena, 15, duPont Manual High School, Louisville, Kentucky

PH011 **Frequency Modulation Feedback Control for Near-Field Acoustic Characterization of Mesoscopic Fluid Films**
Pramith Sai Devulapalli, 17, Westview High School, Portland, Oregon

PH046 **Partitioning Gamma-Ray Sources in Fermi Large Area Telescope Observations for Spatial and Spectral Analysis**
Isabelle Goldstein, 17, Ridgefield High School, Ridgefield, Connecticut

PS019 **Brassica juncea (Mustard) Flowers to Attract Pollinators for Better Malus domestica (Apple) Yield**
Jaya Sagar, 16, Government Senior Secondary School- Manali, Manali, India

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

Association for Computing Machinery

First Award of $1,000

CS019 **Panthera: Caching and Cache-based Scheduling in Distributed Computing Systems**
Dhaivat Nitin Pandya, 16, Appleton North High School, Appleton, Wisconsin

Second Award of $500

CS038 **Come Code with Codester: A Novel Educational App that Teaches Computer Science**
Gili Rusak, 17, Shaker High School, Latham, New York

Third Award of $300

CS012 **Using Artificial Intelligence and Computer Vision in Creating an Operating System for Head-Mounted Displays**
Nebras Nabil Djemel, 18, Pioneer High School of Gabes, Gabes, Tunisia

Fourth Award of $200

CS008 **Brownian Motion as a Source of Entropy for the Generation of Random Numbers**
Russell Ean Bryan, 18, Arkansas School for Mathematics, Sciences and the Arts, Hot Springs, Arkansas

CS053 **Indoor Navigation with Maximum Likelihood Classification of Wi-Fi Fingerprints**
Noah Christian Pritt, 17, Pritt Home School, Walkersville, Maryland

CS304 **A New Secure Distributed Storage System for Cloud: Mathematical Framework, Design and Applications**
Chih Wei Tan, 17, Pui Ching Middle School, Macau, China, Macao Special Administrative Region
Hou Teng Cheong, 17, Pui Ching Middle School, Macau, China, Macao Special Administrative Region

All ACM Special Award winners will receive complimentary ACM Student Memberships for the duration of their undergraduate education. The ACM's Student Portal Package also includes ACM's Digital Library. Intel ISEF finalists competing in the Computer Science category will 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. AAAI promotes research in, and responsible use of, artificial intelligence, as well as public understanding of artificial intelligence. AAAI 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

CS033 **A Novel Computational Agent-Based Model for the Outbreak, Spread, and Containment of Tuberculosis**
Parth Chopra, 17, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

Second Award of $1,000

CS073 **Semantic Multilayer SVM: Novel Artificial Intelligence and Computer Vision Applied to Prostate Cancer Grading and Breast Cancer Diagnosis**
William C. Hang, 16, Scripps Ranch High School, San Diego, California

Third Award of $500

ME037 **Characteristics of Deleterious Mutations in Tumor Suppressor Genes**
Nathan Han, 15, Boston Latin School, Boston, Massachusetts

Honorable Mention

CS009 **RNNScan: Eukaryotic Gene Finding via Hybrid Recurrent Neural Networks**
Anand Srinivasan, 17, Roswell High School, Roswell, Georgia

CS037 **Development of a Novel Machine Learning Algorithm to Monitor Vascular Tissue Transfers Using Speech Recognition Techniques**
Ariel Benjamin Kanevsky, 17, Ossining High School, Ossining, New York

CS046 **What's Your Problem? Automatically Summarizing Scientific Research with Open Problems**
Cassidy Laidlaw, 17, Barrington High School, Barrington, Rhode Island

CS310 **Translator of Gestures: Human Interface Software**
Anna Dmitrievna Kustareva, 17, Municipal Budget Educational Institution "Lyceum No.165," Nizhny Novgorod, Russian Federation
Maxim Alexeevich Sokolov, 17, Municipal Budget Educational Institution "Lyceum No.165," Nizhny Novgorod, Russian Federation

EE013 **Engineering A Novel Autonomous Wheelchair System for the Visually-Impaired and Quadriplegic Individuals**

Brandon Kinard, 16, Mililani High School, Mililani, Hawaii

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

PH023 **Velocity Gradients in Relation to Spatial Scales of Star-forming Dense Cores in the Perseus Molecular Cloud**
Luhong Li, 17, John L. Miller Great Neck North High School, Great Neck, New York

Priscilla and Bart Bok Second Award of $500

PH045 **3D Hydrodynamic Simulation of Classical Nova Explosions**
Coleman J. Kendrick, 16, Los Alamos High School, Los Alamos, New Mexico

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

The Rob and Melani Walton Sustainability Solutions Initiatives are the result of a $27.5 million investment in Arizona State University's 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

CH003 **The Optimal Reclamation Point of Phosphate from a Wastewater Treatment Plant**
Lewis Michael Nitschinsk, 18, Queensland Academies for Health Sciences, Southport, Australia

CH309 **A Unique Kit for Detection and Removal of Pesticides from Fruits and Vegetables**
Shreya Nandy, 16, Amity International School, Mayur Vihar, New Delhi, India
Kopal Gupta, 16, Amity International School, Mayur Vihar, New Delhi, India

EM052 **Removing Carbon Dioxide from our Atmosphere: Using Porous Crystalline Materials for CO2 Capture**
Naveena Aishwarya Bontha, 14, Hanford High School, Richland, Washington

EV029 **Sustainable Water Purification System with UV Irradiation**
Hans Christian Pande, 17, Woods Cross High School, Woods Cross, Utah

Charity Foundation - Open Hearts of Ukraine

Open Hearts of Ukraine has enabled youth education, organized exhibitions of Ukrainian artwork, and constructed a healthy environment for the whole family to support talented youth. The implementation of innovative ideas unites the Foundation's projects in health, sports, education and culture.

First Award of $2,000

ME094 **The SMART System: Stroke Management with Augmented Reality Technology**
Ethan Thomas Butson, 18, The Illawarra Grammar School, Mangerton, Australia

Second Award of $1,500

EE334 **Electronic Braille Display for the Visually Impaired**
Dieu Lien Thi Tran, 17, Le Hong Phong High School for the Gifted, Ho Chi Minh, Viet Nam
Du Nam Nguyen, 18, Le Hong Phong High School for the Gifted, Ho Chí Minh, Viet Nam

Third Award of $1,000

CB018 **Functions of BldD Respressor in Teicoplanin Producer Actinoplanes teichomyceticus**
Kseniya-Oksana Zhukrovska, 17, Lviv Academic Gymnasium at the National University "Lviv Polytechnic," Lviv, Ukraine

Fourth Award of $500

EN025 **Growing Spine Implant and Test Method**
Harry Paul, 17, Paul D. Schreiber High School, Port Washington, New York

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

CB043 **A Novel Approach for Metastatic Breast Cancer Therapy: Pharmacological Inhibition of EZH2 Histone Methyl Transferase Activity Suppresses Cancer Stem Cells and Induces Epithelial Phenotype**
Sara Sakowitz, 18, The Brearley School, New York, New York

CH051 **Dendritic Crystallization of Salts**
Theresa Zeisner, 18, Okumenisches Gymnasium, Bremen, Germany

EE002 **Two Transistor Ternary Random Access Memory**
Simon Peter Tsaoussis, 16, Christopher Columbus High School, Miami, Florida

EE303 **Solid State Fan**
Eliot Lim, 18, NUS High School of Mathematics and Science, Singapore, Singapore
Shiyang Yu, 18, NUS High School of Mathematics and Science, Singapore, Singapore
Zhong Liang Ou Yang, 18, NUS High School of Mathematics and Science, Singapore, Singapore

EE317 **Digital Sandwich: Tasty Terabytes**

Nikita Chernyadev, 17, Lyceum No.82, Nizhny Novgorod, Russian Federation
Dmitry Khodebko, 17, Lyceum No.82, Nizhny Novgorod, Russian Federation
Alexander Shkitilev, 17, Lyceum No.82, Nizhny Novgorod, Russian Federation

EM018 **Sustainable Future for Endangered Species? Predicting the Impacts of the Wilmar Policy on Bornean Orangutan Populations**
Emma R. Freedman, 15, Stanford University Online High School, Corralitos, California

EN302 **Anastomosis Robot Tool (ART)**
Yuki Trippel, 19, HTBLuVA Modling, Mödling, Austria
Dominik Kovacs, 19, HTBLuVA Modling, Mödling, Austria
Thomas Gunther Steinlechner, 20, HTBLuVA Modling, Mödling, Austria

MA032 **A Monte Carlo Protein Folding Simulation using Energy Optimization with Novel Applications to Alzheimer's Disease Research**
Niranjan Balachandar, 17, Texas Academy of Mathematics and Science, Denton, Texas

ME005 **Nicotine and Genistein as Novel Therapeutic Agents for Alzheimer's Disease**
Meenakshi Bose, 16, Eastside High School, Gainesville, Florida

MI039 **What's on the Menu: Identification of the Hydrocarbon Transport Systems as a First Step in Marine Oil-Degradation by Alcanivorax borkumensis**
Swapnav Deka, 17, Plano East Senior High School, Plano, Texas

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

PH065 **On Tycho Supernova Remnant Accelerating Cosmic-rays**
Michaela Brchnelova, 17, High School of Jura Hronca, Bratislava, Slovakia

Consortium for Ocean Leadership

A Washington, DC based nonprofit organization that represents 102 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.

EV034 **Improving Bioindicators: A New Weight-Length Model for Fish to Provide More Accurate Ecosystem Condition Assessment**
Ya'el Carmel Courtney, 17, Mount Carmel School, Aurora, Ohio

Award of $1,500 for ocean science projects, with an emphasis on marine geosciences.

EA008 **Tsunami Mitigation as a Function of Alterations in Bottom Friction**

Naomi Benson, 17, Deerfield High School, Deerfield, Illinois

EE320 **Ice Bot: A Deep Sea Diving Apparatus**
Mirae Leigh Parker, 18, West High School, Salt Lake City, Utah
Ema Linnea Parker, 16, Wasatch Academy, Mount Pleasant, Utah

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

MI039 **What's on the Menu: Identification of the Hydrocarbon Transport Systems as a First Step in Marine Oil-Degradation by Alcanivorax borkumensis**
Swapnav Deka, 17, Plano East Senior High School, Plano, Texas

Drexel Smart House

Drexel Smart House is a student led initiative to encourage research around urban sustainability and implement student projects into a living laboratory. DSH provides a platform for students to pursue their own research project and create the next generation of urban living. We offer students funding and access to experienced professors, while interacting with the community of Philadelphia. At Intel ISEF, DSH is proud to offer awards for research exploring new ways to live more sustainability.

First Place Award of $500

EV029 **Sustainable Water Purification System with UV Irradiation**
Hans Christian Pande, 17, Woods Cross High School, Woods Cross, Utah

EV311 **New Discovery of Eco Plyfibre via Pineapple Leaf and Recyclable Plastic for Future Sustainability**

Nur Hanis Suriani Binti Mohd Zaini, 17, Mara Junior Science College Terendak, Melaka, Malaysia
Nurul Najiha Binti Mohd Roslan, 17, Mara Junior Science College Terendak, Melaka, Malaysia

Drexel University

Drexel University will award 8 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

AS006 **Hot Biology: Use of Thermal Imaging to Detect Nesting Behaviors of the Endangered Hawaiian Coot**
Sarah 'Alohilani Jenkins, 16, Molokai High School, Ho'olehua, Hawaii

AS016 **Haplotype Variation in Banded Sunfish (Enneacanthus obesus) from the Peconic River, Long Island, New York**
Allison Mary Murphy, 16, Sayville High School, West Sayville, New York

CS082 **Identifying Pollen Cells Using Computer Analysis: An Aid for Allergists, Immunologists, and Other Health Care Specialists**
Adam Clayton Staszewski, 17, John Adams High School, South Bend, Indiana

EM015 **Biological Control of the Invasive Eurasian Watermilfoil Using Aquatic Weevils**
Janine Alysa Kerr, 16, Danbury High School, Danbury, Connecticut

EV024 **P.A.H. (Polycyclic Aromatic Hydrocarbons) Mixtures: Using Zebrafish to Elucidate Mechanisms of Toxicity**
Meera Radha Srinivasan, 16, Interlake High School, Bellevue, Washington

EV029 **Sustainable Water Purification System with UV Irradiation**
Hans Christian Pande, 17, Woods Cross High School, Woods Cross, Utah

EV032 **Exploring the Effect of Herbicides on Acquatic Ecosystems: The Denitrification Efficacy of Lemna minor under Varying Atrazine Concentrations**
Abigail Ella Johnson, 17, Shenandoah Valley Governor's School, Fishersville, Virginia

EV038 **Investigation of Different Degradation Treatments on Pesticide Contaminated Water with Toxicity Bioassay on Daphnia magna**
Bovey Rao, 17, Hillcrest High School, Midvale, Utah

Scholarships are renewable for up to 5 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 centres 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, 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

CS009 **RNNScan: Eukaryotic Gene Finding via Hybrid Recurrent Neural Networks**
Anand Srinivasan, 17, Roswell High School, Roswell, Georgia

CS038 **Come Code with Codester: A Novel Educational App that Teaches Computer Science**
Gili Rusak, 17, Shaker High School, Latham, New York

CS060 **Twinsight: A Novel Multifactor Behavioral Analysis Algorithm for Social Media**
Daniel Mogilny, 15, Holy Trinity School, Richmond Hill, Canada

CS073 **Semantic Multilayer SVM: Novel Artificial Intelligence and Computer Vision Applied to Prostate Cancer Grading and Breast Cancer Diagnosis**
William C. Hang, 16, Scripps Ranch High School, San Diego, California

ET021 **Development of Highly Efficient and Stable Dye-sensitized Solar Cells Using Natural Hydrangea macrophylla Dyes**
Mie Yamanaka, 17, Miyagi Prefectural Sendai Daini Senior High School, Sendai-City, Japan

MA052 **On the Theory of Lures with Dynamical Action on Compact Topological Manifolds and Ordinary Hyperreal Fractal Strings**
Jared Anthony Tramontano, 15, Centennial High School, Corona, California

PH020 **Time and Radiation Domain in Star-Like Objects: Relating Intrinsic Colors of Quasars to Redshifts**
Lia Grace Strauss Eggleston, 14, Home School, Laramie, Wyoming

PH041 **Spectral Smartphone: Rapid Prototyping Mobile Platform Diffraction Spectrophotometry**
Allen Jiang, 16, duPont Manual High School, Louisville, Kentucky

PH046 **Partitioning Gamma-Ray Sources in Fermi Large Area Telescope Observations for Spatial and Spectral Analysis**

Isabelle Goldstein, 17, Ridgefield High School, Ridgefield, Connecticut

PH065 **On Tycho Supernova Remnant Accelerating Cosmic-rays**
Michaela Brchnelova, 17, High School of Jura Hronca, Bratislava, Slovakia

PH312 **Nuclear Fusion Using a Pyroelectric Crystal Particle Accelerator**
Tucker John Sandbakken, 17, Maple Mountain High School, Spanish Fork, Utah
Jason Kim Syndergaard, 17, Maple Mountain High School, Spanish Fork, Utah

Alternate for CERN trip

CS005 **SNAP: A Novel Algorithm for Fast Global Sequence Alignment and Database Search**
Venkatesh S. Sivaraman, 16, Caddo Parish Magnet High School, Shreveport, Louisiana

PH071 **Optimizing the Process of Single Photons Coupling into Single-Mode Fibers by Using a Genetic Algorithm and Spatial Light Modulation**
Jerzy Krzysztof Szuniewicz, 17, Adama Mickiewicza High School in Poznan, Poznan, Poland

This award is made possible by cooperative grants from Intel and CERN, which collaborates with Intel in the framework of CERN openlab. Eligible Intel ISEF finalists have applied to be considered for an opportunity to travel to tour CERN, the European Organization for Nuclear Research, the world's leading laboratory for particle physics in Geneva, Switzerland. This award is made possible by cooperative grants from Intel and the CERN IT Department, which collaborates with Intel in the framework of CERN openlab. Students must be available for travel to Switzerland and France on the established dates.

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

BI007 **An in vitro Study of the Effectiveness of Cinnamon Compounds on the Degradation of Amyloid-B and Tau Protein in Alzheimer's Disease**
Natalie Elizabeth Barton, 17, Bayside High School, Palm Bay, Florida

EE006 **Passive Auto-Tracking Heliostat**
Brayton Miles, 17, Niceville High School, Niceville, Florida

ET053 **Using Intelligent Autonomous Holonomic Landing Gear in Crosswind Landings to Advance Aviation Safety**
Emerson Czerwinski Burkard, 17, Manlius Pebble Hill School, Dewitt, New York

Florida Tech is offering tuition scholarships of $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 studying microbiomes in children. FBK's Board of Directors will award 4 Intel ISEF finalists full fellowships, including travel to Italy, to be part of the WebValley team in June 2014.

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

CS012 **Using Artificial Intelligence and Computer Vision in Creating an Operating System for Head-Mounted Displays**
Nebras Nabil Djemel, 18, Pioneer High School of Gabes, Gabes, Tunisia

CS020 **Detecting the Structure of Videos by Extracting Features from Time Series User Interaction Data**
Hiromu Yakura, 17, Nada Senior High School, Kobe, Japan

EN068 **Strongly Coupling the Electrical and Mechanical Dynamics of the Heartbeat in a Diffuse Interface Model**
Kevin K. Lee, 17, University High School, Irvine, California

MI013 **A Novel Response to Antibiotic Resistance: Application of Microparticles and AC Currents**
Pia Sen, 17, Liberal Arts and Science Academy High School, Austin, 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.

Fundació Víctor Grífols i Lucas

The Victor Grifols i Lucas Foundation was created in 1998, under the auspices of Grifols, with the mission of promoting bioethics through dialogue between specialists in a range of areas. The Foundation seeks to foster ethical attitudes in organizations, companies and individuals active in the field of human health. To achieve this, it offers a discussion platform which provides a forum for the exchange of different perspectives on the ethics of life.

First Award of $5,000

ME079 **Isothermal Nucleic Acid Amplification System for Point-of-Care HIV Diagnosis**

Nicole Sabina Ticea, 15, York House School, Vancouver, Canada

Second Award of $3,000

ME101 **Towards a Combination Antiviral Therapy for Flu: An Interdisciplinary Drug Discovery Effort**
Eric S. Chen, 18, Canyon Crest Academy, San Diego, California

Third Award of $2,000

ME055 **Dengue or Leptospirosis?**
Miguel Geraldo Rodriguez, 16, Specialized School in Science and Mathematics Genaro Cautino Vazquez, Guayama, Puerto Rico

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

CS005 **SNAP: A Novel Algorithm for Fast Global Sequence Alignment and Database Search**
Venkatesh S. Sivaraman, 16, Caddo Parish Magnet High School, Shreveport, Louisiana

$1,500 Forward Thinker Award

CS028 **Manipulated "Holograms": Fantastic Becomes Real**
Oleksandr Loyko, 17, Kyiv Gymnasium #48, Kyiv, Ukraine

$1,500 Mobile Application Award

CS305 **Trailblazer: Cooperative, Infrastructure-Independent Generation of Indoor Floor Maps using Handheld Android Mobile Devices**
Andrew Zhou, 18, Raleigh Charter High School, Raleigh, North Carolina
Sanjay Kannan, 17, Raleigh Charter High School, Raleigh, North Carolina
Elish Mahajan, 18, Raleigh Charter High School, Raleigh, North Carolina

$1,500 Open Source Award

CS006 **Pi to Share: Utilizing the Raspberry Pi as a Home File Server**
Connor Joshua Cunningham, 16, Vici High School, Vici, Oklahoma

$1,500 Web Innovator Award

CS057 **Fuzzy Logic Based Web Browser for the Motor Impaired**
Suvir Prakash Mirchandani, 15, Fox Chapel Area Senior High School, Pittsburgh, Pennsylvania

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 in a field other than computer science; Google CS Connect Award

CS040 **Optimizing Digital Content for Color-Blind Audiences Using Enhancement Algorithms**
Animesh Tripathi, 17, Sanskriti School, New Delhi, India

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

CS019 **Panthera: Caching and Cache-based Scheduling in Distributed Computing Systems**
Dhaivat Nitin Pandya, 16, Appleton North High School, Appleton, Wisconsin

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

EE042 **A Multi-Architectural Approach to the Development of Embedded Hardware**
George David Morgan, 16, Clovis North Educational Center, 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.

IEEE Computer Society

The IEEE Computer Society is the world's leading computing membership organization and the trusted information and career-development source for a global workforce of technology leaders including: professors, researchers, software engineers, IT professionals, employers, and students. The unmatched source for technology information, inspiration, and collaboration, the IEEE Computer Society is the source that computing professionals trust to provide high-quality, state-of-the-art information.

First Award of $1,000

CS005 **SNAP: A Novel Algorithm for Fast Global Sequence Alignment and Database Search**
Venkatesh S. Sivaraman, 16, Caddo Parish Magnet High School, Shreveport, Louisiana

Team First Award of $500 for each team member

CS304 **A New Secure Distributed Storage System for Cloud: Mathematical Framework, Design and Applications**
Chih Wei Tan, 17, Pui Ching Middle School, Macau, China, Macao Special Administrative Region
Hou Teng Cheong, 17, Pui Ching Middle School, Macau, China, Macao Special Administrative Region

Second Award of $500

EE071 **An Integrated Software Platform for Intelligent, Autonomous Control of Hyper-Redundant Modular Robotic Systems using Simultaneous Localization and Mapping**
Puneeth Naga Sai Krishna Meruva, 16, Homestead High School, Fort Wayne, Indiana

Team Second Award of $400 for each team member

ME307 **A Novel Hybrid Non-invasive Clinical-Signal Processing Technique as Biomarker of Atrial Fibrillation**
Karthik Balaji Chakravarthy, 17, Beavercreek High School, Beavercreek, Ohio
Rohit Vallabh Chakravarthy, 15, Beavercreek High School, Beavercreek, Ohio

Third Award of $350

CS019 **Panthera: Caching and Cache-based Scheduling in Distributed Computing Systems**
Dhaivat Nitin Pandya, 16, Appleton North High School, Appleton, Wisconsin

Each winner will receive a framed certificate, and a one-year free subscription to the Computer Society magazine of their choice. Winners are announced on the Computer Society's website and via social media.

Intel® Open Source Technology Center

The Intel® Open Source Technology Center (OTC) is a leader in open source development with a mission to deliver operating systems products and enable our hardware in operating systems/open source software to create a continuous stream of technology innovation that unlocks the potential of Intel hardware and creates software business opportunities. The OTC will present the Intel® Open Source Technology Awards to the best use of open source technology or software.

First Award of $4000

CS074 **Indium: Using Novel Machine Learning Algorithms to Develop a Nondisease-specific Personalized Medicine Engine**
Yousuf Mounir Soliman, 17, Canyon Crest Academy, San Diego, California

Honorable Mention of $500

CS038 **Come Code with Codester: A Novel Educational App that Teaches Computer Science**
Gili Rusak, 17, Shaker High School, Latham, New York

CS065 **Search Engine to Map FDA Approved Drugs to Diseases Based on Microarray Data Mined from GEO**
Axel Stephan Feldmann, 17, Hunter College High School, New York, New York

The finalists are selected for their commitment to innovation in tackling challenging STEM-related questions, using authentic research practices, and creating solutions to the problems of tomorrow.

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

EE093 **Cube Satellites: Miniature Satellite Design and Operations for Pulsed Plasma System Applications**
Matthew Hileman, 16, The Classical Academy, College Pathways, Colorado Springs, Colorado

Certificate of Honorable Mention

CS031 **Train the Artificial Brain II: Computer-Aided Diagnosis and Treatment Plan of Alzheimer's Disease using Neural Networks**
Roma Vivek Pradhan, 17, Friendswood High School, Friendswood, Texas

CS084 **Voice Integrated Development Environment for People Who Are Blind, Myopia Affected or Have RSI**
Diana Marusic, 16, Theoretical Lyceum "Ion Creanga," Chisinau, Republic of Moldova

EE061 **Electromagnetic Tire Propulsion System**
Alexander William Beall, 17, Brunswick High School, Brunswick, Maryland

EE082 **Development of a Teleoperation Robot**
Mina Fahmi Fahmi, 17, Great Mills High School, Great Mills, Maryland

EN012 **The VP (Ventriculoperitoneal) Shunt Circuit**
Jennifer Lauren Cramer, 18, West Linn High School, West Linn, Oregon

ET044 **The Cooling of Solar Panels to Increase Power Output**
Christopher Rafael Botello, 15, John Jay High School, San Antonio, Texas

ET045 **Optimizing the Utilization of Wind Energy with an Alternative Engineering Design: A Horizontal Dual Motor Turbine, Phase II**
Caid Lunt, 17, Weber High School, Pleasant View, Utah

ET062 **Cones, Chutes, and Coils: Novel Proposals to Ebb Wingtip Vortices**
Loren J. Newton, 16, La Sierra High School, Riverside, California

ET065 **Rain Power**
Michael Jose Lopez Chiesa, 18, Saint Mary's Ryken High School, Leonardtown, Maryland

The International Council on Systems Engineering (INCOSE) is a not-for-profit membership organization founded in 1990. Our mission is to share, promote and advance the best of systems engineering from across the globe for the benefit of humanity and the planet.

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

EE078 **An Innovative Approach to Improve Spin Polarization in Co2FeAl0.5Si0.5 Thin Films for Spin Transport Electronics**
Sarah Nicole Galvin, 18, Corona del Sol High School, Tempe, Arizona

The award of $3,000 will go a the winning student/team project in Computer Engineering; a subcategory of Electrical and Mechanical Engineering, 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.

Trip to attend the Taiwan International Science Fair

EA001 **Lunar Tide Contribution to Thermosphere Weather**
Jesse Tan Zhang, 16, Fairview High School, Boulder, Colorado

EA015 **Geographic Belts for Hurricane Landfall Location Prediction**
William Wu, 17, Clear Lake High School, Houston, Texas

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 on Renewable Energy at the 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.

First Award of $3,000

EE064 **The Hollow Flashlights: Head and Hand**
Ann Stasia Makosinski, 16, Saint Michaels University School, Victoria, Canada

Second Award of $2,500

ET047 **Fun in the Sun! Increasing Grätzel Cell Efficiency Using Diatomaceous Earth**
Meagan Ann Fabel, 18, Walkerville Collegiate Institute, Windsor, Canada

Third Award of $2,000

ET057 **Wave-Powered Desalinator**
Mykhailo Lytovchenko, 16, Dnipropetrovsk Chemical Ecological Lyceum, Dnipropetrovsk, Ukraine

Fourth Award of $1,500

ET042 **Bumping & Reversing Wave Energy Generating System (BRES): Energy Generating System with Often Wasted Wave by Applying Principle of Interference and Rip Current**
Chan Lee, 16, Kyunggi High School, Seoul, South Korea

Fifth Award of $1,000

ET313 **Working of Wind Turbine with Low Air Pressure**
Sana Batool, 15, Punjab Daanish Girls School, Hasilpur, Pakistan
Shazia Bibi, 15, Punjab Daanish Girls School, Hasilpur, Pakistan
Iqra Irshad, 15, Punjab Daanish Girls School, Hasilpur, Pakistan

Monsanto Company

Monsanto is focused on empowering farmers—large and small—to produce more from their land while conserving more of our world's natural resources such as water and energy. We do this with our leading seed brands in crops like corn, cotton, oilseeds and fruits and vegetables. We also produce leading in-the-seed trait technologies for farmers, which are aimed at protecting their yield, supporting their on-farm efficiency and reducing their on-farm costs.

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

PS013 **Mechanistic Characterization of a Transcription Factor bZIP16 in Regulating Arabidopsis Flowering Pathways**
Yi-Hsuan Huang, 17, Taipei Municipal Jianguo High School, Taipei City, Chinese Taipei

Second Award of $1,500

PS026 **The Effect of Nitrogen-Rich Fertilizers on the Growth and Yield of Cotton Plants**
Lindsay M. Northcut, 18, Christ the King Cathedral School, Lubbock, Texas

Third Award of $1,000

PS043 **An Eco-friendly RNA Interference-based Insect Control for Management of Citrus Greening Disease using a Model System**
Saumya R. Keremane, 17, Martin Luther King High School, Riverside, California

The first and second placed 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
The Society 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

MA001 **A Novel Mathematical Simulation to Study the Dynamics of CD4 Cells, CD8 Cells, and HIV Viral Load**
Nirali Kunjan Thakor, 16, Shepton High School, Plano, Texas

MA008 **Hybridized Characteristic 3 Galois Field Arithmetic for Elliptic Curve Cryptography, Phase III**
Vinay Sridhar Iyengar, 18, Oregon Episcopal School, Portland, Oregon

Second Award of $1,000

CS053 **Indoor Navigation with Maximum Likelihood Classification of Wi-Fi Fingerprints**
Noah Christian Pritt, 17, Pritt Home School, Walkersville, Maryland

MA013 **Weighted Catalan Numbers and Their Divisibility Properties**
Sarah Lee Shader, 18, Laramie High School, Laramie, Wyoming

MA037 **Winning the War against Hackers: A Hybrid Asymmetric Cryptographic Algorithm for Safe and Secure Data**
Sasank Venkata Vishnubhatla, 16, duPont Manual High School, Louisville, Kentucky

Winners will receive a certificate and information about joining Mu Alpha Theta.

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

EN011 **The Fabrication and Characterization of Short and Long Term Memory Proton Induced Thin Film Synaptic Transistors**
Harsha Sudarsan Uppili, 18, Oregon Episcopal School, Portland, Oregon

Second Award of $2,000

CH022 **Electronic Tongue: Tastes of Toxic Metal Ions in Water**
Seung Hye (Beatrice) Choi, 15, University High School, Fresno, California

ET026 **Next Generation Supercapacitor for Ultra-Fast Energy Harvesting**
Swetha Vanathy Shutthanandan, 16, Richland High School, Richland, Washington

PH007 **Rocks of the Rainbow: Asteroid Classification Using SDSS Filters**
Stephanie Hiromi Spear, 16, Henry J Kaiser High School, Honolulu, Hawaii

Third Award of $1,000

BE015 **Role of Somatostatin Interneurons in Alzheimer's Disease**
Divya Koyyalagunta, 18, Clear Lake High School, Houston, Texas

CS046 **What's Your Problem? Automatically Summarizing Scientific Research with Open Problems**
Cassidy Laidlaw, 17, Barrington High School, Barrington, Rhode Island

EA001 **Lunar Tide Contribution to Thermosphere Weather**
Jesse Tan Zhang, 16, Fairview High School, Boulder, Colorado

EE025 **Personal Physiological Sensor Network Device**
Marek Novak, 19, Gymnazium Ceske Budejovice, Jirovcova 8, Ceske Budejovice, Czech Republic

EE064 **The Hollow Flashlights: Head and Hand**
Ann Stasia Makosinski, 16, Saint Michaels University School, Victoria, Canada

EM028 **Improving Seawater Membrane Distillation: The Development of Carbon Nanotube-coated Nickel Hollow Fiber Membranes**
Farah Essam Almulla, 17, Dhahran Ahliyya Schools, Dammam, Saudi Arabia

EV018 **Determination of Factors that Impact Clearance of Suspended Particulate Matter (Dust) in Air**
Alanna M. Bram, 16, John Marshall High School, Rochester, Minnesota

ME034 **Novel Single-Cell Screening: Optimized Droplet-Based Microfluidics for High-Throughput Screening of Adherent Cells**
Jason Shao Cui, 18, Langley High School, McLean, Virginia

PH044 **Fabricating an Artificial Nose using Mesoporous Photonic Crystals**
Achal James Fernando-Peiris, 16, Mount Vernon High School, Mount Vernon, Ohio

PH052 **Achieving Net Gain Nuclear Fusion in Microcapsules by Coupling Sonoluminescence and Magnetic Compression**
Raghu Vamsi Dhara, 18, Mission San Jose High School, Fremont, California

First Award of $5,000

CB043 **A Novel Approach for Metastatic Breast Cancer Therapy: Pharmacological Inhibition of EZH2 Histone Methyl Transferase Activity Suppresses Cancer Stem Cells and Induces Epithelial Phenotype**
Sara Sakowitz, 18, The Brearley School, New York, New York

Second Award of $2,000

CB029 **Generating iPSCs from Human Adipocytes for Differentiation into Nociceptive Neurons**
Elizabeth Boyle Sobolik, 16, Sleepy Hollow High School, Sleepy Hollow, New York

Third Award of $1,000

ME020 **Development of a Novel Blood-Based Diagnostic for Canine Lymphosarcoma**
Golda R. Shaw, 17, George M Steinbrenner High School, Lutz, Florida

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

EV040 **Assessment of Thirdhand Exposure to Nicotine from Electronic Cigarettes**
Lily Wei Lee, 18, Stuyvesant High School, Manhattan, New York

Second Award of $1,500

BI052 **Computational Analysis of the GABA(A) Receptor**
Aakash Jain, 18, Brophy College Preparatory, Phoenix, Arizona

Third Award of $1,000

BE304 **Capacity Limits of Working Memory: The Impact of Multitasking on Cognitive Control and Emotion Recognition in the Adolescent Mind**
Alexandra Ulmer, 17, Oregon Episcopal School, Portland, Oregon
Sarayu Caulfield, 16, Oregon Episcopal School, Portland, Oregon

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.

EA015 **Geographic Belts for Hurricane Landfall Location Prediction**
William Wu, 17, Clear Lake High School, Houston, Texas

Award of $500

EA001 **Lunar Tide Contribution to Thermosphere Weather**
Jesse Tan Zhang, 16, Fairview High School, Boulder, Colorado

Alternate

EV036 **Monitoring Ocean Microscopic Organic Material: Assessing Large-Scale Ecological Disruption on Annual Chl-a, POC, and PIC Fluctuation Equilibrium**
Jinsong (Tony) Yan, 17, Cleveland High School, Portland, Oregon

PH075 **Predicting the Strength of Solar Flares using Sunspot Characteristics**
Kayla Lokelani Ishida, 16, Waimea High School, Waimea, 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.

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

The Chief of Naval Research Scholarship Award of 10,000

EN025 **Growing Spine Implant and Test Method**
Harry Paul, 17, Paul D. Schreiber High School, Port Washington, New York

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 memento.

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

CH030 **The Effectiveness of Guanidine Functionalized Polymers in Carbon Dioxide Capture and Utilization**
Sarah Hasan Al Abdullatif, 17, Dhahran Ahliyya Schools, Dammam, Saudi Arabia

CS018 **Analyzing and Preventing Quick Response Code-based Malware and Phishing Attacks for Smartphones**
Alisha Saxena, 17, Interlake High School, Bellevue, Washington

EM002 **Solar Hot Air Generator Construction and Applicability**
Daniel Cosovanu, 18, Tomsa Voda Technological High School, Solca, Romania

EN023 **Multi-layered Phytopigments: Promising Alternative Materials for Solar Cell Development**
Debapratim Jana, 17, South Point High School, Kolkata, India

ET056 **Infrared Alignment and Photon Densification Apparatus for Energy Optimization**
Andrew J. O'Neill, 18, Suncoast Community High School, Riviera Beach, Florida

ME077 **A Wearable Ultrasonic Device for the Early Detection of Tumor Recurrence**

Milan Satch Gambhir, 15, Bellarmine College Preparatory, San Jose, California

PH081 **The Leidenpump: A Non-Mechanical Means of Fluid Delivery**
John Chapman Alexander Caddell, 16, Stevenson School, Pebble Beach, California

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

MI005 **The Conjugative Plasmid RK2 as a Delivery System for Artificial AnatheriaH Genes: A Novel Synthetic Biology Alternative to Traditional Antibiotics**
Logan Collins, 17, Fairview High School, Boulder, Colorado

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

BE030 **Perception of Facial Expression of Emotion**
Danila Alferov, 16, A.B. Lucas Secondary School, London, Canada

Second Award of $1,500

BE038 **Healthy Youth: Effect of Physical Activity and Sleep Patterns on Physical and Mental Well-Being in Adolescents**
Grace Hwang, 16, Hershey High School, Hershey, Pennsylvania

Third Award of $1,000

BE024 **"Are You Sure?" A Multi-Factor Analysis: Are Eyewitness Testimonies Dooming the Innocent?**
Ansley Elizabeth Lynn, 16, Glenwood School, Smiths, Alabama

All winners will receive a Psi Chi Certificate of Recognition.

Ricoh Americas Corporation

Ricoh Americas Corporation is a leading provider of document solutions whose integrated hardware and software products help businesses share information efficiently. 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. As a leader in its industry, Ricoh is consistently ranked high among the world's corporations for successfully balancing profit with environmental responsibility.

Ricoh Sustainable Development Award of $12,500

ET055 **Employing in situ Generated Peracetic Acid and Fungal Biosynthesis to Produce Biofuels**
Jonah Zachariah Butler, 16, Sibley East High School, Arlington, Minnesota

PS301 **Enhanced Third-Generation Biofuel Production from Genetically Modified Algae**
Wenjia (Dara) Li, 16, Jasper High School, Plano, Texas
Anoop Vemulapalli, 16, Plano West Senior High School, Plano, Texas

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 $2000

PH302 **Observational Detection of Solar g-mode Oscillations Using Doppler Velocity Signals**
Min Sung Kim, 16, Maui High School, Kahului, Hawaii
Matthew Thomas Sturm, 17, Maui High School, Kahului, Hawaii

First Life Science Award of $2,000

MI310 **Production of Bioplastic by a Bacterium Isolated from Waste Treatment Facility (from Lignocellulosic Glucose, Abundant Sucrose, Byproduct of Biodiesel & Spent Coffee Grounds Extract)**
Gi Na Lee, 18, Korean Minjok Leadership Academy, Hoengseong-gun, South Korea
Dong Il Je, 17, Korean Minjok Leadership Academy, Hoengseong-gun, South Korea

Second Physical Science Award of $1000

PH307 **The Dark Matter inside of Early Type Galaxies**

Angel Alejandro Martinez Jimenez, 18, Preparatoria del Tecnológico de Monterrey, Guadalajara campus, Zapopan, Mexico
Omar Perez Alvarado, 17, Preparatoria del Tecnológico de Monterrey Guadalajara campus, Zapopan, Mexico

Second Life Science Award of $1,000

BI310 **Novel Analysis of Oxidative Stress and Inflammation on Amyloid-beta, Tau, and Motility in Transgenic C. elegans models: Targeting Potential Therapeutics for Alzheimer's Disease**
Kimberly Alexis Te, 16, Manhasset High School, Manhasset, New York
Austen Gregory Te, 17, Manhasset High School, Manhasset, New York
Jinyu Wu, 17, Manhasset High School, Manhasset, New York

ME316 **Walnut: Sustainable Solution to Halitosis**
Eveshorhema Sophia Samuel-Alli, 14, Doregos Private Academy, Lagos, Nigeria
Ibukunoluwa Ruth Oladeinde, 15, Doregos Private Academy, Lagos, Nigeria

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

EE090 **To Design and Manufacture a Device to Maximize the Performance of Rowers**
Conor Richard Foy, 17, Colaiste Chiarain, Limerick, Ireland

Second Award of $1,500

EN034 **Study of Properties of Aluminum Wires Treated with Nanoparticles of MoB2**
Michelle Dyane Marrero-Garcia, 15, Eugenio Maria de Hostos High School, Mayaguez, Puerto Rico

Third Award of $1000

EN021 **The Effects of Barefoot and Shod Running on Risk of Injury in High School, Female, Recreational Runners**
Megan Boyer, 17, Manchester High School, Manchester, Connecticut

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

ET062 **Cones, Chutes, and Coils: Novel Proposals to Ebb Wingtip Vortices**
Loren J. Newton, 16, La Sierra High School, Riverside, California

Second Award of $500

ET036 **Inflatable Airplane Design and Optimization for Low Reynolds Numbers**
Scott Alexander Bollt, 16, Potsdam High School, Potsdam, New York

Third Award of $300

PH030 **The Optimization of Rocket Nozzle Performance**
Jamie Christine McCullough, 17, Friendswood High School, Friendswood, Texas

Certificate of Honorable Mention

EE003 **Vertical Axis Wind Turbine Farm Configuration Efficiency Based on Schools of Fish in Nature**
Yenny Dieguez, 16, Miami Lakes Educational Center, Miami Lakes, Florida

EE011 **Aircraft Propeller Noise Reduction Using Owl Feather Inspired Notching**
David Alexander Ferrill, Jr., 16, John Jay High School, San Antonio, Texas

PH078 **A Mathematical Analysis of the Wright Brother's Wind Tunnel Tests**
Christopher Glenn Romanoski, 17, Oak Ridge High School, Oak Ridge, Tennessee

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, websites, and educational opportunities.

Distinguished Achievement Award of $2,500 and a trip to the SEG International Exposition and Annual Meeting.

EA007 **Data Sonification with the Seismic Signature of Ocean Surf**
Yongpeng Tang, 17, Smithtown High School East, St. James, New York

Award of Merit of $1,000

EA008 **Tsunami Mitigation as a Function of Alterations in Bottom Friction**
Naomi Benson, 17, Deerfield High School, Deerfield, Illinois

MA047 **Applying Bayes' Theorem to DNA Sequence for Identification of Pathogenic Bacteria**
Min Jean Cho, 16, Torrey Pines High School, San Diego, California

Award of Merit of $500

CS036 **A Novel Filter for Tracking Trends in Noisy Real-Time Data**
Michael William Litt, 14, Orange High School, Pepper Pike, Ohio

EA010 **An Optimized Analysis of Wind Flows in the Urban Environment and the Identification of Feasible Building Augmented Wind Turbine Sites**
Ben Ross, 18, Ossining High School, Ossining, New York

PH077 **Measuring Water Waves**
Daniel Pflueger, 19, Gymnasium Johanneum Lueneburg, Lueneburg, Germany

Certificate of Honorable Mention

CS012 **Using Artificial Intelligence and Computer Vision in Creating an Operating System for Head-Mounted Displays**
Nebras Nabil Djemel, 18, Pioneer High School of Gabes, Gabes, Tunisia

EA012 **Using an Underwater Trench to Limit the Energy of a Tsunami**
Boyd Robert Kane, 16, Bishops (Diocesan College), Cape Town, South Africa

SpaceX

SpaceX designs, manufactures, and launches the world's most advanced rockets and spacecraft. The company was founded in 2002 by Elon Musk to revolutionize space transportation, with the ultimate goal of enabling people to live on other planets. Today, SpaceX is advancing the boundaries of space technology through its Falcon launch vehicles and Dragon spacecraft.

Engineering the Future Awards of $2,000 each

EE320 **Ice Bot: A Deep Sea Diving Apparatus**
Mirae Leigh Parker, 18, West High School, Salt Lake City, Utah
Ema Linnea Parker, 16, Wasatch Academy, Mount Pleasant, Utah

EN017 **Transformer Clepsydron: Deployable Support Framework with Varying Direction of Unfolding**

Temur Chichua, 16, Tbilisi #4 Public School, Tbilisi, Georgia

PH048 **Optimizing the Accuracy and Precision of Asteroid Orbital Determination: A Novel Approach**
Amara McCune, 17, Stoughton High School, Stoughton, Wisconsin

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 $2,500

EE064 **The Hollow Flashlights: Head and Hand**
Ann Stasia Makosinski, 16, Saint Michaels University School, Victoria, Canada

Second Award of $1,500

PH070 **IR against Piracy**
Hadaia Azad Ezzulddin, 14, Nilufer Girls Secondary School, Erbil, Iraq

Third Award of $1,000

PH019 **Novel Automated Next-Generation Multijunction Quantum Dot Solar Panel Designs Using Monte Carlo-Based Modeling**
Valerie S. Ding, 17, Catlin Gabel School, Portland, Oregon

Honorable Mention

CS016 **A New Optical Computing Method with Combination of Colored Lights Realizing Balanced Ternary Computation**
Yue Yao, 16, High School Affiliated to Shanghai Jiao Tong University, JiaDing Campus, Shanghai, China

EE018 **Principles of Electrowetting on Liquid Prism Beam-Steering Module**
Christopher Y. Shen, 17, Texas Academy of Mathematics and Science, Denton, Texas

PH044 **Fabricating an Artificial Nose using Mesoporous Photonic Crystals**
Achal James Fernando-Peiris, 16, Mount Vernon High School, Mount Vernon, Ohio

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 in Africa, Asia, Middle East, Latin America and Europe. USAID seeks to extend a helping hand to those people overseas struggling to make a better life, recover from a disaster, or striving to live in a free and democratic country.

Development Focus Award of $10,000

EE029 **Versatile Field Construction Machine for Paddy Cultivation**
Namal Namal Udara Piyasiri, 18, Tabuththegama Central College, Thambuththegama, Sri Lanka

EN312 **Green Refrigerant Box**
Muhtaza Aziziya Syafiq, 16, Sma Negeri 2 Sekayu, Musi Banyuasin, Indonesia
Anjani Rahma Putri, 17, Sma Negeri 2 Sekayu, Musi Banyuasin, Indonesia

ET046 **MFCs Reloaded: A Novel Bio-Augmented Design to Enhance MFC Efficiency**
Dhuvarakesh Karthikeyan, 15, California High School, San Ramon, California

PS022 **Cellulose Binding Domains: Novel Implications in Agriculture and Biofuel Production**
Alon Millet, 16, Academy for the Advancement of Science and Technology, Hackensack, New Jersey

United Airlines Foundation

For more than 60 years, the United Airlines Foundation has served as the charitable wing of United Airlines, Inc. The Foundation's International Program grants support science, technology, engineering and math (STEM) education initiatives. In addition, we support community service grants for arts and culture, health and environmental initiatives.

First Place Award of $5,000

EE044 **The Intelligent Energy Saving Power Strip**
Neil Fair, 17, Pretoria Boys High School, Pretoria, South Africa

Second Award of $3,000

ET033 **Algae....the Greener Fuel, Year Three**
Alexandra K. Gabrielski, 15, Viera High School, Viera, Florida

ET055 **Employing in situ Generated Peracetic Acid and Fungal Biosynthesis to Produce Biofuels**
Jonah Zachariah Butler, 16, Sibley East High School, Arlington, Minnesota

Third Award of $1,500

EA015 **Geographic Belts for Hurricane Landfall Location Prediction**
William Wu, 17, Clear Lake High School, Houston, Texas

EE032 **What Type of Wing Design Creates the Greatest Lift? "Dimpled Airfoil"**
Nathan Roy Martus, 16, Oakleaf High School, Orange Park, Florida

Fourth Award of $1,000

EM305 **Immediate Response System for Oil Spills**
Avi Dubovsky, 18, Ort "Psagot," Karmiel, Israel
Roey Shmuel Shafran, 17, Ort "Psagot," Karmiel, Israel
Tamer Hamoud, 17, Ort "Psagot," Karmiel, Israel

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.

EM045 **Safe and Sound Housing: Lime/Fly Ash Papercrete as a Substitute for Adobe in Seismically-Active Regions in Developing Nations**
Miriam Terese Demasi, 15, Wheeling Park High School, Wheeling, West Virginia

Alternate trip winner

EV029 **Sustainable Water Purification System with UV Irradiation**
Hans Christian Pande, 17, Woods Cross High School, Woods Cross, Utah

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.

CH022 **Electronic Tongue: Tastes of Toxic Metal Ions in Water**
Seung Hye (Beatrice) Choi, 15, University High School, Fresno, California

CS009 **RNNScan: Eukaryotic Gene Finding via Hybrid Recurrent Neural Networks**
Anand Srinivasan, 17, Roswell High School, Roswell, Georgia

EE025 **Personal Physiological Sensor Network Device**
Marek Novak, 19, Gymnazium Ceske Budejovice, Jirovcova 8, Ceske Budejovice, Czech Republic

EN068 **Strongly Coupling the Electrical and Mechanical Dynamics of the Heartbeat in a Diffuse Interface Model**
Kevin K. Lee, 17, University High School, Irvine, California

ET005 **The Jerusalem Artichoke as a Perspective Renewable Fuel**
Lizaveta Salokhina, 16, Gymnasium No. 1 Zhodino, Zhodino, Belarus

ET066 **Quantification of the Effect of Contamination in Lithium-Air Batteries**
Emilia Wodzka, 19, Herlufsholm Kostskole og Gods, Næstved, Denmark

MA023 **The Speeds of Families of Intersection Graphs**
Jessica Shi, 17, Montgomery Blair High School, Silver Spring, Maryland

PH052 **Achieving Net Gain Nuclear Fusion in Microcapsules by Coupling Sonoluminescence and Magnetic Compression**
Raghu Vamsi Dhara, 18, Mission San Jose High School, Fremont, 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 2015. 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.

CB020 **Engineering a Novel CDH1 Fluorescent Protein Reporter Construct to Evaluate Cancer Cell Differentiation**
Gregory John Konar, 18, Massachusetts Academy of Math and Science at WPI, Worcester, Massachusetts

CH020 **Building a Library of Difluoro- and Trifluoro- Artemisinins, Year Two**
Shreya Sundaresh Ramayya, 16, Palos Verdes Peninsula, Rolling Hills Estates, California

CS073 **Semantic Multilayer SVM: Novel Artificial Intelligence and Computer Vision Applied to Prostate Cancer Grading and Breast Cancer Diagnosis**
William C. Hang, 16, Scripps Ranch High School, San Diego, California

ME009 **Seeking a Cure II: Targeting ERß in a Novel Cost-Effective Treatment for Ovarian Epithelial Cancer**
Jocelyn Elizabeth Hernandez, 17, STEM Academy at Robert E. Lee High School, San Antonio, Texas

MI013 **A Novel Response to Antibiotic Resistance: Application of Microparticles and AC Currents**
Pia Sen, 17, Liberal Arts and Science Academy High School, Austin, Texas

Scholarships are to be allocated toward tuition only and become effective upon enrollment in any undergraduate or first-professional program offered at University of the Sciences. Each scholarship is renewable for up to four years provided the recipient is enrolled as a full time undergraduate or first-professional student 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

BI007 **An in vitro Study of the Effectiveness of Cinnamon Compounds on the Degradation of Amyloid-B and Tau Protein in Alzheimer's Disease**
Natalie Elizabeth Barton, 17, Bayside High School, Palm Bay, Florida

BI011 **You Missed a Spot: Accuracy of Luminol Chemiluminescence to Detect Blood at a Crime Scene using Concealment Techniques and Measurements of False Positives**
Alexia Dean Benson, 15, Grove High School, Grove, Oklahoma

CS053 **Indoor Navigation with Maximum Likelihood Classification of Wi-Fi Fingerprints**
Noah Christian Pritt, 17, Pritt Home School, Walkersville, Maryland

EM045 **Safe and Sound Housing: Lime/Fly Ash Papercrete as a Substitute for Adobe in Seismically-Active Regions in Developing Nations**

Miriam Terese Demasi, 15, Wheeling Park High School, Wheeling, West Virginia

EM319 **A Greener Shade of Grey: The Effects of Fly Ash in Concrete, a Second Year Study**
Marygrace Summers Duggar, 17, Saint Joseph's Academy, Baton Rouge, Louisiana
Olivia Jane Guidry, 17, Saint Joseph's Academy, Baton Rouge, Louisiana

EN050 **iAid: A Novel Multimodal, Cloud-Based Navigation System for the Visually Impaired**
Alexander Matthew Deans, 17, Académie Ste Cécile International School, Windsor, Canada

ET017 **Using Piezoelectronics to Convert Energy from a Nontraditional Source: Vibration**
Travis Benjamin Lysaght, 16, Hicksville High School, Hicksville, Ohio

ET027 **Comparing Shroud Design on the Electrical Power Output of a Small-Scale Horizontal-Axis Wind Turbine**
Kelly Nicole Devens, 16, Roanoke Valley Governor's School for Science and Technology, Roanoke, Virginia

EV029 **Sustainable Water Purification System with UV Irradiation**
Hans Christian Pande, 17, Woods Cross High School, Woods Cross, Utah

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.

White House Presidential Fellow SmartAmerica Challenge

The goal of the SmartAmerica Challenge is to demonstrate the benefits that Cyber-Physical Systems can bring to American competitiveness, job growth, and our society. This award is presented to the best Intel ISEF project representing Cyber Physical Systems.

White House Presidential Inovation Fellow SmartAmerica Challenge Award

EE034 **Pneumatic Electromyographic Exoskeleton**
Conor James Maddry, 17, Langley High School, McLean, Virginia

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

Please go to Wolfram's SAO profile pages on the Society for Science & the Public web site https://apps2.societyforscience.org/intelisef2014/saodetail.cfm?AC=MATICA to learn more.

World Economic Forum
Invitation to the World Economic Forum Annual Meeting of New Champions 2014 in Tianjin, China, and to participate in our programming designed for our 2014 Young Scientists.

World Economic Forum Future Scientists Award

CS025 **Diagnosis of Abnormalities in 3-Dimensional Mammograms via an Artificial Neural Network**

Joshua Michael Zweig, 18, Commack High School, Commack, New York

EM027 **Don't Cry Over Spilled Oil!**
Nivatha Balendra, 18, Marianopolis College, Westmount, Canada

MA021 **On the Unique Roles of Neurocomputational States in Neocortical Circuits**
Archis Bhandarkar, 18, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

MI310 **Production of Bioplastic by a Bacterium Isolated from Waste Treatment Facility (from Lignocellulosic Glucose, Abundant Sucrose, Byproduct of Biodiesel & Spent Coffee Grounds Extract)**
Gi Na Lee, 18, Korean Minjok Leadership Academy, Hoengseong-gun, South Korea
Dong Il Je, 17, Korean Minjok Leadership Academy, Hoengseong-gun, South Korea

Students will also receive a World Economic Forum Swarovski crystal award, a waiver of participation fees for the 2014 Annual Meeting of New Champions, as well as all flights and accommodations.