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Intel ISEF 2016 Special Awards Ceremony

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May 12, 2016, Phoenix, AZ – Society for Science & the Public, in partnership with the Intel Foundation, announced Special Awards of the Intel ISEF 2016. Student winners are ninth through twelfth graders who earned the right to compete at the Intel ISEF 2016 by winning a top prize at a local, regional, state or national science fair.

Acoustical Society of America

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

First Award of $1,500

PHYS039   **Generation of Beat Sound of Korean Bell with a Bicycle Rim**

                    Kim Dae Hyun, 18, Pung Duck High School, Gyeonggi Province, South Korea

Second Award of $500

PHYS014T   **Acoustic Microfluidics with Tiny Droplets**

                    Adrian Lenkeit, 16, St. Michael Gymnasium, Bad Munstereifel, Germany

                    Jan Matthias Schafers, 17, St. Michael Gymnasium, Bad Munstereifel, Germany

Honorable Mention

EBED018   **Development of the First Ever Low-Cost Open-Source Hearing Test and Hearing Aid**

                    Mukund Venkatakrishnan, 16, duPont Manual High School, Louisville, Kentucky

ENBM023   **A Feasible Solution to High Frequency Loss Based on Transposing Fundamental Frequency**

                    Yiwei Song, 18, High School Affiliated to Fudan University, Shanghai, China

ENEV107T   **The Wobble: A Sustainable Noise Barrier Consisting of Noise Absorbing Materials and a Revolutionary Shape**

                    Marie-Anne Irene de Gier, 16, Atheneum College Hageveld, Heemstede, Netherlands

                    Bram Janssen, 15, Atheneum College Hageveld, Heemstede, Netherlands

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

BMED003   **The Effect of Bruxism on Mercury Leakage from Amalgam Restorations**

                Edwin Christopher Bodoni, 15, Cherry Creek High School, Greenwood Village, Colorado

Second Award of $1,000

BMED045   **Analysis of Tissue Transglutaminase as a Possible Indicator of Gluten Sensitivity in Human Saliva**

                Joseph Daniel Gresoi, 16, Conrad Weiser High School, Robesonia, Pennsylvania

Third Award of $500

TMED023   **Dental Whitening and Enamel Loss**

                Madeleine Maloof, 16, Presbyterian Ladies' College Sydney, Sydney, Australia

Alcoa Foundation

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

Sustainable Urban Design, First Award of $2,500

EGPH015   **Improving Energy Efficiency and Reducing Our Carbon Footprint: A Novel Approach for Fabricating Inexpensive Electrochromic Coatings for Smart Windows**

                Naveena Bontha, 16, Hanford High School, Richland, Washington

Sustainable Design In Transportation, First Award $2,500

ENMC022   **A Wing of the Future: Part III**

Trevor Michael Jordan, 18, Animas High School, Durango, Colorado

Sustainable Urban Design, Second Award of $1,500

EGPH029   **Self-Sustaining Streetlight Post**

Karlos Lenniel Nicolas Miranda Garces, 16, Adela Rolon Fuentes, Toa Alta, Puerto Rico

Sustainable Design In Transportation, Second Award $1,500

ENEV082   **An Innovative Approach to Vehicle Suspension: Creating Retrofit Dampers to Minimize Gasoline Consumption and Carbon Dioxide Emissions**

Pujan Sanjaykumar Patel, 16, Mayo High School, Rochester, Minnesota

Sustainable Urban Design, Third Award $1,000

EGCH052T   **Invisible Helios Power**

Maryam Fuad Bukhash, 17, Al Ittihad Private School - Jumeirah, Dubai, United Arab Emirates

Amna Mohammad Alhashmi, 17, Al Ittihad Private School - Jumeirah, Dubai, United Arab Emirates

Maryam Mohammad Alhashmi, 18, Al Ittihad Private School - Jumeirah, Dubai, United Arab Emirates

Sustainable Design In Transportation, Third Award of $1,000

ENMC009   **Prop-plane**

Aliaksei Barysevich, 17, Minsk State Regional Lyceum, Minsk, Belarus

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

American Association of Pharmaceutical Scientists

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

First Award of $2,000

BMED072 **Identification of Thymidine Kinase I as a Universal Cell Surface Target for Treating Cancer and Development of a Novel Antibody Drug Conjugate**

Michael Xiao, 18, Lone Peak High School, Highland, Utah

Second Award of $1,000

TMED006T **Rapamycin as a Novel Therapeutic for Alzheimer's Disease: Prevention Assessed through Neuroimaging**

Amy C. Wang, 16, Paul Laurence Dunbar High School, Lexington, Kentucky

David Wang Ma, 16, Paul Laurence Dunbar High School, Lexington, Kentucky

Third Award of $500

TMED028 **Novel TolC Inhibitors: Computer-Aided Drug Discovery for MDR-Conferring Efflux Pumps**

Shayan Daniel Farmand, 16, Methacton High School, Eagleville, Pennsylvania

Fourth Award of $250

CBIO037 **Predictive Modeling of Optimal Cancer Therapies**

Joyce Xu, 17, Fairview High School, Boulder, Colorado

TMED055 **Design and Evaluation of Betulin-Based Anti-Cancer Compounds**

Anjali Chakradhar, 14, High Technology High School, Lincroft, New Jersey

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

American Chemical Society

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

First Award of $4,000

EGCH014   **Fabrication, Characterization, and Modeling of a Biodegradable Battery for Transient Electronics**

         Vineet Edupuganti, 16, Oregon Episcopal School, Portland, Oregon

Second Award of $3,000

EGCH039   **Novel Brine Water-Graphene Based Energy Generation: Engineering the Endless Cycle**

         Hannah Meiseles, 16, The Woodlands College Park High School, The Woodlands, Texas

Third Award of $2,000

CHEM031   **The Testing of the Mpemba Effect at Varying Salinities**

         Samuel Allen Senegal, II, 16, Ovey Comeaux High School, Lafayette, Louisiana

Fourth Award of $1,000

BCHM018   **Modeling the Structures of Disease-Causing ACVR1 Mutants Using Ab Initio Methods**

         Nicholas Joseph Freitas, 17, Massachusetts Academy of Math and Science, Worcester, Massachusetts

Certificate of Honorable Mention

BCHM016T   **New Approach to Prevent Monocyte Dysfunction Associated with Metabolic Diseases**

Ruben Isaiah Dicker, 18, Health Careers High School, San Antonio, Texas

Shayan Mohammad Sarrami, 17, Health Careers High School, San Antonio, Texas

CHEM005   **Plasmatic Events during Electrolysis of Aqueous Solutions**

Benedikt Pintat, 19, Walther-Rathenau-Gymnasium, Bitterfeld-Wolfen, Germany

CHEM019   **Time and Atom Economy Method for the Synthesis of (1-6) Linked Glycosides**

Uliana Aladysheva, 17, State Budgetary Educational Institution of Moscow "Lyceum-Gymnasium Complex in the South East" Moscow Chemical Lyceum No1303, Moscow, Russian Federation

CHEM022   **Immobilization of Glycans on Silicon Substrates for Diagnostic Microarrays**

ShuYi Jia, 19, National Junior College, Singapore, Singapore

CHEM029   **UV-Light Sensitive Transparent Organic Solar Cells**

Cheng-Pei Lin, 17, Taipei First Girls High School, Taipei City, Taiwan

EGCH017   **Revolutionizing Bioethanol Production: Genetic Engineering of S. cerevisiae for the Single Step Conversion of Biomass to Bioethanol**

Srinath Vijay Seshadri, 16, Village Academy Upper School, Powell, Ohio

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

American Committee for the Weizmann Institute of Science

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

Alternate for trip

BCHM014   **Structural and Kinetic Analysis of Methicillin-resistant Staphylococcus aureus MenE, an acyl-CoA Synthetase of the Bacterial Menaquinone Biosynthesis Pathway as a Novel Antibacterial Target**

         Kameron Sedigh, 17, Kings Park High School, Kings Park, New York

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

CELL013   **Novel Inhibitors of Glucose Transporter 1 (GLUT1) for Cancer**

         Brian Jason Du, 17, Plano West Senior High School, Plano, Texas

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 $1,250; a second award of $1000; and a third award of $500.

First Award of $1,250

EAEV058   **Testing the Water Quality of Karst Outflows in the Ozarks**

         Mandolin Harris, 18, Arkansas School for Mathematics, Sciences and the Arts, Hot Springs, Arkansas

Second Award of $1000

EAEV055T   **Designing a Program to Investigate Correlation between Rising Sea Levels and Water Loss from Antarctica and Greenland**

         Terence Michael Johnson, 16, Daramalan College, Canberra, Australia

         Lachlan Wilson, 16, Daramalan College, Canberra, Australia

Third Award of $500

EAEV079   **Quakify: A Low-Cost, Crowdsourced, Real-Time Solution to Earthquake Early Warning**

                 Harish Palani, 16, Sunset High School, Portland, Oregon

Each of the American Geosciences Institute Intel ISEF winners will receive a certificate and an AIG publication.

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

CHEM050   **The Cancer Breathalyzer, Part II: Chemical Strips that Detect Chemicals in Breast, Colorectal, and Prostate Cancer Breathprint**

                 Jon Tobin Goodart, 18, Grants High School, Grants, New Mexico

EAEV066   **Identifying Greenhouse Gas Hotspots in Megacities**

                 Siona Prasad, 15, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

Second Award of $250

EGPH008   **Development of a High Efficiency Solar Cell Using Adaptive Self-Cooling**

                 Tiasha Joardar, 17, Plano West Senior High School, Plano, Texas

ENMC040T   **Visual Inspection Fasteners: Self-diagnostic Bolt, Nut & Washer**

                 Wenjin Zhu, 18, Sheng Kung Hui Li Ping Secondary School, Hong Kong, China, Hong Kong Special Administrative Region

                 Man Yin Kan, 16, S.K.H Li Ping Secondary School, Hong Kong, China, Hong Kong Special Administrative Region

                 Mei Ho , Kay Ng, 16, Sheng Kung Hui Li Ping Secondary School, HONG KONG, China, Hong Kong Special Administrative Region

American Mathematical Society

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

First Award of $2,000

MATH018   **Embedding a Flat Torus in Three Dimensional Euclidean Space**

Stephanie Shi-Ning Mui, 16, Oakton High School, Vienna, Virginia

Second Award of $1,000

MATH005   **Triangular Circle in a Square**

Ekaterina Lebedeva, 16, Municipal Lyceum #40, Nizhny Novgorod, Russian Federation

MATH020   **Towards Common Algorithm for Computation of Polygonal Numbers**

Phuong Anh Tran, 16, Cherkasy Physics and Mathematics Lyceum, Cherkasy, Ukraine

Third Award of $500

MATH006   **Stochastic Analysis in Biomedical Engineering: Identifying Acute Myocardial Infarction**

Muhammad Ugur oglu Abdulla, 16, West Shore Junior/Senior High School, Melbourne, Florida

MATH010   **Nested Eggs: Where Brianchon, Pascal and Poncelet Meet**

Pei-Hsuan Chang, 17, Taipei Municipal LiShan High School, Taipei City, Chinese Taipei

MATH021   **The Rolling Lamp Problem and Related Link Structure**

                Qingxuan Jiang, 17, Shanghai High School, Shanghai, China

MATH027T   **The Future of Energy: Spidronized Solar Cells**

                Osvaldo J. Pagan, 17, Dr. Carlos Gonzalez High School, Aguada, Puerto Rico

                Dariannette Valentin, 17, Dr. Carlos Gonzalez High School, Aguada, Puerto Rico

Certificate of Honorable Mention

MATH001   **On the Coverings of {0,1,2 }^n with Minimal Cardinality**

                Dona-Maria Radoslavova Ivanova, 17, Baba Tonka High School of Mathematics, Ruse, Bulgaria

MATH015   **The Investigation of an Impartial Normal Play Game**

                Emil Sebastian Geisler, 14, Bountiful High School, Bountiful, Utah

MATH030   **Graph Rigidity in L1 and Kusner's Conjecture**

                Roy Jacobson, 18, Israel Arts and Science Academy, Jerusalem, Israel

MATH036   **Cosheaf Theoretical Constructions in Networks and Persistent Homology**

                Karthik Yegnesh, 16, Methacton High School, Eagleville, Pennsylvania

MATH037   **Enhancement RSA Security using Polynomials and Rabin Functions**

                Shaden Naif Alshammari, 17, 19th HighSchool, Hail, Saudi Arabia

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

American Meteorological Society

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

First Award of $2,000

EAEV024T   **Experimental Simulation of Cellular Convection with Miso Soup**

Yu-Hung Chen, 18, The Affiliated Senior High School of National Taiwan Normal University, Taipei, Taiwan, Chinese Taipei

Shih-Hao Chen, 18, The Affiliated Senior High School of National Taiwan Normal University, Taipei, Taiwan, Chinese Taipei

Second Award of $1,000

ENMC036   **Understanding Heat Transfer Mechanisms in Forest Fire Spread: Convection, Radiation, Fluid Dynamics, and Their Applications for Firefighter Protection in a High Temperature Fine Fuel Particle Environment**

Kyra Leigh Seevers, 17, Paul Laurence Dunbar High School, Lexington, Kentucky

Third Award of $500

EAEV027   **Analysis of the Relationship between Climate and Pinus elliottii Ring Chronologies, Year Two**

Carlie Taylor, 16, The Villages High School, The Villages, Florida

Certificate of Honorable Mention

EAEV045   **Seasonal Variation of the Lower Atmosphere**

Adeline Violet Grace Hahn, 14, Fairfield High School, Fairfield, Montana

EAEV046   **Calibration Methodology for Vertical Inversion Atmospheric Measurement System**

Elizabeth Frances Dowell, 16, Northern Utah Acadamy for Math, Engineering and Science, Layton, Utah

EAEV066   **Identifying Greenhouse Gas Hotspots in Megacities**

Siona Prasad, 15, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

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

TMED029   **The Effect of the Plant Hormone Abscisic Acid on the Sprouting of Blood Vessels in vitro**

Julienne Chaqour, 15, High Technology High School, Lincroft, New Jersey

Second Award of $1,000

BMED064   **The Effects of Near Infrared Light and Curcumin on Wound Healing and Tissue Regeneration in Girardia tigrina**

Aarushi Iris Pendharkar, 14, Massachusetts Academy of Math and Science, Worcester, Massachusetts

Third Award of $500

ANIM045   **Using Pharmacogenetics to Determine the Role of the Orexin System in Panic-Associated Behavior and Physiology**

Asmaa Mahoui, 16, Eman Schools, Fishers, Indiana

APS Exceptional Science Award for $500

BCHM033   **Caffeine: The Effects on Physical and Mental Alertness**

Roman Knudsvig, 17, Berthold High School, Berthold, North Dakota

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 over 122,500 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

BEHA012   **MeEmo: An Autism Destroying Avatar, Year Two**

Sapna K. Patel, 15, Oviedo High School, Oviedo, Florida

Second Award of $1,000

BEHA015   **Redefining the Neurological Basis of Fluid Intelligence: Investigating Connection Strength and Network Strength of Resting State Functional Connectivity**

Jessica Li Huang, 17, Jericho High School, Jericho, New York

Third Award of $500

BEHA020   **Making the Mind Matter: Stress Mindset Effects on Sleep Quality, Stress Response, Emotion and Cognition in the Developing Adolescent Brain and the Role of the Prefrontal-Amygdala Circuit**

Kashfia Nehrin Rahman, 15, Brookings High School, Brookings, South Dakota

BEHA026   **Individual Neural Network Activity Patterns Underlie Complex Cognitive Task Performance: An fMRI Study with Clinical Implications**

Sarah Fendrich, 17, Ossining High School, Ossining, New York

BEHA035   **CRANIOMETRIX: Developing Innovative Cognitive Tests to Diagnose Alzheimer's Early, Year Four**

Nikhil Sanjay Patel, 16, Oviedo High School, Oviedo, Florida

BEHA043 **A Study of Biases in Perception**

Sophia Alexandra Hawley, 14, West Salem High School, Salem, Oregon

BEHA047T **Cognitive and Brain Measures in Middle-Aged Autistic Spectrum Disorder Individuals: Where Are the Differences?**

Divya Vatsa, 17, BASIS Scottsdale, Scottsdale, Arizona

Emily Wood, 17, Xavier College Preparatory, Phoenix, Arizona

Award recipients receive a scholarship, 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

PLNT004 **Soil Amendment Optimization, Phase III: Nutrient Analysis of Biochar and Hydrophilic Polymer Enriched Soils in a Simulated Large-Scale Agriculture Environment**

Samantha Jo Guldan, 16, Cathedral High School, New Ulm, Minnesota

Second Award of $500

PLNT045 **A Scientific Attempt to Decrease the Mortality Rate of Solanum lycopersicum Plants in Tropical and Subtropical Areas**

Ambika Murali, 17, Leone High School, Pago Pago, American Samoa

Third Award of $250

PLNT015   **Advancing the Future of Agriculture Using Duckweed: A Continued Study of the Effects of Duckweed in an Aquaponic System**

Luke D. Little, 16, Home School, Pacific, Missouri

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

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

CBIO035   **Genomics-Based Cancer Drug Response Prediction through the Adaptive Elastic Net**

Jonathan Ma, 17, The Harker School, San Jose, California

Second Award of $1,000

CBIO047   **A Machine Learning Framework for Multi-Omics Discovery and Characterization of Gene Co-Alterations Impacting Disease**

Swetha Revanur, 17, Evergreen Valley High School, San Jose, California

Third Award of $500

CBIO037   **Predictive Modeling of Optimal Cancer Therapies**

Joyce Xu, 17, Fairview High School, Boulder, Colorado

Certificate of Honorable Mention

ANIM014　　**Geospatial Analysis of Cetacean Distribution and Habitat Utilization Related to Prey Density and Sea Surface Temperature off the Long Island, New York Coastline**

Jared Randolph Bergen, 18, Sayville High School, West Sayville, New York

CBIO032　　**Lung Cancer Decision Support System: Novel Automated Noninvasive Tumor Malignancy and Patient Outcomes Prediction Modelling through Radiomics Phenotype Feature Quantification**

Aditya Jain, 16, Westview High School, Portland, Oregon

ENBM044　　**Using Machine Learning and Image Segmentation to Analyze Retinal Blood Vessel Densities**

Alexander Cheng, 15, Hillcrest High School, Midvale, Utah

ENMC006　　**Orbital Recognition System for Space Debris Tracking Using Artificial Neural Networks: A Journey from Inner-Brain GPS to Outer-Space GPS**

Amber Zoe Yang, 17, Trinity Preparatory School, Winter Park, Florida

SOFT042T　　**Statistical Analysis based Music Classifying Method and Tool**

SuHwan Jeong, 17, Gyeongnam Science High School, JinJu, South Korea

SeokHo Kim, 18, Gyeongnam Science High School, Jinju-Si, South Korea

Hae Jun Park, 18, Gyeongnam Science High School, Jinju-si, South Korea

SOFT043　　**Your Brainwave Is Your Password: Exploring EEG-Based Authentication for a Safer Cyber World**

Emily Jamie Wang, 15, William G. Enloe High School, Raleigh, North Carolina

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.

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 will be considered for these awards.

Arizona State University Intel ISEF Scholarship

BCHM013   **The Electrifying Speed of Enzymes**

Jackson Read Weaver, 17, Dr. Ronald E. McNair Academic High School, Jersey City, New Jersey

BCHM043   **All That Remains: Forensic Entomotoxicology Testing for the Presence of Ketamine and Flunixin Transference to a Decomposing Host**

Alexia Dean Benson, 17, Grove High School, Grove, Oklahoma

BEHA047T   **Cognitive and Brain Measures in Middle-Aged Autistic Spectrum Disorder Individuals: Where Are the Differences?**

Divya Vatsa, 17, BASIS Scottsdale, Scottsdale, Arizona

Emily Wood, 17, Xavier College Preparatory, Phoenix, Arizona

BMED034   **The Effects of Fetal Troponin T on the Cardiac Remodeling of Hypertrophic Transgenic Hearts**

Jenna Chase Allardice, 16, Academy of Tucson High School, Tucson, Arizona

CBIO039   **Observations of Drug Synergy Mechanisms to Target Intrinsically Disordered Proteins in Viruses**

Ritika Bharati, 17, Hamilton High School, Chandler, Arizona

CELL048   **Polymer Mediated Trangene Delivery of TRAIL Protein: Comparison of Aminoglycoside Polymers and Lipopolymers for Transgene Delivery of TRAIL Protein into UMUC-3 Bladder Cancer Cells**

Vedik Navale, 16, Hamilton High School, Chandler, Arizona

EAEV006   **Change in Algae Growth Using Supplemental Carbon Dioxide**

Claire Elizabeth Wentzlaff, 16, Burnsville Senior High School, Burnsville, Minnesota

EAEV029   **Biomass to Biofuel: Using Mushrooms for the Production of Cellulosic Ethanol**

Allison Pauline Smith, 16, Spring Creek High School, Spring Creek, Nevada

EAEV031   **Getting the Dirt on Diversity II**

Chali Ann Simpson, 17, Grants High School, Grants, New Mexico

EAEV046   **Calibration Methodology for Vertical Inversion Atmospheric Measurement System**

Elizabeth Frances Dowell, 16, Northern Utah Acadamy for Math, Engineering and Science, Layton, Utah

EBED045   **A Low-Cost Flying, Life-Detection System for the Recovery of Victims after Earthquakes**

Sachin Ganesh Konan, 15, Hamilton High School, Chandler, Arizona

EGCH026   **Fuel Ethanol Potential of Barley, Phase II**

Morgan Marcella Kohl, 16, Waverly-South Shore Public School, Waverly, South Dakota

EGCH036   **Lipid Content in Algae: The Foundation of Biofuel Production**

Katherine R. Beadle, 17, Bishop Feehan High School, Attleboro, Massachusetts

EGCH044   **Algal Biofuel Production**

Christoper Wayne Clark, 17, Westfield High School, Westfield, Massachusetts

EGCH048   **The Effect of the Type of Extraction Method on the Amount of Crude Algal Lipids Recovered for Economically Feasible Biofuel Production**

McKenna Kristin Loop, 17, Arizona College Preparatory- Erie, Chandler, Arizona

EGPH026   **Natural Solar: Production of Biofriendly Naturally Produced Solar Panels**

Lillian Rose Martinez, 17, Taos Academy Charter School, Taos, New Mexico

EGPH033T   **Now You See It, Now You Don't**

Stacy Leyann Swope, 17, Deming High School, Deming, New Mexico

Hannah Stockman, 16, Deming High School, Deming, New Mexico

EGPH038   **Using an Isolated Gain System to Heat a Traditional Home**

Kelly Charley, 17, Navajo Preparatory School, Farmington, New Mexico

ENEV082   **An Innovative Approach to Vehicle Suspension: Creating Retrofit Dampers to Minimize Gasoline Consumption and Carbon Dioxide Emissions**

Pujan Sanjaykumar Patel, 16, Mayo High School, Rochester, Minnesota

ENEV095   **The Carbon Sequestrator, Year Two**

Amanda Paige Thatcher, 17, Herriman High School, Herriman, Utah

ENEV097   **Analyzing the Mechanism and Efficiency for Filtering Pb Using Fresh Water Algae, Phase Three**

Amanda Minke, 17, Immaculate Heart High School, Oro Valley, Arizona

ENMC013   **Concentrated Solar Thermal**

Noah Samuel Bell, 17, Veritas Christian Community School, Sierra Vista, Arizona

MATS050   **Novel Synthesis of Water-Soluble Paramagnetic Polymer Nanoparticles (Metal Free) for Selective Drug Delivery and Cancer Therapy Applications**

Arnob Das, 16, Jesuit High School, Portland, Oregon

MCRO023   **Creating an Organic Pesticide to Save the North American Ash Trees**

Nick A. Wamsley, 16, Home School, Pacific, Missouri

PLNT010   **The Effect of Application Rates on the Growth and Yield of Gossypium hirsutum L.**

David Anthony Mendoza, 17, Christ the King Cathedral School, Lubbock, Texas

ROBO035   **The Design and Formation of a Sign Language Robot for Student Education**

Ashley Bishop, 17, Veterans High School, Kathleen, Georgia

TMED008   **Investigating the SPF, Antioxidant and Anticancer Potential of Organic Turmeric (Curcuma longa) and Ginger (Zingiber officianale) Combinations on HTB67 & HTB69 Melanoma Cancer Cells**

Moana Lily Pinner, 16, Hilo High School, Hilo, Hawaii

Students must enroll as undergraduate students in a degree seeking program following their graduation from secondary school . The award amount is equal to the New American University Provost Scholarship; if student receives an award of higher value from ASU, that award will replace the ISEF award.

Association for Computing Machinery

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

First Award of $1,000

ROBO018   **Multi-Goal Motion Planning for Steerable Surgical Needles**

David Jonathan Gardner, 17, Eleanor Roosevelt High School, Greenbelt, Maryland

Second Award of $500

CBIO028   **A Universal Automated Algorithm for the Generation of Potent Antimicrobial Peptides**

Gwenda Law, 17, Burnt Hills-Ballston Lake High School, Burnt Hills, New York

Third Award of $300

SOFT026   **Efficient Blockchain-Driven Multiparty Computation Markets at Scale**

Charles Noyes, 17, Villa Park High School, Villa Park, California

Fourth Award of $200

CBIO041   **A Machine Learning Approach to Identifying Ordered Binding Regions on Order-Disorder Protein Interfaces**

Jake Yee Cui, 17, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

SOFT015   **User Authentication Based on Gait Analysis**

Chloe Baker, 16, Lake Braddock Secondary School, Burke, Virginia

SOFT031   **Developing Operating System for High-Performance Computing with a Hardware Approach to the Transactional Memory Support**

Wojciech Krzysztof Rozowski, 17, Liceum Ogolnoksztalcace im. Tadeusza Kosciuszki w Krzeszowicach, Krzeszowice, Poland

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

Association for the Advancement of Artificial Intelligence

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

ROBO046   **A Novel Haptic Actuator for Robotic Surgery: Utilizing Soft Robotic Pneumatic Networks, a Closed Loop Control System, and an Electro-Pneumatic Control Board to Accurately Restore an Operator's Sense of Touch**

Simone Braunstein, 18, Dalton School, New York, New York

Second Award of $1,000

ROBO012   **Use the Force, Lyapunov! A Novel Quadcopter Motor Controller Using Force Sensor Feedback**

Steven Thomas Elliott, 17, The Home Educator's Outsourcing High School, Plano, Texas

Third Award of $500

ROBO040   **Give Me a Hand**

Ryan Christopher Gross, 16, Spring Mills High School, Martinsburg, West Virginia

Honorable Mention

EBED013T   **Eye-controlled Wheelchair: A Low-cost Open Source Hard- and Software System Allowing Independent Mobility for People with Severe Disabilties**

Myrijam Stoetzer, 15, Franz-Haniel-Gymnasium, Duisburg, Germany

Paul Foltin, 16, Franz-Haniel-Gymnasium, Duisburg, Germany

EBED042   **A Portable Optoelectronic Molecular Identification and Spectral Analysis System for Assessing the Quality, Safety, and Composition of Food and Pharmaceuticals Using Machine Learning**

Eshika Saxena, 14, Interlake High School, Bellevue, Washington

ROBO018   **Multi-Goal Motion Planning for Steerable Surgical Needles**

David Jonathan Gardner, 17, Eleanor Roosevelt High School, Greenbelt, Maryland

ROBO047T   **Fido: A Universal Robot Control System Using Reinforcement Learning with Limited Feedback**

Michael Truell, 15, Horace Mann School, Bronx, New York

SOFT029   **Traffic Camera Dangerous Driver Detection (TCD3): Contextually Aware Heuristic Feature & OFA Density-Based Computer Vision with Movement Machine Learning Analysis of Live Streaming Traffic Camera Footage to Identify Anomalous & Dangerous Driving**

Vidur Tenali Prasad, 17, Dayton Regional STEM School, Kettering, Ohio

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

PHYS069T   **A Search and Exploration of Multi-Exoplanet Systems Using Novel Photometric and TTV Algorithms for the K2 Mission**

Shishir Dholakia, 17, Adrian C. Wilcox High School, Santa Clara, California

Shashank Dholakia, 17, Adrian C. Wilcox High School, Santa Clara, California

Priscilla and Bart Bok Second Award of $500

PHYS053   **Constructive Interference of Seismic Surface Waves Antipodal to Crater Impact Sites on Terrestrial Bodies**

Camille Virginia Yoke, 18, Maggie L. Walker Governor's School, Richmond, Virginia

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

ASU Rob and Melani Walton Sustainability Solutions Initiatives

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

First Award of $2,500

ANIM034   **Novel Mosquito Control: A Chemical-free, Low-Cost Approach for Aedes aegypti Reduction via Specific Range Frequency Sweep**

Shantanu Jakhete, 16, South Fork High School, Stuart, Florida

EGCH048   **The Effect of the Type of Extraction Method on the Amount of Crude Algal Lipids Recovered for Economically Feasible Biofuel Production**

McKenna Kristin Loop, 17, Arizona College Preparatory- Erie, Chandler, Arizona

EGPH025   **Bringing Electricity Access to Countries through Ocean Energy: BEACON -- Combatting Energy Poverty through the Development of a Novel Ocean Energy Probe**

Hannah D. Herbst, 15, Florida Atlantic University High School, Boca Raton, Florida

MATH027T   **The Future of Energy: Spidronized Solar Cells**

Osvaldo J. Pagan, 17, Dr. Carlos Gonzalez High School, Aguada, Puerto Rico

Dariannette Valentin, 17, Dr. Carlos Gonzalez High School, Aguada, Puerto Rico

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

BMED037   **The "Smart" Cancer Drug: Targeting Cancer's Achilles Heel with Novel CRISPR/Cas9**

Jiwoo Lee, 16, Academy for Medical Science Technology, Hackensack, New Jersey

CELL036   **Ribosomal Ribonucleic Acid Targeting using Small Ribonucleic Acid as a Potential Antimicrobial**

Tess Ann Marvin, 17, Paul J. Hagerty High School, Oviedo, Florida

CHEM057   **Preventing Urushiol (Poison Oak) Induced Dermatitis by Deactivating the Allergen**

Amy Dunphy, 15, The Harker School, San Jose, California

EBED013T   **Eye-controlled Wheelchair: A Low-cost Open Source Hard- and Software System Allowing Independent Mobility for People with Severe Disabilties**

Myrijam Stoetzer, 15, Franz-Haniel-Gymnasium, Duisburg, Germany

Paul Foltin, 16, Franz-Haniel-Gymnasium, Duisburg, Germany

ENBM010   **Inexpensive, Portable Glucose Monitor for Diabetics via a Crosslinked Sensing Fluid**

Serena Liang Jing, 17, Saint Paul Central High School, St. Paul, Minnesota

ENMC012   **Highly Effective Hybrids**

Danika Louw, 16, Holy Spirit Catholic High School, Tuscaloosa, Alabama

ENMC060   **Get Up 'N' Go: Walker Stabilization Device**

Alexandra Jade Miller, 17, Northern Garrett High School, Accident, Maryland

MCRO059   **Reversing Antibiotic-Resistance: Discovery, Evaluation, and Optimization of Extended-Spectrum Beta-Lactamase Inhibitors**

David M. Lu, 18, Mills E. Godwin High School, Henrico, Virginia

MCRO065   **Boosting MFC Biocatalyst Performance: A Novel Gene Identification and Consortia Engineering Approach**

Han Jie (Austin) Wang, 18, David Thompson Secondary, Vancouver, Canada

TMED049   **Bioengineering Functional Kidney Tissue from Human Pluripotent Stem Cells: A Promising New Treatment for Kidney Disease**

Demetri Maxim, 18, Gould Academy, Bethel, Maine

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

ENBM056   **Lightning in a Bottle: Effect of Plasma Activation on Muscle Cells**

Nathan Leonard Kinsey, 16, Eugene Ashley High School, Wilmington, North Carolina

Drexel University

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

Full tuition scholarship

BMED093   **Popping Bubbles: Relationship between Cell Surface Area and Ultrasound Microbubble Mediated Toxicity**

Ananya Satyawadi, 16, Shady Side Academy, Pittsburgh, Pennsylvania

EAEV017   **Sea Level Rise and March of the Molokai Mangrove: The Socioeconomic and Environmental Impacts of Sea Level Rise and Introduced Red Mangrove (Rhizophora mangle) on Molokai, Hawaiian Islands**

Lily Nalulani Jenkins, 16, Molokai High School, Hoolehua, Hawaii

EGPH040   **Phase Change Material Based Thermal Energy Storage for Higher Efficiency Photovoltaics**

Aditya Jog, 17, William Mason High School, Mason, Ohio

ENMC058   **Wireless Monitoring of Blade Impacts**

Jonathan Yu, 17, Great Mills High School, Great Mills, Maryland

MATH046   **Fast Sampling of Stochastic Kronecker Graphs by Identifying Erdos-Renyi Subregions**

Arjun Srinivasan Ramani, 17, West Lafayette Junior-Senior High School, West Lafayette, Indiana

MATS017   **Advanced Au-SPIONs: Synthesis and Characterization of Multifunctional Nanoparticles for Personalized Nanomedicine**

Grace Hu, 17, Jericho High School, Jericho, New York

MCRO037   **Conjugative Transfer of Cytotoxic Genes for Targeted Cell Elimination**

Anthony Kyuwon Kang, 17, Canyon Crest Academy, San Diego, California

ROBO035   **The Design and Formation of a Sign Language Robot for Student Education**

Ashley Bishop, 17, Veterans High School, Kathleen, Georgia

Scholarships are renewable for up to five years pending maintenance of a 3.0 GPA and full-time status. Each scholarship is valued at $190,000. Scholarships will go into effect upon admission to the University.

European Organization for Nuclear Research-CERN

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

All expense paid trip to tour CERN

ENMC006   **Orbital Recognition System for Space Debris Tracking Using Artificial Neural Networks: A Journey from Inner-Brain GPS to Outer-Space GPS**

Amber Zoe Yang, 17, Trinity Preparatory School, Winter Park, Florida

ENMC011 **A Smart Burn and Spill Proof "SAFE" Microwave that Spares the Salad: Novel Application of Levenberg-Marquardt Algorithms in Bayesian Analysis for Real-Time Numerical Thermodynamic Modeling**

Muhammad Shahir Rahman, 16, Westview High School, Portland, Oregon

PHYS009 **Creation of Additional Signal Regions to Increase Signal Sensitivity in the Search for Vector-Like Quarks at the LHC**

Sloan Wayne Kanaski, 18, University High School, Tucson, Arizona

PHYS013 **Deriving an Analytical Algorithm for the Localization of Signal Sources in Orb Webs and Other Net Geometries: A Novel Mathematical Approach to Positioning Systems**

Sophie Atzpodien, 16, Gymnasium St. Mauritz, Munster, Germany

PHYS028 **Two-Dimensional Mapping of Energy Transfer in Graphene/MoS2 Photodetectors**

Michael Thomas Earle, 18, Ossining High School, Ossining, New York

PHYS030 **Spectroscopic Analysis of Titanium Oxide Presence in Stars**

Sarah Amina Maazouz, 17, Liberty High School, Hillsboro, Oregon

PHYS053 **Constructive Interference of Seismic Surface Waves Antipodal to Crater Impact Sites on Terrestrial Bodies**

Camille Virginia Yoke, 18, Maggie L. Walker Governor's School, Richmond, Virginia

ROBO047T **Fido: A Universal Robot Control System Using Reinforcement Learning with Limited Feedback**

Michael Truell, 15, Horace Mann School, Bronx, New York

SOFT012 **Determining Network Robustness Using Region Based Connectivity**

Rucha Joshi, 16, Westwood High School, Austin, Texas

SOFT015   **User Authentication Based on Gait Analysis**

               Chloe Baker, 16, Lake Braddock Secondary School, Burke, Virginia

Alternate for CERN trip

PHYS046   **Analysis of Chemical Vapor Deposition Diamonds for Neutron Detection on OMEGA**

               Ishir Seth, 18, Brighton High School, Rochester, New York

ROBO010   **Beyond the Perceptron: A Computational Geometric Approach to Machine Learning**

               Michael William Litt, 16, Orange High School, Pepper Pike, Ohio

Florida Institute of Technology

Florida Institute of Technology is a highly ranked national, doctoral-granting research university offering a unique, "High Tech with a Human Touch" academic experience. Florida Tech☿'s campus is lush with 140 acres of tropical greenery and our students enjoy near-perfect weather almost all year round. Our location on the east coast of central Florida provides great opportunities for students looking to pursue degrees in aerospace and mechanical engineering (Kennedy Space Center is just 45 minutes away), marine biology, physics, environmental sciences, aviation, computer science and more.

Full Tuition Presidential Scholarship

MCRO014   **GASP!: Growth Advantage in Stationary Phase in Acinetobacter baylyi**

               Rebecca Bloomfield, 17, William J. Palmer High School, Colorado Springs, Colorado

PHYS045   **3D Printed Gas Electron Multiplier**

               Adam Syndergaard, 17, Maple Mountain High School, Spanish Fork, Utah

PLNT018   **Evaluating the Potential of Micro Algae as an Inoculant for Pulses: Ideal Conditions for Indoor Farming, Year Four of an Ongoing Project**

Lauren Juliette Matthews, 16, Niceville High School, Niceville, Florida

Florida Tech is offering three full tuition scholarships valued at approximately $150,000 each. Scholarships will go into effect upon admission to the University.

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, proposed by a visiting scientist. FBK's Board of Directors will award 3 Intel ISEF finalists full fellowships, 1 of them including travel to Italy, to be part of the WebValley team in June 2016.

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

ROBO032   **Shape-Shifting Origami Robotics**

Francisca Vasconcelos, 18, Torrey Pines High School, San Diego, California

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

PLNT002   **Bringing Genetics to the Masses: The Development of a Low Cost DNA Extraction and Profiling Kit**

Louis Oliver Madden, 16, Largy College, Monaghan, Ireland

SOFT035   **Efficient, Hardware Implementations of Computationally-Intensive Operations in Quotient Polynomial Rings for NTRU-Based Digital Signatures**

Vikul Gupta, 17, Oregon Episcopal School, Portland, Oregon

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

GoDaddy

GoDaddy is the worlds largest technology provider dedicated to small business. 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

SOFT051   **Psychological Classification by Applying Deep Learning to Social Media Text**

         Daniel Mogilny, 17, Laval Senior Academy, Montreal, Canada

$1,500 Forward Thinker Award

SOFT023   **Collaborative Maze Solving and Map Development via Gestural Communication Using Multiple Ground Robots**

         Vineet Shah, 17, Poolesville High School, Poolesville, Maryland

$1,500 Mobile Application Award

SOFT044   **A Novel Algorithm for Detection of Plasmodium falciparum Parasites in Digitized Blood Samples**

         Rahul Ramesh, 16, Hamilton High School, Chandler, Arizona

$1,500 Open Source Award

SOFT001T   **ByMySelf(BMS) Encryption Algorithm**

         Diana Marusic, 18, "Ion Creanga" Theoretical Lyceum, Chisinau, Republic of Moldova

         Emilia Savva, 16, "Ion Creanga" Theoretical Lyceum, Chisinau, Republic of Moldova

$1,500 Web Innovator Award

SOFT018T   **Yarner: Study of Technologies Inside Classrooms Focusing on Literacy with the Development of a Digital Web and Mobile Application**

         Rafael Eiki Matheus Imamura, 19, Colegio Tecnico de Campinas, Campinas, Brazil

         Laura Rubia Paixao Boscolo, 18, Colegio Tecnico de Campinas, Campinas, Brazil

Google

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

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

ROBO046   **A Novel Haptic Actuator for Robotic Surgery: Utilizing Soft Robotic Pneumatic Networks, a Closed Loop Control System, and an Electro-Pneumatic Control Board to Accurately Restore an Operator's Sense of Touch**

Simone Braunstein, 18, Dalton School, New York, New York

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

ENBM062   **Cellphone based Optometry using Hybrid Images**

Shreyas Kapur, 17, Modern School Barakhamba Road, Delhi, India

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

EGPH008   **Development of a High Efficiency Solar Cell Using Adaptive Self-Cooling**

Tiasha Joardar, 17, Plano West Senior High School, Plano, Texas

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

International Council on Systems Engineering - INCOSE

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

First Award of $1,500

ENMC034   **Project Maverick: An Omni-Directional Robotic Mobility System**

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

Second award of $500

ENBM025   **Power of Touch: Challenges in Designing Haptic Sensing and Feedback for Neural Controlled Bionic/Prosthetic Hand**

Megan Guinn O'Briant, 18, Yorktown High School, Arlington, Virginia

Certificate of Honorable Mention

EBED022   **Brace Yourself: A Novel Electronically Aided Leg Orthosis**

Syamantak Payra, 15, Clear Brook High School, Friendswood, Texas

EBED024   **Development and Systems Integration of a Modular Power Factor Corrected Pre-regulator, LiFePO4 Battery Charger, DC Motor Controller, and Battery Monitoring System**

Drew Prevost, 18, Covenant Christian Academy, Huntsville, Alabama

EBED030 **CastMinder: Embedded Smart Sensors and Companion Software to Detect the Onset of Conditions Associated with Cast and Splint Complications and to Promote Patient Healing in Orthopedic Casts and Splints**

Alexander Frederick Wulff, 16, Skaneateles High School, Skaneateles, New York

EBED042 **A Portable Optoelectronic Molecular Identification and Spectral Analysis System for Assessing the Quality, Safety, and Composition of Food and Pharmaceuticals Using Machine Learning**

Eshika Saxena, 14, Interlake High School, Bellevue, Washington

ENBM021 **Passive Reduction of Involuntary Arm/Hand Tremors, Phase III**

Russell W. Ludwigsen, 15, Early College Academy, Albuquerque, New Mexico

ENBM027 **Sleep Tight**

Jalicia Azzalyna Desiree Smalley, 17, Horizon Science Academy - Lorain, Lorain, Ohio

ENBM049 **The Other Side of Me: An Arduino Based Game for Bilateral Integration in Autism Spectrum Disorder**

Samuel Ferguson, 17, Christian Unified High School, El Cajon, California

ENMC011 **A Smart Burn and Spill Proof "SAFE" Microwave that Spares the Salad: Novel Application of Levenberg-Marquardt Algorithms in Bayesian Analysis for Real-Time Numerical Thermodynamic Modeling**

Muhammad Shahir Rahman, 16, Westview High School, Portland, Oregon

ENMC014 **Reflected Laser Communications for Small Satellites**

Matthew Hileman, 18, The Classical Academy: College Pathways, Colorado Springs, Colorado

ROBO046 **A Novel Haptic Actuator for Robotic Surgery: Utilizing Soft Robotic Pneumatic Networks, a Closed Loop Control System, and an Electro-Pneumatic Control Board to Accurately Restore an Operator's Sense of Touch**

Simone Braunstein, 18, Dalton School, New York, New York

SOFT029   **Traffic Camera Dangerous Driver Detection (TCD3): Contextually Aware Heuristic Feature & OFA Density-Based Computer Vision with Movement Machine Learning Analysis of Live Streaming Traffic Camera Footage to Identify Anomalous & Dangerous Driving**

Vidur Tenali Prasad, 17, Dayton Regional STEM School, Kettering, Ohio

SOFT044   **A Novel Algorithm for Detection of Plasmodium falciparum Parasites in Digitized Blood Samples**

Rahul Ramesh, 16, Hamilton High School, Chandler, Arizona

K. Soumyanath Memorial Award

This award is presented by the family of Krishnamurthy Soumyanath (1957 - 2010), for the best project in Computer Engineering. Dr K. Soumyanath was an Intel Fellow and held the title of Chief Architect, Integrated Platform Research at Intel Labs, USA. He led 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

EBED012   **Two Transistor Ternary Random Access Memory**

Simon Peter Tsaoussis, 18, Christopher Columbus High School, Miami, Florida

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

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

K. T. Li Foundation Special Award

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

First Award of $1,500

MATH008   **A Tree Branch Path Solution to the Collatz Conjecture**

David Chang Luo, 18, Baton Rouge Magnet High School, Baton Rouge, Louisiana

Second Award of $1,000

MATH036   **Cosheaf Theoretical Constructions in Networks and Persistent Homology**

Karthik Yegnesh, 16, Methacton High School, Eagleville, Pennsylvania

Winning students will receive a certificate.

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

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

Award of $1,000 for Water Technology

CHEM023   **Nickel Oxy-hydroxide Thin Films as Efficient Electrocatalysts for Dye Wastewater Treatment**

Yuhang Wang, 19, National Junior College, Singapore, Singapore

EAEV003T   **Removal of E.coli and Total Coliform Count from Polluted Water Using Bio-waste**

Lee Zher Joel Jong, 15, SMK Batu Lintang, Kuching, Malaysia

Jun Wen Joyce Jong, 16, SMK Batu Lintang, Kuching, Malaysia

Jun Wei Sean Hii, 17, SMK Batu Lintang, Kuching, Malaysia

EAEV034   **The Effect of Tri-sprintec and Metformin and Their Doses on the Mortality and Reproduction of Ampullariidae, Daphnia magna, and Lemnoideae & the Heart Rate of Daphnia magna in Aquatic Ecosystems**

Sarayu K. Das, 15, Spring Valley High School, Columbia, South Carolina

EGPH021   **Water Purification Using Solar Energy**

Sebastian Andres Rivera, 16, Centro Residencial de Oportunidades Educativas de Ceiba, Ceiba, Puerto Rico

ENEV008   **Clathrate-Assisted Freezing/Melting Seawater Desalination**

Shixuan Justin Li, 18, Rutherford High School, Panama City, Florida

ENEV014   **Self-Watering (SW)**

Ziad Ben Hadj Salem, 18, Pioneer High School, Sousse, Tunisia

ENEV020   **Addressing Global Water Scarcity with a Novel Hydrogel Based Desalination Technique Using Saponified Starch-g-polyacrylamide and Its Hydrophilic Properties to Harvest Fresh Water with a Low Energy and Chemical Footprint**

Chaitanya Dasharathi Karamchedu, 16, Jesuit High School, Portland, Oregon

ENEV021   **Design and Implementation of a Sustainable Permeate Gap Membrane Distillation System for Water Purification in the Turkana Basin of Kenya**

Alexis Maria D'Alessandro, 18, Half Hollow Hills High School West, Dix Hills, New York

ENEV072   **New Record for the Most Effective Microalgae on the Removal of Phosphorus and Nitrogen for Wastewater Treatment**

Sara Adnan Alghamdi, 17, My Little House School, Jeddah, Saudi Arabia

MATS066T   **Improving the Properties of Concrete using Seawater with High Reactive Metakaoline and Sodium Mono Florophosphate**

Abdulrahman Abdulaziz Ali Mohammed, 18, Ahmad Bin Hanbal Secondary School, Najma, Qatar

Ahmed Salah Elhamamsi, 16, Ahmad Bin Hanbal Secondary School, Doha, Qatar

Monsanto Company

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

Monsanto Award for Innovation in Plant Sciences, First Award of $2,000

PLNT021   **The Effect of Site and Flower Color on the Genetic History of Castilleja levisecta (Golden Paintbrush), Castilleja hispida (Harsh Paintbrush), and C. levisecta x C. hispida**

Rebecca Ann Nelson, 17, Adlai E. Stevenson High School, Lincolnshire, Illinois

Second Award of $1,000

PLNT002   **Bringing Genetics to the Masses: The Development of a Low Cost DNA Extraction and Profiling Kit**

Louis Oliver Madden, 16, Largy College, Monaghan, Ireland

PLNT030   **Plant Vaccination: Turmeric (Curcuma longa L.) Induced Self-Defense Priming in Chinese Cabbage (Brassica rapa L.)**

Charu Joserose, 17, Tafuna High School, Pago Pago, American Samoa

PLNT041   **Determining the Effect of the Novel CarL2 Strigolactone Analog on the Seed Germination of Parasitic Weeds**

Fatimah Abdulmonem Alshaikh, 18, AlFaisaliah Islamic Schools, Khobar, Saudi Arabia

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

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

First Award of $1,500

MATH036 **Cosheaf Theoretical Constructions in Networks and Persistent Homology**

      Karthik Yegnesh, 16, Methacton High School, Eagleville, Pennsylvania

MATH048 **The Arrangement Graph: A New Design for Computational Systems**

      Omer Siddiqui, 16, Detroit Country Day School, Beverly Hills, Michigan

Second Award of $1,000

CBIO002T **Modeling Gene Transfer and Its Impact on Antibiotic Resistance**

      Victoria Ge, 17, Stanton College Preparatory School, Jacksonville, Florida

      Madison Lee, 18, Stanton College Preparatory School, Jacksonville, Florida

MATH008 **A Tree Branch Path Solution to the Collatz Conjecture**

      David Chang Luo, 18, Baton Rouge Magnet High School, Baton Rouge, Louisiana

MATH013 **A Deterministic Approach to the Position, Trajectory, and Collision Prediction of Particles within Bounded Two-Dimensional Environments**

      Arvind Krishna Ranganathan, 18, Ecole Mondiale World School, Mumbai, India

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

National Aeronautics and Space Administration

The National Aeronautics and Space Administration (NASA) is the United States government agency responsible for the nation's civilian space program and for aeronautics and aerospace research. Founded in 1958, NASA drives advances in science, technology, aeronautics, and space exploration to enhance knowledge, education, innovation, economic vitality, and stewardship of Earth.

Top Award of $5,000

PHYS069T **A Search and Exploration of Multi-Exoplanet Systems Using Novel Photometric and TTV Algorithms for the K2 Mission**

Shishir Dholakia, 17, Adrian C. Wilcox High School, Santa Clara, California

Shashank Dholakia, 17, Adrian C. Wilcox High School, Santa Clara, California

Second Award of $2,000

ANIM030 **Inheritable Longevity Programming: First Epigenetic Mechanism and Proof-of-Concept for Transgenerational Therapies to Prevent Multiple Aging-Related Diseases with Single Molecules**

Brian Xia, 16, Canyon Crest Academy, San Diego, California

CHEM036 **A Highly Efficient and Economically Profitable Electrocatalytic Conversion of Carbon Dioxide using Nanostructured Electrodes**

Nikhil Murthy, 16, Catlin Gabel School, Portland, Oregon

ROBO047T **Fido: A Universal Robot Control System Using Reinforcement Learning with Limited Feedback**

Joshua Aaron Gruenstein, 16, Horace Mann School, Bronx, New York

Michael Truell, 15, Horace Mann School, Bronx, New York

Third Award of $1,000

EBED042

A Portable Optoelectronic Molecular Identification and Spectral Analysis System for Assessing the Quality, Safety, and Composition of Food and Pharmaceuticals Using Machine Learning

Eshika Saxena, 14, Interlake High School, Bellevue, Washington

EGCH022

Optimizing Microbial Fuel Cell Electrical Performance through a Single-Chamber Design and Novel, Natural, Cost-Effective Anodes

Kimberly Alexis Te, 18, Manhasset High School, Manhasset, New York

EGCH029

Nature-Based Solid Polymer Electrolytes for Improved Safety, Sustainability, and Efficiency in High-Performance Rechargeable Batteries

Kathy Liu, 17, West High School, Salt Lake City, Utah

ENBM053

Design and Assembly of CRISPR/Cas9-Based Virus-Like Particles for Orthogonal and Programmable Genetic Engineering in Mammalian Cells

Michael Zhang, 18, Conestoga High School, Berwyn, Pennsylvania

ENBM062

Cellphone based Optometry using Hybrid Images

Shreyas Kapur, 17, Modern School Barakhamba Road, Delhi, India

ENMC006

Orbital Recognition System for Space Debris Tracking Using Artificial Neural Networks: A Journey from Inner-Brain GPS to Outer-Space GPS

Amber Zoe Yang, 17, Trinity Preparatory School, Winter Park, Florida

ENMC022   **A Wing of the Future: Part III**

Trevor Michael Jordan, 18, Animas High School, Durango, Colorado

PHYS048

Galaxy Clusters, New Discoveries to Fill in the Gaps

Daniel Matthew Glazer, 17, University School of Milwaukee, Milwaukee, Wisconsin

PHYS053

Constructive Interference of Seismic Surface Waves Antipodal to Crater Impact Sites on Terrestrial Bodies

Camille Virginia Yoke, 18, Maggie L. Walker Governor's School, Richmond, Virginia

TMED049   **Bioengineering Functional Kidney Tissue from Human Pluripotent Stem Cells: A Promising New Treatment for Kidney Disease**

Demetri Maxim, 18, Gould Academy, Bethel, Maine

Honorable Mention

BCHM011   **Highly Sensitive Single Mutation Detection of EGFR by Bridged Nucleic Acid**

Edward Sangyoon Kim, 16, Midway High School, Waco, Texas

BMED006   **Accuracy of Non-Invasive Continuous Glucose Nanosensor for ex vivo Artificial Pancreas**

Maya Miriam Levy, 16, Dr. Michael M. Krop Senior High School, Miami, Florida

PHYS007T   **Capability of Modern Technology to Detect Exoplanets Orbiting Black Holes**

Brian Anthony Mills, 17, Vero Beach High School, Vero Beach, Florida

Spencer James Toll, 17, Vero Beach High School, Vero Beach, Florida

ROBO022   **Safecopter: Developing a Collision Avoidance System Based on an Array of Time-of-Flight 3D Cameras**

Robert Gabriel Tacescu, 16, Clovis North High School, Fresno, California

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

National Anti-Vivisection Society

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

First Award of $5,000

BMED095   **The Smoking Gun: Toxicological Effects of Electronic Cigarettes on Epithelial Cells using Air Liquid Interface, Year Two**

Ralph Ignacio Lawton, 17, Pennsylvania Leadership Charter School - University Scholars Program, West Chester, Pennsylvania

Second Award of $2,000

BCHM015   **The Differential Effect of Opioids on Breast Cancer Cell Pro-Survival and Pro-Apoptotic Pathways**

Meghana Srivyas Rao, 17, Caddo Parish Magnet High School, Shreveport, Louisiana

Third Award of $1,000

ENBM014   **The Mechanisms of Glioblastoma Migration in a Bioengineered 3D Brain Model**

Rama Nidhya Balasubramaniam, 17, Dublin Coffman High School, Dublin, Ohio

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

BEHA020   **Making the Mind Matter: Stress Mindset Effects on Sleep Quality, Stress Response, Emotion and Cognition in the Developing Adolescent Brain and the Role of the Prefrontal-Amygdala Circuit**

Kashfia Nehrin Rahman, 15, Brookings High School, Brookings, South Dakota

Second Award of $1,500

BMED005   **The Effects of E-Cigarette Vapor on Drosophila melanogaster**

        Lindsay Sophia Poulos, 15, Episcopal School of Jacksonville, Jacksonville, Florida

Third Award of $1,000

ANIM015   **Development of a Caffeine Addiction Paradigm to Examine How Dietary Restriction and Level of TOR Signaling Modulate the Effects of Drugs**

        Rachel Lauren Mashal, 18, John F. Kennedy High School, Bellmore, New York

Honorable Mention

BEHA022T   **Physical Activity and Intranasal Administration of Neuropeptide Y and Y1 Agonists Mitigate the Symptoms of ADHD and PTSD**

        Matthew James Forman, 17, Ossining High School, Ossining, New York

        Jack Joseph Lepkowski, 17, Ossining High School, Ossining, New York

BEHA024   **Network Topology and Recovery Phenotype Effects on Social Media Engagement**

        Alexus V. McBride, 17, Roanoke Valley Governor's School for Science and Technology, Roanoke, Virginia

The Addiction Science Award is sponsored by the National Institute on Drug Abuse, National Institutes of Health and Friends of NIDA.

NSA Research Directorate

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

First Award of $3,000

SOFT026   **Efficient Blockchain-Driven Multiparty Computation Markets at Scale**

                Charles Noyes, 17, Villa Park High School, Villa Park, California

Second Award of $1,000

MATH036   **Cosheaf Theoretical Constructions in Networks and Persistent Homology**

                Karthik Yegnesh, 16, Methacton High School, Eagleville, Pennsylvania

SOFT012   **Determining Network Robustness Using Region Based Connectivity**

                Rucha Joshi, 16, Westwood High School, Austin, Texas

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

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

The Chief of Naval Research Scholarship Award of 10,000

ROBO046   **A Novel Haptic Actuator for Robotic Surgery: Utilizing Soft Robotic Pneumatic Networks, a Closed Loop Control System, and an Electro-Pneumatic Control Board to Accurately Restore an Operator's Sense of Touch**

                Simone Braunstein, 18, Dalton School, New York, 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 medal.

Oracle Academy

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

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

CBIO019   **Predicting Future Body Mass Index with an Artificial Neural Network**

Alexander Zlokapa, 16, Golden Hills Academy (Homeschool), Danville, California

ROBO045   **Using Machine Learning to Detect Computer Network Security Threats**

Anushka Prasad Jogalekar, 15, Evergreen Valley High School, San Jose, California

SOFT012   **Determining Network Robustness Using Region Based Connectivity**

Rucha Joshi, 16, Westwood High School, Austin, Texas

SOFT018T   **Yarner: Study of Technologies Inside Classrooms Focusing on Literacy with the Development of a Digital Web and Mobile Application**

Rafael Eiki Matheus Imamura, 19, Colegio Tecnico de Campinas, Campinas, Brazil

Laura Rubia Paixao Boscolo, 18, Colegio Tecnico de Campinas, Campinas, Brazil

SOFT019   **ShopMap**

Karola Balint, 19, Csongradi Batsanyi Janos Gimnazium, Szakkepzo Iskola es Kollegium, Csongrad, Hungary

SOFT030T   **Seismic Alerter (Spanish: Alertador sismico)**

Roxana Cuevas, 17, Liceo Polivalente Hnas Maestras de la Santa Cruz, Laja, Chile

Claudia Poblete, 16, Liceo Polivalente Hnas Maestras de la Santa Cruz, Laja, Chile

SOFT032   **Using Data-Driven Frequency Analysis Techniques to Detect Seizures and Falls**

Amir Helmy, 15, Eastside High School, Gainesville, Florida

SOFT041   **Schedule Advisory: Investigating Genetic Algorithms to Solve Class Scheduling**

Uma Sethuraman, 15, William P. Clements High School, Sugar Land, Texas

SOFT051   **Psychological Classification by Applying Deep Learning to Social Media Text**

Daniel Mogilny, 17, Laval Senior Academy, Montreal, Canada

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

Patent and Trademark Office Society

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

First Award of $500

BEHA035   **CRANIOMETRIX: Developing Innovative Cognitive Tests to Diagnose Alzheimer's Early, Year Four**

Nikhil Sanjay Patel, 16, Oviedo High School, Oviedo, Florida

EBED005   **Wearable Device to Translate American Sign Language (ASL) into English**

Abishek Stenush Gomes, 16, Belvoir College International, Colombo, Sri Lanka

EBED030   **CastMinder: Embedded Smart Sensors and Companion Software to Detect the Onset of Conditions Associated with Cast and Splint Complications and to Promote Patient Healing in Orthopedic Casts and Splints**

Alexander Frederick Wulff, 16, Skaneateles High School, Skaneateles, New York

EGPH017   **From Nano Defects to Mega Power: Heavily-Zirconium-Doped Trapped Field (Gd,Y)BaCuO Superconductor Tapes for High Power Wind Turbine Generators**

Kavita Selva, 16, Clear Lake High School, Houston, Texas

ENEV008   **Clathrate-Assisted Freezing/Melting Seawater Desalination**

Shixuan Justin Li, 18, Rutherford High School, Panama City, Florida

TMED048   **A Novel Nanoparticle-microRNA Treatment to Overcome Drug Resistance and Tumor Metastasis in Lung Cancer**

Anirudh Jain, 18, Catlin Gabel School, Portland, Oregon

TMED049   **Bioengineering Functional Kidney Tissue from Human Pluripotent Stem Cells: A Promising New Treatment for Kidney Disease**

Demetri Maxim, 18, Gould Academy, Bethel, Maine

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

ENMC004   **Modified and Adjustable Crutches**

Thanthrige Don Chamindu Jayasanka, 14, Rajasinghe Central College, Hanwella, Sri Lanka

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 major or minor in psychology or a closely related field, and who meet academic qualifications.

First Award of $2,500

BEHA035 **CRANIOMETRIX: Developing Innovative Cognitive Tests to Diagnose Alzheimer's Early, Year Four**

Nikhil Sanjay Patel, 16, Oviedo High School, Oviedo, Florida

Second Award of $1,500

BEHA026 **Individual Neural Network Activity Patterns Underlie Complex Cognitive Task Performance: An fMRI Study with Clinical Implications**

Sarah Fendrich, 17, Ossining High School, Ossining, New York

Third Award of $1,000

BEHA008 **Biochemical Characterization and Imaging of Arc: Insights into Neurodegeneration and Alzheimer's Development**

Rajeev Jha, 18, President Theodore Roosevelt High School, Honolulu, Hawaii

All winners will receive a custom Psi Chi Certificate of Recognition.

Qatar Foundation, Research & Development

Qatar Foundation for Education, Science and Community Development is a private, non-profit organization that serves the people of Qatar by supporting and operating programs in three core mission areas: education, science and research, and community development. The Foundation strives to nurture the future leaders of Qatar. By example and by sharing its experience, the Foundation also contributes to human development nationally, regionally, and internationally. In all of its activities, the Foundation promotes a culture of excellence in Qatar and furthers its role in supporting an innovative and open society that aspires to develop sustainable human capacity, social, and economic prosperity for a knowledge-based economy.

First Award of $1,000

BMED081T **The Impact of Sport Jackets on Adjusting Backbone Vertebraes**

Sara Khalaf S. M. Al-Kubaisi, 14, Moza Bint Mohamad, Doha, Qatar

Tamara Ismail Bashir, 14, Moza Bint Mohamad, Doha, Qatar

EAEV049 **Assessment of Phthalate Esters (PAEs) and Bisphenol A (BPA) in Treated Wastewater Samples Collected in Saudi Arabia and their Potential Health Risk**

Hesham Abdulrahman Almeneif, 18, Manarat AlRiyadh School, Riaydh, Saudi Arabia

EGCH003 **Solar Heat Storage with Salt Hydrates Using Phase Change Effects: Materials, Analysis and Application**

Maximilian Albers, 18, Max-von-Laue-Gymnasium, Koblenz, Germany

EGPH037 **Solar Cell Pyramids**

Sulaiman Adel Sulaiman, 16, Yousef Ben Essa High School, Abdullah Al-Salem, Kuwait

ENEV100T **Acacia xanthophloea Characterization and Preservation Techniques of Sapwood (Plant Xylem) as a Low Cost Membrane Filtration Device for Arid and Semi-Arid Areas in Kenya**

Mansi Ajey Apte, 15, Shree Cutchi Leva Patel Samaj School, Nairobi, Kenya

Vishal Hareshkumar Dhanji Vekaria, 15, Shree Cutchi Leva Patel Samaj School, Nairobi, Kenya

MATS039T **Development of a Stand-off Distance System for Detecting Hidden Hazardous Materials**

Madat Sardarli, 16, Lyceum Named after Academician Zarifa Aliyeva, Baku, Azerbaijan

Nigar Sardarli, 17, Lyceum Named after Academician Zarifa Aliyeva, Baku, Azerbaijan

MATS061T **Science Overcomes Drug Addiction: A New Approach on Monitoring the Receptors Overexpress on Brain Cells**

Ece Derin Aydın, 16, Takev Science High School, Izmir, Turkey

Begum Kınay, 17, Takev Science High School, Izmir, Turkey

ROBO045 **Using Machine Learning to Detect Computer Network Security Threats**

Anushka Prasad Jogalekar, 15, Evergreen Valley High School, San Jose, California

ROBO049T **The Smart E-Speaking Stick**

Fatma Imad Zaghab, 16, Jericho Girls Secondary School, Jericho, Palestine

Amal Ali Fhoud, 17, Jericho Girls Secondary School, Jericho, Palestine

TMED002   **Anti Proliferative and Apoptotic Effects of Ellagic Acid Functionalyzed Iron Oxide Nano Particles on Endometrial Cancer (AN3CA) Cells**

Parana Muhandiramge Lochana Piyumantha Fernando, 17, Senanayake National College, Madampe, Sri Lanka

TMED016   **A Study on the Anti-tumor Pontential of Moringa oleifera (Lam.) Seed Extract using the Chorioallantoic Membrane Assay**

Arianwen Ledesma Rollan, 17, Cebu City National Science High School, Cebu City, Philippines

TMED032   **Understanding Modern Diagnoses with Unknown Gene Plays a Critical Role in Inherited Thrombophilia**

Abdullah Faisal Alzarroug, 16, Alkhndag, Madinah, Saudi Arabia

Ricoh USA, Inc

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

Ricoh Sustainable Development Award of $12,500

EAEV018   **A Super Soaker for Greenhouse Gas: The Design and Synthesis of a Novel Metal Organic Framework for Adsorption and Storage of Gases like CO2**

Megha Vyakaranam, 15, Independence High School, Frisco, Texas

ENEV021   **Design and Implementation of a Sustainable Permeate Gap Membrane Distillation System for Water Purification in the Turkana Basin of Kenya**

Alexis Maria D'Alessandro, 18, Half Hollow Hills High School West, Dix Hills, New York

Winning students will receive framed Ricoh Sustainable Development Award certificates.

Sigma Xi, The Scientific Research Society

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

First Physical Science Award of $2,000

ANIM049T   **A Silk Sheath Production Frame Developed from Negative Geotropic Spinning Behavior of Silkworms Resulted in Silk Sheath with High Homogeneity**

Charuntorn Doungnga, 18, Damrongratsongkroh School, Chiang Rai, Thailand

Runglawan Charpugdee, 17, Damrongratsongkroh School, Chiang Rai, Thailand

First Life Science Award of $2,000

EBED013T   **Eye-controlled Wheelchair: A Low-cost Open Source Hard- and Software System Allowing Independent Mobility for People with Severe Disabilties**

Myrijam Stoetzer, 15, Franz-Haniel-Gymnasium, Duisburg, Germany

Paul Foltin, 16, Franz-Haniel-Gymnasium, Duisburg, Germany

Second Physical Science Award of $1,000

TMED010T   **Predicting a Cancerous Outcome: Creating a Novel Test for Assessing Risk of Human Papilloma Virus-Associated Oropharyngeal Cancer**

Prashant Sai Godishala, 18, Breck School, Golden Valley, Minnesota

Brennan Scott Clark, 18, Breck School, Golden Valley, Minnesota

Second Life Science Award of $1,000

ENEV017T   **Desalination by Pervaporation System**

Haya Ahmed Mohamed, 16, STEM School for Girls, Benisuef, Egypt

Mdouna Attaalla, 17, STEM School for Girls, Cairo, Egypt

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

ENMC012   **Highly Effective Hybrids**

Danika Louw, 16, Holy Spirit Catholic High School, Tuscaloosa, Alabama

Second Award of $1,500

ENBM068   **Investigating Shear Thickening Fluid Applications to Decrease Linear and Rotational Mean Peak Acceleration as Measured by Dual Axis Accelerometers in Hockey Headgear and a Hybrid 3 Head Form**

Clara Elizabeth Wagner, 17, Saginaw Arts and Sciences Academy, Saginaw, Michigan

Third Award of $1,000

MATS019   **Bio-Engineered Concrete: A Sustainable Self-Healing Material**

Nicholas Rocco Bracci, 16, The Woodlands College Park High School, The Woodlands, Texas

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

ENMC025   **Stabilizing a High-Power Quadcopter**

Patrick D Kao, 15, Menlo-Atherton High School, Atherton, California

Second Award of $500

ENMC050   **Project ARROW: Autonomous Rocket Return on Wings**

Benjamin Kolland, 17, Alternative Family Education (A.F.E.), Santa Cruz, California

Third Award of $300

ROBO012   **Use the Force, Lyapunov! A Novel Quadcopter Motor Controller Using Force Sensor Feedback**

Steven Thomas Elliott, 17, The Home Educator's Outsourcing High School, Plano, Texas

Certificate of Honorable Mention

ENMC020   **The Power of Eta in Propulsive Engineering**

Edwin Collier Moody V., 17, Moody Homeschool, Tucson,, Arizona

ENMC022   **A Wing of the Future: Part III**

Trevor Michael Jordan, 18, Animas High School, Durango, Colorado

ENMC053   **Investigating the Acoustic Flame Interaction with the Effects of Magnetic Field and Plasma**

Omar Abdulrahman Alhazzaa, 17, Najd Nationa School, Riyadh, Saudi Arabia

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

SPIE, the international society for optics and photonics

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

First Award of $2,000

CHEM029   **UV-Light Sensitive Transparent Organic Solar Cells**

Cheng-Pei Lin, 17, Taipei First Girls High School, Taipei City, Taiwan

Second Award of $1,500

EBED001T   **Time-Domain Reflectometry Applied to Irrigation Control**

Fabiane Kuhn, 19, Fundacao Escola Tecnica Liberato Salzano Vieira da Cunha, Novo Hamburgo, Brazil

Guilherme de Oliveira Ramos, 18, Fundacao Escola Tecnica Liberato Salzano Vieira da Cunha, Novo Hamburgo, Brazil

Third Award of $1,000

EBED008   **Security at the Speed of Light: Countering Cyberattacks via Novel On-Chip Photonic Protocols**

Jeremiah Pate, 17, BASIS Oro Valley, Oro Valley, Arizona

Fourth Award of $500

MATS062T   **Characterization of Blue Fluorescent OLED and Seven Segment Display Application**

Ilke Adalıoglu, 17, Takev Science High School, Izmir, Turkey

Cemil Gorkem Tamer, 17, Takev Science Fair, İzmir, Turkey

Synaptics, Inc.

Synaptics is the pioneer and leader of the human interface revolution, bringing innovative and intuitive user experiences to intelligent devices. Synaptics' broad portfolio consists of touch, display, and biometrics products. With solutions designed for mobile, PC and automotive industries, Synaptics combines ease of use, functionality and aesthetics to enable products that help make our digital lives more productive, secure and enjoyable. Synaptics' special awards will be given to the top 4 students with the most innovative projects using human computer interaction.

Top Award of $ 2,000

EBED005   **Wearable Device to Translate American Sign Language (ASL) into English**

         Abishek Stenush Gomes, 16, Belvoir College International, Colombo, Sri Lanka

Second Award of $1500

ENBM063   **TiC- Tongue Interface Communication: Assistive Technology for Severe Impairments**

         Emma Marie Mogus, 17, White Oaks Secondary School, Oakville, Canada

Third Award of $1000

ENBM049   **The Other Side of Me: An Arduino Based Game for Bilateral Integration in Autism Spectrum Disorder**

         Samuel Ferguson, 17, Christian Unified High School, El Cajon, California

Fourth Award of $500

BEHA014   **Going for the Goal: The Effects of Removing Preparatory Information on the Fast and Unconscious Reading of Action Goals in a Computer-Simulated Competitive Interaction**

         Miriam Shira Eisenberg, 18, North Shore Hebrew Academy High School, Great Neck, New York

U.S. Agency for International Development

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

USAID Global Development Innovation award of $10,000

ANIM034   **Novel Mosquito Control: A Chemical-free, Low-Cost Approach for Aedes aegypti Reduction via Specific Range Frequency Sweep**

       Shantanu Jakhete, 16, South Fork High School, Stuart, Florida

ENEV017T   **Desalination by Pervaporation System**

       Haya Ahmed Mohamed, 16, STEM School for Girls, Benisuef, Egypt

       Mdouna Attaalla, 17, STEM School for Girls, Cairo, Egypt

ENEV020   **Addressing Global Water Scarcity with a Novel Hydrogel Based Desalination Technique Using Saponified Starch-g-polyacrylamide and Its Hydrophilic Properties to Harvest Fresh Water with a Low Energy and Chemical Footprint**

       Chaitanya Dasharathi Karamchedu, 16, Jesuit High School, Portland, Oregon

SOFT044   **A Novel Algorithm for Detection of Plasmodium falciparum Parasites in Digitized Blood Samples**

       Rahul Ramesh, 16, Hamilton High School, Chandler, Arizona

Honorable Mention

ENBM017   **Early, Affordable and Rapid Viral Detection: Revolutionizing Home Diagnosis of Dengue and Zika through Lateral Flow Biosensing**

       Yu Ki Sim, 17, National Junior College, Singapore, Singapore

ENBM062   **Cellphone based Optometry using Hybrid Images**

Shreyas Kapur, 17, Modern School Barakhamba Road, Delhi, India

ENEV100T   **Acacia xanthophloea Characterization and Preservation Techniques of Sapwood (Plant Xylem) as a Low Cost Membrane Filtration Device for Arid and Semi-Arid Areas in Kenya**

Mansi Ajey Apte, 15, Shree Cutchi Leva Patel Samaj School, Nairobi, Kenya

Vishal Hareshkumar Dhanji Vekaria, 15, Shree Cutchi Leva Patel Samaj School, Nairobi, Kenya

SOFT030T   **Seismic Alerter (Spanish: Alertador sismico)**

Roxana Cuevas, 17, Liceo Polivalente Hnas Maestras de la Santa Cruz, Laja, Chile

Claudia Poblete, 16, Liceo Polivalente Hnas Maestras de la Santa Cruz, Laja, Chile

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

United States Environmental Protection Agency

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

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

ENEV021   **Design and Implementation of a Sustainable Permeate Gap Membrane Distillation System for Water Purification in the Turkana Basin of Kenya**

Alexis Maria D'Alessandro, 18, Half Hollow Hills High School West, Dix Hills, New York

Alternate trip winner

EGPH027   **Development of a Thermoelectric Generator Using Common Materials**

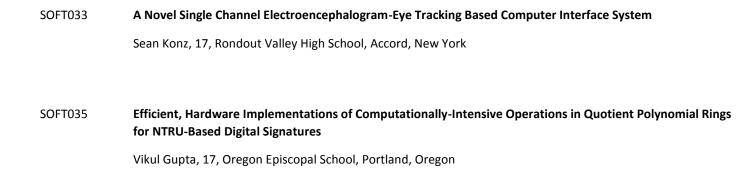Anneka Walton, 16, Hanford High School, Richland, Washington

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.

ENEV007   **Concrete + Acid Mine Drainage = A Sustainable Solution**

Brynn Robert Cauldwell, 17, St Stithians Boy College, Johanesburg, South Africa

ENMC053   **Investigating the Acoustic Flame Interaction with the Effects of Magnetic Field and Plasma**

Omar Abdulrahman Alhazzaa, 17, Najd Nationa School, Riyadh, Saudi Arabia

ENMC072   **Magnetic Stove**

Cagatay Soylu, 16, TED Malatya College, Malatya, Turkey

MATH029   **The Algebra and Geometry of Quasicategories**

Sanath Kumar Devalapurkar, 16, West High School, Torrance, California

MATS042   **Engineering a Better Brain Electrode**

Katelyn Salotto, 18, Dallastown Area High School, Dallastown, Pennsylvania

PHYS001T   **Essential Toolkit for Dancing Droplets**

Gabriel Louis Moreau, 18, Lycee Vauvenargues, Aix en Provence, France

Benjamin Roman, 17, Lycée Vauvenargues, Aix-en-Provence, France

Benjamin Suzzoni, 17, Lycée Vauvenargues, Aix-en-Provence, France

SOFT033   **A Novel Single Channel Electroencephalogram-Eye Tracking Based Computer Interface System**

               Sean Konz, 17, Rondout Valley High School, Accord, New York

SOFT035   **Efficient, Hardware Implementations of Computationally-Intensive Operations in Quotient Polynomial Rings
               for NTRU-Based Digital Signatures**

               Vikul Gupta, 17, Oregon Episcopal School, Portland, Oregon

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

University of Arizona

**Established in 1885, the University of Arizona (UA) is the state's land-grant university. Recognized as a global leader, the UA is
also a leader in research, bringing more than $606 million in research investment each year, and ranking 20th among all public
universities. UA offers over 300 undergraduate and graduate degree programs in 16 academic colleges. UA will award
scholarships to outstanding awardees who have demonstrated robust research for the greater good of society.**

Tuition Scholarship Award

ANIM008   **The Effects of Forest Fires on Stream Invertebrates and Water Quality at Two Different Sites in New Mexico**

               Jillian Gabrielle Serrano, 16, Mission Early College High School, El Paso, Texas

BCHM020   **Converting Tropical Feedstocks into Bio-Ethanol via Enzymatic Hydrolysis and Fermentation by
               Saccharomyces cerevisiae**

               David James Zulli, 17, John Jay Science and Engineering Academy, San Antonio, Texas

BEHA020   **Making the Mind Matter: Stress Mindset Effects on Sleep Quality, Stress Response, Emotion and Cognition in
               the Developing Adolescent Brain and the Role of the Prefrontal-Amygdala Circuit**

               Kashfia Nehrin Rahman, 15, Brookings High School, Brookings, South Dakota

BEHA042   **Understanding Parkinson's Disease: Basal ganglia Dysfunction's Role in the Visual Adaptation of Speech**

Divya Prabhakaran, 17, Plano East Senior High School, Plano, Texas

BMED034 **The Effects of Fetal Troponin T on the Cardiac Remodeling of Hypertrophic Transgenic Hearts**

Jenna Chase Allardice, 16, Academy of Tucson High School, Tucson, Arizona

CBIO039 **Observations of Drug Synergy Mechanisms to Target Intrinsically Disordered Proteins in Viruses**

Ritika Bharati, 17, Hamilton High School, Chandler, Arizona

CELL009 **Regulation of Insulin Pathway Signaling in a Drosophila Model of ALS**

Sanne Marie Casello, 17, Empire High School, Tucson, Arizona

CHEM003 **Development of a Computational Method for Rapid Identification of Organic Molecules for Efficient Solar Energy Conversion**

Anshul Bhatnagar, 17, University School of Milwaukee, Milwaukee, Wisconsin

CHEM048 **Versatile, Efficient, and Facile Functionalization of Poly(p-phenylene oxide) via Azide-Alkyne "Click" Chemistry**

Kailash Raman, 16, Sandra Day O'Connor High School, Phoenix, Arizona

EAEV027 **Analysis of the Relationship between Climate and Pinus elliottii Ring Chronologies, Year Two**

Carlie Taylor, 16, The Villages High School, The Villages, Florida

EBED042 **A Portable Optoelectronic Molecular Identification and Spectral Analysis System for Assessing the Quality, Safety, and Composition of Food and Pharmaceuticals Using Machine Learning**

Eshika Saxena, 14, Interlake High School, Bellevue, Washington

EGCH020 **How Does the Thermal Conductivity of Liquids Affect Heat Absorption in Photovoltaic Troughs?**

Mason Richard Varuso, 17, Patrick F. Taylor Science and Technology Academy, Avondale, Louisiana

EGPH026   **Natural Solar: Production of Biofriendly Naturally Produced Solar Panels**

Lillian Rose Martinez, 17, Taos Academy Charter School, Taos, New Mexico

ENBM005   **Thermoelectric Generation: Preventing Diabetic Foot Ulcers with the Seebeck Effect**

Drew S. French, 16, Madison County High School, Madison, Florida

ENEV097   **Analyzing the Mechanism and Efficiency for Filtering Pb Using Fresh Water Algae, Phase Three**

Amanda Minke, 17, Immaculate Heart High School, Oro Valley, Arizona

MATH045   **Using Patterns Found in the Distribution of Prime Numbers to Assist in Writing a Very Efficient Prime Sieve**

Robert George Barrat, 16, Jefferson High School, Shenandoah Junction, West Virginia

MATS045   **Leg-e-vator: An Answer for Lower Leg Edema, Immobility and Venous Insufficiency**

James Alexander Poyitt, 16, Redeemer Baptist School, North Parramatta, Australia

MCRO056   **Nature vs. Nurture: Do Your Genetics or Environment Affect Your Surface Microbiome More?**

Linnea Lane, 15, Bend Science Station, Bend, Oregon

PHYS009   **Creation of Additional Signal Regions to Increase Signal Sensitivity in the Search for Vector-Like Quarks at the LHC**

Sloan Wayne Kanaski, 18, University High School, Tucson, Arizona

PHYS060   **Holistic Flare Prediction using Aggregated Solar Cycle 23-24 Magnetograms and Intensitygrams**

Zhengdong Wang, 17, Hamilton High School, Chandler, Arizona

PHYS068   **The Sonic Fire Extinguisher**

Shawnee Nicole Wright, 17, Veritas Christian Community School, Sierra Vista, Arizona

PLNT050   **Tissue Culture of the Hawaiian Papaya**

Kacie Kajihara, 17, Kalani High School, Honolulu, Hawaii

ROBO040   **Give Me a Hand**

Ryan Christopher Gross, 16, Spring Mills High School, Martinsburg, West Virginia

SOFT015   **User Authentication Based on Gait Analysis**

Chloe Baker, 16, Lake Braddock Secondary School, Burke, Virginia

TMED004   **The Effects of Nonsteroidal Anti-Inflammatory Agents on Cancer Cells**

Karenna Gulnara Margaret Langhals, 17, Columbus Grove High School, Columbus Grove, Ohio

Arizona residents: $10,000 and Nonresidents & International: $12,000 Renewable for an additional three years under UA's Terms & Conditions.

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 2017. At USciences, we are building on a life sciences legacy started almost two centuries ago as Philadelphia College of Pharmacy. From leading-edge research and developing innovative treatments and cures, to improving lives worldwide, USciences is about moving life forward.

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

CBIO046   **Self Driving Pharma: A Novel Cognitive Knowledge Harvesting Approach to Train a Self-Learning System For Drug Predictive Models through Multi-Dimensional Bio-Entity Feature-Vector Based Topological Data Analyses**

Tanisha Joshi, 17, Evergreen Valley High School, San Jose, California

CELL056   **Testing Valproic Acid and Surfactant Regulation as Potential Therapeutics for Nitrogen Mustard Injury**

James Gordon Gow, 17, Lawrence High School, Lawrenceville, New Jersey

MCRO019   **Enhancement of Beta-lactam Antibiotic Susceptibility by Tannic Acid through Beta-lactamase Inhibition**

Justin Kim, 16, Jericho High School, Jericho, New York

TMED041   **An Effective Drug-Delivery-Mechanism-Based Approach to Clinical Radiosensitization**

Lavanya Sai Kanneganti, 16, duPont Manual High School, Louisville, Kentucky

TMED052   **Alternative Preservation Methods in ex-vivo Bovine Liver**

Brandon Michael Muncan, 16, Queens High School for the Sciences at York College, Jamaica, New York

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

West Virginia University

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

Renewable Tuition Scholarship Awards

BMED005   **The Effects of E-Cigarette Vapor on Drosophila melanogaster**

Lindsay Sophia Poulos, 15, Episcopal School of Jacksonville, Jacksonville, Florida

ENMC051   **Design of a Sounding Rocket for Maximum Altitude**

Victoria Rose Hamlin, 16, Hilton Head Island High School, Hilton Head Island, South Carolina

MATH045   **Using Patterns Found in the Distribution of Prime Numbers to Assist in Writing a Very Efficient Prime Sieve**

Robert George Barrat, 16, Jefferson High School, Shenandoah Junction, West Virginia

MCRO049T **Blowing Smoke: Differential Effects on Oral Bacteria between Vaping and Cigarette Usage**

Devin Srivastava, 17, Spartanburg Day School, Spartanburg, South Carolina

Ian Michael Kusher, 16, Spartanburg Day School, Spartanburg, South Carolina

PHYS048 **Galaxy Clusters, New Discoveries to Fill in the Gaps**

Daniel Matthew Glazer, 17, University School of Milwaukee, Milwaukee, Wisconsin

PHYS057 **Determining the Gravitational Center of the Galaxy Based on Globular Clusters**

Zachary Lee Potter, 16, Signature School, Evansville, Indiana

ROBO040 **Give Me a Hand**

Ryan Christopher Gross, 16, Spring Mills High School, Martinsburg, West Virginia

TMED039 **Bioaerosol Boss: Desquamative and Other Bioaerosols Deactivation Ultra-Violet C Light Irradiation Prototype**

Luke Edward Rapp, 15, Wheeling Park High School, Wheeling, West Virginia

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

Wolfram Research, Inc.

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