



Winner Announcement

****Strict Embargo: Thursday, May 15, 2008, 9:30 p.m. EST****
****Do Not Release Until This Time ****

Intel ISEF 2008 Special Awards Ceremony

Intel International Science and Engineering Fair
Presented by Agilent Technologies

Atlanta, Georgia USA – Society for Science & the Public, in partnership with the Intel Foundation, this evening announced awards at the Intel ISEF 2008 Special Awards Ceremony. Student winners are ninth through twelfth graders who earned the right to compete by winning top prize at a local, regional, state or national science fairs. Special Awards are presented by nearly 70 scientific, professional and educational organizations and include scholarships, summer internships, book and equipment grants and scientific field trips.

The International Science and Engineering Fair is sponsored by Intel and has been administered by Society for Science & the Public (SSP) since its inception in 1950. SSP is a nonprofit organization dedicated to the public engagement in scientific research and education. Our vision is to promote the understanding and appreciation of science and the vital role it plays in human advancement: to inform, educate, inspire.

This information will be posted on the SSP website at www.societyforscience.org immediately following the ceremony.



United States Army

Award of three \$1,000 U.S. Savings Bonds, a certificate of achievement and a gold medallion.

- AS056 **The Effect of the Antibiotics in Marine Sponges on Non-Pathogenic Bacteria**
Bernadette Ann Hritz, 14, Villa Joseph Marie High School, Holland, Pennsylvania
- BE025 **Que? Quoi? Do Languages with Grammatical Gender Promote Sexist Attitudes?**
Benjamin David Wasserman, 17, Roslyn High School, Roslyn Heights, New York
- BI011 **Isolation of the Role of Earthworms in the Chemical Alteration Trajectory of Lignin
in Old and Young Forest Systems**
Russell B. Conard, 18, William Henry Harrison High School, West Lafayette, Indiana
- CB033 **Using Laminin to Promote the Reversal of Myelin Inhibition in Central Nervous
System Neurons**
Daniel George Barson, 17, John Jay High School, Cross River, New York
- CH013 **Fundamental Insight into Carbon Nanotube/Solvent Interactions Leads to the
Discovery of a Novel Method for Maximizing Solubilities in General**
Philip Vidal Streich, 17, Homeschool, Platteville, Wisconsin
- CS036 **A Simplicial Homology-Based Hole Detection Algorithm for Wireless
Sensor Networks**
Vinayak Ramesh, 17, Oak Ridge High School, El Dorado Hills, California
- EA006 **Analyzing Arctic Solar Flux and Ice Extent Loss Projections**
Gwyneth R. Glissmann, 17, Peak to Peak Charter School, Lafayette, Colorado
- EE030 **Bank It to Be Green**
Atalie Danielle Mickelson, 18, Alma High School, Alma, Arkansas
- EM047 **Development of a Management-Focused, Environmental Simulation Engine for
Elephant-Vegetation Dynamics of the Kruger National Park, South Africa**
Rohit Thummalapalli, 16, American Heritage School, Plantation, Florida
- EN038 **Development and Optimization of a Polyvinyl Alcohol Hydrogel for Controlled
Release of Phosphate**
Alexandra L. Ghaben, 15, Central York High School, York, Pennsylvania
- ET024 **Ameliorating Obstacles to the Commercial Production of the Direct
Methanol Fuel Cell**
Joseph Ghilarducci O'Rourke, 17, John Adams High School, South Bend, Indiana
- EV010 **The Influence of Fish Communities on Diurnal Horizontal Migration of
Daphnia Species in Deep Prairie Wetlands**
Megan Marie Miller, 17, Lincoln High School, Thief River Falls, Minnesota
- MA018 **The Nonagon Anomaly**
Katherine Rose Banks, 17, Stuyvesant High School, New York, New York

- ME085 **p53-Dependent Growth Inhibition of Prostate Cancer by Walnut and Pecan Extracts**
Micah Maetani, 17, Kamehameha High School, Honolulu, Hawaii
- MI047 **Evolution of Marine Cyanobacteria in the Red Sea**
Kevin Huang Lin, 17, Falmouth High School, Falmouth, Massachusetts
- PH001 **A Quantum Computational Approach to the Atomic Many-Body Problem**
Yale Wang Fan, 16, The Catlin Gabel School, Portland, Oregon
- PS005 ***Escherichia coli* Uptake by *Spinacea oleracea***
Kelly Nicole Howard, 15, The Villages Charter High School, The Villages, Florida

Award of three \$1,000 U.S. Savings Bonds, to be shared equally by team members, and certificates of achievement and gold medallions.

- CB305 **Mechanochemical Regulation of Cell Behavior: From Nanofibers to Nanoparticles**
Pooja Rajalakshmi Vasudevan, 17, The Wheatley School, Old Westbury, New York
Radha Ramjeawan, 18, Uniondale High School, Uniondale, New York

One all expense paid trip to London International Youth Science Forum, three \$1,000 U.S. Savings Bonds, \$500 from the Association of the United States Army, a gold medallion and certificate of achievement.

- MI017 **Identification of Three New Target Genes for Malaria Vaccine Development by Differential Gene Expression Profiling**
Benjamin Uri Hoffman, 16, Georgetown Day School, Washington, D.C.

Alternate to attend the London International Youth Science Forum

- EN038 **Development and Optimization of a Polyvinyl Alcohol Hydrogel for Controlled Release of Phosphate**
Alexandra L. Ghaben, 15, Central York High School, York, Pennsylvania

An all expense paid trip to Operation Cherry Blossom in Tokyo, Japan. Each trip winner will also receive three \$1,000 U.S. Savings Bonds, \$500 from the Association of the United States Army, a gold medallion and a certificate of achievement.

- CB005 **Programming of Adult Hematopoietic Stem Cells to Differentiate into Retinal Pigment Epithelium Cells Using RPE65 Gene: A Novel Mode of Cell Replacement Therapy for Tissue Specific Repair**
Sabrina Lakshmi Prabakaran, 17, Canterbury School, Fort Myers, Florida

- EE038 **Electromagnetic Levitation: A Digital Control System**
Chris James King, 17, Creek Wood High School, Charlotte, Tennessee

Alternate for the Operation Cherry Blossom trip to Tokyo, Japan

- CS036 **A Simplicial Homology-Based Hole Detection Algorithm for Wireless Sensor Networks**
Vinayak Ramesh, 17, Oak Ridge High School, El Dorado Hills, California

Valid passport required for trip winners.

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

Tuition Scholarship Award in the amount of \$8,000

- AS027 **Natural Mosquito Repellents: The Effectiveness of Botanical Extracts as Repellents Against *Aedes aegypti* Mosquitoes, Year VI**
Taylor Paige Wood, 15, Sam Houston High School, Lake Charles, Louisiana
- BE029 **Independent Conflict-Driven and Expectancy-Driven Mechanisms of Cognitive Control**
Caitlyn Rose Lia, 18, Ossining High School, Ossining, New York
- BI021 **The Application of Potentiometric Response to the Development of a Biosensor for Anthrax-causing *Bacillus anthracis* Spores**
Shirin Bajaj, 17, Syosset High School, Syosset, New York
- CB038 **Mathematical Modeling of a Eukaryotic Circadian Clock**
Alexander Chi-Jan Huang, 17, Plano Senior High School, Plano, Texas
- CH013 **Fundamental Insight into Carbon Nanotube/Solvent Interactions Leads to the Discovery of a Novel Method for Maximizing Solubilities in General**
Philip Vidal Streich, 17, Homeschool, Platteville, Wisconsin
- CS028 **Content-Based Image Retrieval**
David C. Liu, 16, Lynbrook High School, San Jose, California
- EA006 **Analyzing Arctic Solar Flux and Ice Extent Loss Projections**
Gwyneth R. Glissmann, 17, Peak to Peak Charter School, Lafayette, Colorado
- EE044 **Practical Motion Capture for Mixed-Reality Applications**
William Brewton McGrath, 17, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia
- EM030 **The Antimicrobial Characteristics of Metallic Nanoparticles and Their Application in Water Filtration**
Anna Shimshak, 16, University School of Milwaukee, Milwaukee, Wisconsin
- EN052 **Improving Laser Efficiency Using Solid Fluorescent Converters**
Ryan John Clark, 18, Hilton Head Preparatory, Hilton Head Island, South Carolina
- ET024 **Ameliorating Obstacles to the Commercial Production of the Direct Methanol Fuel Cell**
Joseph Ghilarducci O'Rourke, 17, John Adams High School, South Bend, Indiana
- EV038 **Modeling the Toxic Effects of Silver Nanoparticles Under Varying Environmental Conditions**
Joyce Sophia Chai, 17, Palos Verdes Peninsula High School, Rolling Hills Estates, California

- MA026 **Computation of the Alexander-Conway Polynomial on the Chord Diagrams of Singular Knots**
Sana Raouf, 17, Jericho High School, Jericho, New York
- ME061 **A Novel Anti-Microbial Bone Graft Comprising Microencapsulated Antibiotic within a Degradable Polymer Coating**
David Christopher Evans, 16, Hillcrest High School, Midvale, Utah
- MI004 **Synergistically Reversing Oxacillin-Resistance in MRSA by Inhibiting mecA Gene Product (PBP2a)**
Maryam Khadijah Mohammed, 17, Niceville High School, Niceville, Florida
- PH042 **Rotation Curves in Five Dimensions**
David Alex Rosengarten, 18, John L. Miller Great Neck North High School, Great Neck, New York
- PS039 **The Usage of *Camellia sinensis* as a Biopesticide**
Megan Marie Meyer, 17, Hankinson High School, Hankinson, North Dakota

Tuition Scholarship Award of \$8,000 for original research in an important Naval-relevant scientific area
CS043 **A New Model of See-through Vision: Image Reconstruction in Scattering Media from Quantum Exit Probabilities for Aerial, Terrestrial, and Underwater Robot Inspection**
Lucia Mocz, 17, Mililani High School, Mililani, Hawaii

- EE020 **Propellantless Propulsion: Designing a Voltage Dependent Directional Control System for Asymmetrical Capacitors**
Stephen Jerome Trettel, 17, New Prague High School, New Prague, Minnesota
- EE053 **Intelligent Task Coordination with Multiple Robots**
Canin Quinn Christell, 18, Christell Home School, Springfield, Missouri

Team Tuition Scholarship Award in the amount of \$8,000 to be equally divided among the team members
ME309 **Protection of Neurons Against Injury Using Neuroreceptor-Targeting Nanoparticles**
Jared Vega Goodman, 17, Oak Hall School, Gainesville, Florida
Jonathan Wang, 16, Oak Hall School, Gainesville, Florida

Scholarships are payable at \$2,000 a year for four years. Recipients also receive a certificate signed by the Chief of Naval Research and the Vice Chief of Naval Research, and a U.S. Navy memento. Team award winners receive \$1,000 a year for four years.

United States Air Force

Established in 1947, the United States Air Force is one of the seven Uniformed Services of the United States. The mission of the Air Force is to deliver sovereign options for the defense of the United States of America and its global interest -- to fly and fight in Air, Space and Cyberspace. The USAF is the largest and most technologically advanced force in the world. Characterized by science and technology, the Air Force is totally committed to rewarding science projects that exhibit these high standards.

- First Award of \$3,000**
AS013 **Histopathologic Investigation of Carcinogenesis in Planarians Secondary to Ultraviolet C, B & A Exposure, Year Two**
James Edward Fichtelman, 18, Vero Beach High School, Vero Beach, Florida

- BE030 **Cognitive and Implicit Measures of Acculturation in Adolescent Hispanic Americans**
Mary Caitlin Williams, 17, Ossining High School, Ossining, New York
- BI021 **The Application of Potentiometric Response to the Development of a Biosensor for Anthrax-causing *Bacillus anthracis* Spores**
Shirin Bajaj, 17, Syosset High School, Syosset, New York
- CB006 **Exon Prediction Using a Simple Neural Network Approach**
Amy Tai, 16, Oklahoma School of Science and Mathematics, Oklahoma City, Oklahoma
- CH013 **Fundamental Insight into Carbon Nanotube/Solvent Interactions Leads to the Discovery of a Novel Method for Maximizing Solubilities in General**
Philip Vidal Streich, 17, Homeschool, Platteville, Wisconsin
- CS018 **An Optimization Algorithm for Space Mission Design: Dynamically Simulating Energy-Efficient Trajectories**
Erika Alden DeBenedictis, 16, Saint Pius X High School, Albuquerque, New Mexico
- EA025 **The Effects of Geomagnetic Storms on GPS Receivers**
Ian Chan, 16, Williams High School, Plano, Texas
- EE020 **Propellantless Propulsion: Designing a Voltage Dependent Directional Control System for Asymmetrical Capacitors**
Stephen Jerome Trettel, 17, New Prague High School, New Prague, Minnesota
- EM025 **The Effects of *Artemia franciscana* as an Alternative Nitrogen Source for Composting Biodegradable Materials**
Alexa A Lunt, 15, Orion Jr. High, Harrisville, Utah
- EN032 **Regenerative Diesel Fuel Production in a Flex Fuel Vehicle Utilizing Vegetable Oil and Catalytic Hydrocracking**
Andrew Michael West, 18, Conifer Senior High School, Conifer, Colorado
- ET015 **The Application of Humpback Whale Fin Morphology to a Standard Airfoil: Revolutionizing Slow Flight Aerodynamics**
Andrew Kipling Miller, 17, Western Alamance High School, Elon, North Carolina
- EV001 **Environmentally Friendly Outdoor Anthrax Decontamination Strategies**
Brittney Ann English, 17, A Crawford Mosley High, Lynn Haven, Florida
- MA023 **Rocket Science**
Sean Thomas Abrahamson, 14, Piedra Vista High School, Farmington, New Mexico
- ME009 **Alleviating Diabetes Problems: Theoretical Treatments, Insulin Resistance, and Nanotube Devices, Year Three**
Jared David Scholato, 17, Cocoa Beach Junior/Senior High School, Cocoa Beach, Florida
- MI017 **Identification of Three New Target Genes for Malaria Vaccine Development by Differential Gene Expression Profiling**
Benjamin Uri Hoffman, 16, Georgetown Day School, Washington, D.C.

- PH001 **A Quantum Computational Approach to the Atomic Many-Body Problem**
Yale Wang Fan, 16, The Catlin Gabel School, Portland, Oregon
- PS033 **Towards Nitrogen-Fixing Symbioses without Mutual Consent: The Impact of Carbon Limitation on Endophytic Infection of Maize**
Sushant Sundaresh, 18, The Harker School, San Jose, California
- Second Award of \$1,500**
- AS015 **Chicken Embryo Development After Exposure to MMT, A Fuel Additive, Year Two**
Tess Linnea Peterson, 17, Episcopal High School, Jacksonville, Florida
- BE032 **The Devolution of Cooperation: An Examination of Excessive Noise in the Iterated Prisoner's Dilemma**
Thomas McLean Burr, 16, South Fork High School, Stuart, Florida
- BI035 **Enzymatic Hydrogen Production Using *Pyrococcus furiosus*: A Viable Solution for Renewable, Clean Energy, Phase II**
Joseph Robert Stunzi, 18, Clarke Central High School, Athens, Georgia
- CB021 **Combating Muscle Atrophy: A Novel Study of Myofibril Turnover in *Sternopygus macrurus***
Harrison Phu Nguyen, 17, Detroit Catholic Central High School, Novi, Michigan
- CH050 **Biomimetic Nano-Optics**
Fedja Kadribasic, 16, West Boca Raton Community High School, Boca Raton, Florida
- CS023 **Computational Cancer Detection Device Using New Self-Replicating Artificial Intelligence Networks**
Edward Heesung Lee, 18, Hamilton High School, Chandler, Arizona
- EA020 **Mapping Venus: The Use of Magellan Radar Data to Determine the Overall Geologic History of a Circular Low on Venus, How the Area Varies in Space and Time as Well as if the Landform Formed in an Endogenitic or Exogenetic Fashion**
Courtney Catherine Jackson, 15, Cloquet Senior High School, Cloquet, Minnesota
- EE023 **Engineered Anaerobic Digestion Utilizing a Thermophilic Media**
Barnett Samuel Koven, 17, Millburn High School, Millburn, New Jersey
- EM005 **Extracting Oil from Algae Grown in Wastewater for Biodiesel Production, Year Two**
Jennifer Joy VanderWeele, 16, Oregon Episcopal School, Portland, Oregon
- EN057 **A New Approach to Biofilm Inhibition: Incorporation and Controlled Release of Synthetic N-Acylated Homoserine Lactone Compounds from Surfaces**
Suvai Gunasekaran, 17, James Madison Memorial High School, Madison, Wisconsin
- ET007 **Emergency Power Generation for PEM Fuel Cells in Remote Locations**
Yu Linlin Huang, 17, Pettisville Local Schools, Pettisville, Ohio
- EV039 **Development of Biosensors for Detecting Hazardous Chemicals**
Natalie Saranga Omattage, 17, The Mississippi School for Mathematics and Science, Columbus, Mississippi

- MA045 **Different Search Patterns and Their Susceptibility to an Obstacle**
Connie Zhong, 16, Skyline High School, Salt Lake City, Utah
- ME027 **Designing Adeno-Associated Virus Type 2 Nanoparticles as Multivalent Contrast Agents for Diagnostic Imaging**
Kshitij A. Desai, 16, Michael E. DeBakey High School for Health Professions, Houston, Texas
- MI033 **Effects of Water Quality on the Propagation and Growth of *Batrachochytrium dendrobatidis***
Scott Paul Boisvert, 14, Basha High School, Chandler, Arizona
- PH044 **Novel Characterizations of the Static and Kinetic Behavior of Liquid Marbles: A Potential Utility in Digital Microfluidics?**
Nilesh Tripuraneni, 17, Clovis West High School, Fresno, California
- PS022 **Power of a Biological Control Agent: Biological Compensation Suppression of *Convolvulus arvensis* Implementing Host-Specific *Aceria malherbae*: Phase IV**
Kaitlyn Jeanne Lingus, 18, Branson High School, Branson, Colorado

First Place Team Award of \$1,500 for each member

- EE312 **Radio Controlled Reconnaissance: A Bird's Eye View**
Alexander Larson Wold, 15, Armour High School, Armour, South Dakota
Jerald Douglas Farke, 16, Armour High School, Armour, South Dakota

Second Place Team Award of \$1,000 for each member

- EM305 **The Effectiveness of Bioremediation and Biostimulation on Oil Spill Recovery**
Garrett Wade Breaux, 16, Ovey Comeaux High School, Youngsville, Louisiana
Cassandra C. Okoye, 16, Ovey Comeaux High School, Lafayette, Louisiana

Each winner will receive a Medallion, plaque and a certificate of recognition.

United States Coast Guard

The mission of the U.S. Coast Guard Boating Safety Division is to implement programs that minimize the loss of life, personal injury, and property damage of recreational boaters. We present awards to projects that best display potential for improving boating and water safety that may help us further our mission.

First Award of \$5,000

- EA025 **The Effects of Geomagnetic Storms on GPS Receivers**
Ian Chan, 16, Williams High School, Plano, Texas

Second Award of \$3,000

- EV328 **Improved Exhaust System for Two-Stroke Engines: An Effective Way to Obtain Better Air Quality**
Michael Kaergaard Madsen, 19, Vejle Technical High School, Vejle, Denmark
Jesper Lykke Rasmussen, 19, Vejle Technical High School, Vejle, Denmark

Third Award of \$1,000

- AS022 **Repelling Sharks Through the Magnetic Stimulation of the Ampullae of Lorenzini**
Brooks Daniel Ruder, 15, Keystone Upper School, San Antonio, Texas

Fourth Award of \$500

ET018

Advanced Version Anti-drink Driving Device (AVADD)

Kung-Ho Yu, 17, Sheng Kung Hui Li Ping Secondary School, Hong Kong, Region of China

Department of Homeland Security, University Programs Office

Five individual \$5,000 portable undergraduate scholarships, selected from among all of the Intel ISEF categories. In addition, awards will include a paid \$5,000 consecutive 10-week summer research experience at various Department of Homeland Security (DHS) affiliated venues. Recipients must be a U.S. citizen and agree to major in science, technology, engineering or math. DHS is particularly interested in projects where there is a connection with the mission of DHS. This mission is to prevent and deter terrorist attacks and protect against and respond to threats and hazards to the nation.

Scholarship Award of \$5,000 and 10-week summer research experience. Total value is \$10,000

BE030

Cognitive and Implicit Measures of Acculturation in Adolescent Hispanic Americans

Mary Caitlin Williams, 17, Ossining High School, Ossining, New York

CS043

A New Model of See-through Vision: Image Reconstruction in Scattering Media from Quantum Exit Probabilities for Aerial, Terrestrial, and Underwater Robot Inspection

Lucia Mocz, 17, Mililani High School, Mililani, Hawaii

EV039

Development of Biosensors for Detecting Hazardous Chemicals

Natalie Saranga Omattage, 17, The Mississippi School for Mathematics and Science, Columbus, Mississippi

MA045

Different Search Patterns and Their Susceptibility to an Obstacle

Connie Zhong, 16, Skyline High School, Salt Lake City, Utah

PH034

How to Create a Blood Bag Temperature Indicator Using the Smectic Phase of Liquid Crystal Materials

Alyssa Renee Whitehead, 18, Oak Grove High School, Hattiesburg, Mississippi

The required summer research experience at DHS affiliated venues, such as DHS, DHS Centers of Excellence, DHS labs and National labs may be completed during any summer of the individual's undergraduate years.

National Oceanic and Atmospheric Administration - NOAA

"The Pulse of the Planet" award will be awarded to the student whose project best relates to NOAA's mission goals. This student will receive a fully paid internship at a NOAA research lab or an opportunity to work with a researcher on a NOAA vessel at sea, or a field research experience at a National Marine Sanctuary. The winner also receives a plaque, and a certificate signed by the Under Secretary of Commerce for Oceans and Atmosphere.

A fully paid summer internship at a NOAA research lab.

AS073

Resilience/Survivorship of a Red Sea Fringing Coral Reef under Extreme Environmental Conditions: A Four-Year Study

Zaki Daniel Moustafa, 17, A.W. Dreyfoos High School of the Arts, West Palm Beach, Florida

The Winner also receives a plaque, a NOAA ALL Hazards Weather Radio, and a certificate signed by the Under Secretary of Commerce for Oceans and Atmosphere.

National Institute on Drug Abuse, National Institutes of Health

As a component of the National Institutes of Health, NIDA supports most of the world's research on drug abuse and addiction. Scholastic, the world's largest publisher and distributor of children's books and a leader in education technology and children's media, creates quality educational and entertaining materials and products for use in school and at home. NIDA and Scholastic will award projects that focus on better understanding of the mechanisms and behavioral aspects of drug abuse and addiction.

First Award of \$2,500

CB027

The Novel Role of the GluCl α Ion Channel and Diazepam-binding Genes in Alcohol Addiction

Kapil Vishveshwar Ramachandran, 16, Westwood High School, Austin, Texas

Second Award \$1,500

BE048

Video Games: The Next Generation's Addiction

Ethan Garrett Guinn, 17, Moore High School, Moore, Oklahoma

Third Award of \$1,000

BE010

What's In and What's Out: High Schoolers' Perceptions of Coolness

Shelby Marie Raye, 15, Manatee High School, Bradenton, Florida

The 2008 Addiction Science Award is sponsored by the National Institute on Drug Abuse, National Institutes of Health and Scholastic.

Agilent Technologies

Agilent Technologies, the "presented by" sponsor of the Intel International Science and Engineering Fair, offers paid summer internships at Agilent sites that align with the student and his/her background. Agilent is committed to award half of these summer internships at Agilent sites outside of the United States. Agilent's Worldwide community involvement programs, known collectively as Agilent Action, tangibly demonstrates the company's values and commitment to corporate citizenship. Agilent supports programs that are designed to increase students' interest and achievement in science education, with an emphasis on women, and populations under-represented in the technology industry. Agilent Action inspires minds and enriches lives in the communities where Agilent people live and work.

Paid Summer Internship

CS012

The Time Related and HMM-based Emotion Recognition from Facial Expression

Hu He, 18, The High School Affiliated to Renmin University of China, Beijing, China

CS027

MindMouse: A Mind Computer Interface Without Pattern Recognition Based on Biofeedback Training

Nitin Kitchley Egbert, 17, Bellarmine College Preparatory, San Jose, California

These Agilent internships are for a minimum of six weeks, not to exceed eight weeks.

Acoustical Society of America

First Award of \$1,000, in addition the student's school will be awarded \$500 and the student's mentor will be awarded \$250

PH046

Intensity and Temperature Variance in Sonoluminescence

Lyric Elizabeth Gillett, 16, Cornerstone High Homeschool, Houston, Texas

Second Award of \$500, in addition the student's school will be awarded \$200, and the student's mentor will be awarded \$100

CS040 Do You 'ear Wha' I 'ear? Redigitizing Voice Signals into Lower Frequencies to Revolutionize Hearing Assistance Technology
Nicholas Mycroft Christensen, 16, Wetumpka High School, Wetumpka, Alabama

Each winner will also receive a one-year ASA membership.

Albany College of Pharmacy of Union University

These \$5,000 annual tuition scholarships and summer research internships are presented to selected students demonstrating outstanding achievement at the Intel International Science and Engineering Fair. Each award also includes a summer internship in Drug Discovery and Development at the Pharmaceutical Research Institute at Albany College of Pharmacy; which includes travel, living accommodations and a \$1,000 stipend for eight weeks.

Scholarship Award of \$5,000 per year for four years, plus a summer internship and a \$1,000 stipend

BI029 A Novel Smart shRNA System for Disease Diagnosis and Therapy
Yale Stern Michaels, 16, Grant Park High School, Winnipeg, Manitoba, Canada

ME041 Identification of the Molecular Targets Affecting the Action of Amphetamine in the Dopaminergic Pathway
Charlie L Xie, 16, Martin Luther King Jr. Magnet, Nashville, Tennessee

ME056 The Role of EGFR in TGF-beta Induced PAI-1 Gene Expression
Anjali Puttachi, 17, Shaker High School, Latham, New York

ME060 Effect of Nicotine on RB & E2F1 Cell Cycle Regulators in Breast Cancer Cells
Courtney Alexandra Smith, 16, C. Leon King High School, Tampa, Florida

Recipients must be admitted to the College in the Bachelor's degree program in Pharmaceutical Sciences. This annual \$5,000 tuition scholarship is renewable for four years.

American Association for Clinical Chemistry

For the projects that best demonstrate the use of Chemistry to diagnose diseases and to treat patients.

First Award of \$1,500

BI021 The Application of Potentiometric Response to the Development of a Biosensor for Anthrax-causing *Bacillus anthracis* Spores
Shirin Bajaj, 17, Syosset High School, Syosset, New York

Second Award of \$1000

ME031 Genomic Strategy to Refine Prognosis and Treatment of Early Stage Colon Cancer
Shivani Sud, 17, Charles E. Jordan Senior High School, Durham, North Carolina

Third Award of \$500

ME009 Alleviating Diabetes Problems: Theoretical Treatments, Insulin Resistance, and Nanotube Devices, Year Three
Jared David Scholato, 17, Cocoa Beach Jr/Sr High School, Cocoa Beach, Florida

Fourth Award \$250

BI009

**Proteomic Characterization of Extracellular Matrix Using
Sonication-Assisted Digestion**

Aarthi Shankar, 16, Rampart High School, Colorado Springs, Colorado

ME314

Antibody Based Biosensor for the Identification of Viruses

Kaley Kristen White, 18, Edmond North High School, Edmond, Oklahoma

Marc Drayton Ganz, 17, Edmond North High School, Edmond, Oklahoma

**American Association of Physics Teachers and the American
Physical Society**

Top award winners receive a one-year AAPT and APS student membership, a certificate from both AAPT and APS, as well as subscriptions to AAPT "The Physics Teacher" Journal and other APS journals.

First Award of \$1,200

PH063

**A Study of Chaotic Behavior Utilizing the Non-Ohmic Properties of the
P-N Junction**

Michael Anthony Batista, 18, Melbourne Central Catholic High School, Melbourne, Florida

Second Award of \$800

PH046

Intensity and Temperature Variance in Sonoluminescence

Lyric Elizabeth Gillett, 16, Cornerstone High Homeschool, Houston, Texas

Third Award of \$500

PH029

Dancing Water Droplets

Te Hsin Tsui, 18, National Hsinchu Girls' Senior High School, Hsinchu, Taiwan, Chinese Taipei

Certificate of Honorable Mention

PH001

A Quantum Computational Approach to the Atomic Many-Body Problem

Yale Wang Fan, 16, The Catlin Gabel School, Portland, Oregon

PH030

SQIF Setup for Measurements of Extremely Low Absolute Magnetic Fields

Anne Yuri Polyakov, 18, Ward Melville High School, East Setauket, New York

PH044

**Novel Characterizations of the Static and Kinetic Behavior of Liquid Marbles:
A Potential Utility in Digital Microfluidics?**

Nilesh Tripuraneni, 17, Clovis West High School, Fresno, California

Each sponsoring teacher of a student who receives an AAPT and APS award also will receive a certificate.

American Astronomical Society and the Astronomical Society of the Pacific

The Priscilla and Bart Bok First and Second Awards are given jointly by the American Astronomical Society (AAS) and the Astronomical Society of the Pacific (ASP). The main criterion for selecting the two Bok Awards is scientific merit. Observational, instrumental, or theoretical projects are all eligible, as are interdisciplinary projects involving Physics, Mathematics, Computer Science, and Engineering, etc. \$1,000 will be awarded to their high school science departments for use in enhancing their science education program.

Priscilla and Bart Bok First Award of a \$5,000 scholarship

PH042

Rotation Curves in Five Dimensions

David Alex Rosengarten, 18, John L. Miller Great Neck North High School, Great Neck, New York

Priscilla and Bart Bok Second Award of a \$3,000 scholarship

PH040

New Components in Accretion Disks: Evolution of the Lightcurve in WZ Sge

Matthew James Walentosky, 17, Oil City High School, Oil City, Pennsylvania

The awarded funds are intended to be used by the recipients to further their education and research efforts. These awards are funded by a grant from the National Science Foundation and are subject to their approval.

American Chemical Society

The American Chemical Society is a self-governed individual membership organization that consists of more than 158,000 members at all degree levels and in all fields of chemistry. The organization provides a broad range of opportunities for peer interaction and career development, regardless of professional or scientific interests. The programs and activities conducted by ACS today are the products of a tradition of excellence in meeting member needs that dates from the Society's founding in 1876.

First Award of \$4,000

CH013

Fundamental Insight into Carbon Nanotube/Solvent Interactions Leads to the Discovery of a Novel Method for Maximizing Solubilities in General

Philip Vidal Streich, 17, Homeschool, Platteville, Wisconsin

Second Award of \$3,000

CH037

Synthesis and Catalytic Behaviour of Layered Double Hydroxides

Alexander James White, 17, The King's School Chester, Chester, United Kingdom

Third Award of \$2,000

BI011

Isolation of the Role of Earthworms in the Chemical Alteration Trajectory of Lignin in Old and Young Forest Systems

Russell B. Conard, 18, William Henry Harrison High School, West Lafayette, Indiana

Fourth Award of \$1,000

CH018

A Novel Thermodynamic Model for the Synthesis of Multi-Walled Carbon Nanotubes

Christopher Allen Zimmerman, 18, Muhlenberg High School, Laureldale, Pennsylvania

Honorable Mention Award

CB305

Mechanochemical Regulation of Cell Behavior: From Nanofibers to Nanoparticles

Pooja Rajalakshmi Vasudevan, 17, The Wheatley School, Old Westbury, New York
Radha Ramjeawan, 18, Uniondale High School, Uniondale, New York

- CH003 **New Receptors Based on Calixarenes**
Oldrich Hudecek, 20, Masaryk's Secondary School of Chemistry, Prague 1, Czech Republic
- CH025 **Just Say "NO": A Novel Delivery System for the Bioregulatory Agent Nitric Oxide**
Camden Y. Miller, 16, Allen High School, Allen, Texas
- CH040 **Synthesis of a Linker Molecule for Self-Assembled Monolayers**
Philipp Zagar, 18, Hoehere Technische Lehranstalt Wels, Wels, Upper Austria, Austria
- CH043 **Design and Synthesis of Peptidomimetic Antimicrobial Agents**
Lyndon Nuoxi Zhang, 17, Mission San Jose High School, Fremont, California
- CH304 **FtsZ Inhibitors as Novel Chemotherapeutic Agents for Drug-Resistant Tuberculosis**
Amanda Eryn Marinoff, 17, Plainview-Old Bethpage John F. Kennedy High School, Plainview, New York
Janelle Schlossberger, 18, Plainview-Old Bethpage John F. Kennedy High School, Plainview, New York

All award winners and honorable mentions receive a t-shirt and a subscription to "Chem Matters".

American Committee for the Weizmann Institute of Science

The International Summer Science Institute at the Weizmann Institute of Science provides students with an opportunity to work alongside top Weizmann Institute researchers, as well as to learn about life in Israel today.

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

- CH018 **A Novel Thermodynamic Model for the Synthesis of Multi-Walled Carbon Nanotubes**
Christopher Allen Zimmerman, 18, Muhlenberg High School, Laureldale, Pennsylvania

Alternate for trip

- CH005 **New Routes to Nylon Synthesis**
Katherine Elizabeth Robertson, 17, Wells Cathedral School, Wells, Somerset, United Kingdom

Trip and scholarship is held at the Weizmann Institute of Science in Rehovot, Israel July 7 - 31.

Valid passport required for travel.

American Dental Association Foundation

The American Dental Association is the nation's largest dental association and the premier source of oral health information. The ADA has advocated for the public's health and promoted the art and science of dentistry since 1859. The ADA, through the ADA Foundation, is awarding projects which contribute to scientific research relevant to oral health.

First Award of \$2,000

- ME061 **A Novel Anti-Microbial Bone Graft Comprising Microencapsulated Antibiotic within a Degradable Polymer Coating**
David Christopher Evans, 16, Hillcrest High School, Midvale, Utah

Second Award of \$1,000

ME083

A Cell-specific Approach for Early Diagnosis and Targeted Therapy of Oral Cancer

Ashwathi Sarayu Mohan, 18, Northside Health Careers High School, San Antonio, Texas

Third Award of \$500

EN312

Remote Activated Chip-Based Drug Release System Using Nanoparticles as an Anti-Cancer Therapeutic

Sanchita Singal, 17, Herricks High School, New Hyde Park, New York

Mili Mehta, 17, The Wheatley School, Old Westbury, New York

Lara Arielle Fourman, 16, Plainview-Old Bethpage John F. Kennedy High School, Plainview, New York

American Geological 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 that the geosciences play in modern society.

First Award of \$1,500

EA006

Analyzing Arctic Solar Flux and Ice Extent Loss Projections

Gwyneth R. Glissmann, 17, Peak to Peak Charter School, Lafayette, Colorado

Second Award of \$750

EA017

Changes in Lake Superior Ice Cover at Bayfield, Wisconsin

Forrest Larsen Howk, 18, Bayfield High School, Bayfield, Wisconsin

Third Award of \$250

EA010

Montana Evidence of an Extra-Terrestrial Impact Event that Led to the Extinction of the Mammoths in North America

Katelyn Elizabeth Gibbs, 15, Great Falls High School, Great Falls, Montana

AGI will present their winners with a vast selection of related publications including a subscription to "Geotimes" magazine

American Indian Science and Engineering Society

For the project that best represents the relationship between science, mathematics, technology, engineering and American Indian, Alaska Natives or Native Hawaiian Culture.

First Award of \$1,000

EM050

Ghost Nets: Biodegradable or Not? Testing of Agavaceae Fibers, Part II

Rachel Marie Lopez, 16, Rio Rancho High School, Rio Rancho, New Mexico

Second Award of \$500

PS034

A Comparison of DNA in the Family Oryza to Zizania

Sa'Shawna Lone, 17, Fond du Lac Ojibwe School, Cloquet, Minnesota

Winners will also receive a plaque.

American Institute of Aeronautics and Astronautics

The world's forum for aerospace leadership, is please to provide awards for projects which are aligned with the AIAA mission to advance the state of aerospace science, engineering, and technical leadership.

First Award of \$600

EE039

A Self-Navigating Balloon-Payload Recovery System

Andrea Esther Kuklennyik, 17, Collins Hill High School, Suwanee, Georgia

Second Award of \$200

ET015

The Application of Humpback Whale Fin Morphology to a Standard Airfoil: Revolutionizing Slow Flight Aerodynamics

Andrew Kipling Miller, 17, Western Alamance High School, Elon, North Carolina

ET034

The Effect of Winglets on Single Surface--Flex Wing--Hang Glider Induced Drag

Ariel Lyn Evans, 16, Sussex Central High School, Georgetown, Delaware

Each selected student and their teacher will be awarded a one-year membership to AIAA.

American Intellectual Property Law Association

A national bar association constituted primarily of lawyers in private and corporate practice, in government and in the academic community, with more than 17,000 members. The AIPLA represents a wide and diverse spectrum of individuals, companies and institutions involved directly or indirectly in the practice of patent, trademark, copyright, and unfair competition law, as well as other fields of law affecting intellectual property. The AIPLA is proud to nurture the innovation and scientific achievement of young researchers at the Intel ISEF.

First Award of \$1,000

EE032

Research on Autonomous Flight Controller and Low-altitude Robotic Aircraft

Jun Qiu, 18, Shenzhen Senior High School, ShenZhen, Guang Dong, China

MI303

Novel Drug Therapy of Silver Nano Particles to Cure M.R.S.A. Infections

Arif Pyarali, 17, Aga Khan Higher Secondary School, Karachi, Sindh, Pakistan

Zahra Suleman Tejani, 17, Aga Khan Higher Secondary School, Karachi, Sindh, Pakistan

Sara Moez Ali, 18, Aga Khan Higher Secondary School, Karachi, Sindh, Pakistan

Second Award of \$250

AS051

No Feet, No Horse!

Estelle Simon, 14, Ecole Secondaire Fernand-Lefebvre, Sorel-Tracy, Quebec, Canada

CS048

"Tlatoani" Algorithm that Encrypts Braille Code into Barcode

Karen Fabiola Mares Lemus, 18, CBTis 139, San Francisco del Rincon, Guanajuato, Mexico

American Mathematical Society

Karl Menger Award of Excellence

First Award of \$1,000

MA046

Restrictions and Generalizations on Comma-Free Codes

Alexander Lee Churchill, 18, Lincoln East High School, Lincoln, Nebraska

Second Award of \$500

MA022 **Continued Fractions and Orbits of a Linear Fractional Transformation**
Shravani Mikkilineni, 17, Detroit Country Day School, Beverly Hills, Michigan

PH042 **Rotation Curves in Five Dimensions**
David Alex Rosengarten, 18, John L. Miller Great Neck North High School,
Great Neck, New York

Third Award of \$250

MA001 **The DNA Inequality in Non-Convex Regions**
Eric Kerner Larson, 16, South Eugene High School, Eugene, Oregon

MA010 **On the Reducible Quintic Complete Base Polynomials**
Alex Hao Chen, 17, York High School, Yorktown, Virginia

MA017 **Chip-Firing Analysis of Stabilization Behaviors, Hitting Times, and
Candy-Passing Games**
Paul Myer Kominers, 17, Walt Whitman High School, Bethesda, Maryland

MA036 **On Lehmer-Type Questions for Special Classes of Arithmetic Functions**
Matthew Michael Wage, 18, Appleton East High School, Appleton, Wisconsin

Honorable Mention Award

MA009 **Frequency Sequences: Structure and Properties**
Swara Satya Kopparty, 17, Terre Haute South Vigo High School, Terre Haute, Indiana

MA026 **Computation of the Alexander-Conway Polynomial on the Chord Diagrams
of Singular Knots**
Sana Raouf, 17, Jericho High School, Jericho, New York

MA030 **Problem of Ramsey Theory**
Nurlan Taiganov, 16, High School, Ekibastuz, Pavlodar, Kazakhstan

MA032 **Analogue of the Popoviciu's Inequality**
Artem A. Timoshenko, 16, Murmansk Polytechnic Lyceum, Murmansk, Russia

MA042 **Eisenstein Prime Magic Square**
Sarah Lee Sellers, 17, Hedgesville High School, Hedgesville, West Virginia

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

American Meteorological Society

The American Meteorological Society promotes the development and dissemination of information on the atmospheric and related sciences, technologies, applications, and services for the benefit of society. Founded in 1919, AMS has a membership of more than 13,000 professionals, students, and weather enthusiasts. AMS publishes nine journals, sponsors more than 12 conferences annually and offers numerous programs and services. These awards are given for the best projects in the area of atmospheric, and related sciences.

First Award of \$2,000

EA006 **Analyzing Arctic Solar Flux and Ice Extent Loss Projections**
Gwyneth R. Glissmann, 17, Peak to Peak Charter School, Lafayette, Colorado

Second Award of \$1000

EV009 **Impacts from Burning Agricultural Crop Stubble**
Alex Brendan Heeb, 17, Heeb Home School, Chaffee, Missouri

Third Award of \$500

EA021 **Does Water Around Melting Arctic Sea Ice Stratify into Horizontal Thermal Gradients that Help to Insulate the Ice from the Warm Ocean Water?**
Hank Jay Zwally, 15, Centennial High School, Ellicott City, Maryland

Honorable Mention Award

EA003 **Quantitative Analysis of the Correlation between Theta-E Data and Severe Weather Systems**
Michael William Kirlin, 18, Carroll High School, Dayton, Ohio

EA007 **Atmospheric Temperature and Humidity to the Edge of Space**
Molly Elaine Kennon, 16, Cross County High School, Cherry Valley, Arkansas

EV320 **Ozone Pollution: Are Inversions a Factor?**
Candice Fay Schwartzenburg, 15, Saint Joseph's Academy, Baton Rouge, Louisiana
Lynne Olivier Chapman, 16, St. Joseph's Academy, Baton Rouge, Louisiana

Winners receive a certificate, an AMS Journal/Bulletin Archive CD-ROM, 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

For the best projects in the physiological sciences which include cellular physiology, animal physiology and neurophysiology.

First Award of \$1,000

CB021 **Combating Muscle Atrophy: A Novel Study of Myofibril Turnover in *Sternopygus macrurus***
Harrison Phu Nguyen, 17, Detroit Catholic Central High School, Novi, Michigan

Second Award of \$500

CB001 **Role of Calcium/Calmodulin-dependent Protein Kinases in BDNF-induced AMPA Receptor Surface Trafficking**
Diya Dwarakanath, 17, Westview High School, Portland, Oregon

Third Award of \$500

ME019 **Is 4,4' Methyleneedianiline-Induced Vascular Toxicity a Model for Pulmonary Hypertension?**
Dallas James Krentzel, 17, Airline High School, Bossier City, Louisiana

ME033 **The Effect of Extracellular Signaling Molecules on Oligodendrocyte Differentiation, Morphology, Proliferation, and Survival**
Jourdan Brandt Urbach, 16, Roslyn High School, Roslyn Heights, New York

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

American Phytopathological Society

A non-profit, scientific organization devoted to the study of plant diseases and their management. Founded in 1908, the society has grown from 130 charter members to nearly 5,000 plant pathologists worldwide. The

research of the organization's members advances the understanding of the science of plant pathology and its application to plant health.

First Award of \$1,000

MI040

Can We Trace Plant Pathogenic Bacteria? The Stability of pUC Origin Fluorescent Plasmids in *Pectobacterium* spp.

Woonyung Hur, 17, Korean Minjok Leadership Academy, Hoengseong, Gangwon, South Korea

Second Award of \$700

MI035

Evaluation of *Burkholderia pyrrocinia* (FL728) and *Paenibacillus lentimorbus* (FL97) for the Presence of *Bacillus subtilis* Antibacterial Genes

Stephanie Page Hoskins, 15, Lincoln Park Academy High School, Fort Pierce, Florida

Third Award of \$500

EM049

***Fusarium pallidoroseum*, II: Can It Control Water Hyacinth?**

Swathi Soman, 16, Bhavan's B.P. Vidya Mandir, Nagpur, India

Fourth Award of \$300

PS039

The Usage of *Camellia sinensis* as a Biopesticide

Megan Marie Meyer, 17, Hankinson High School, Hankinson, North Dakota

All winners will receive a t-shirt and a one year membership in the APS, which includes on-line access to all three APS journals, image database, and numerous educational materials.

American Psychological Association

The mission of the American Psychological Association is to advance psychology as a science and as a means of promoting health education and human welfare. Based in Washington, D.C., APA is a scientific and professional organization that represents psychology in the United States. With over 148,000 members APA is the largest association of psychologists worldwide. The APA is awarding the best projects representing psychological science.

First Award of \$1,500

BE309

The Effect of Visually Enhanced Medicine Labels on Recall Ability

Reed Hurdle Falkner, 18, Oxford High School, Oxford, Mississippi

Taylor Michael McGraw, 18, Oxford High School, Oxford, Mississippi

Bradley Douglas Shields, 18, Oxford High School, Oxford, Mississippi

Second Award of \$1,000

BE005

A Study of Varying Harmonic Spectrum Exposure on Students' Concentration during Spatial Reasoning Examination as Assessed via Fourier Analyses

Vivian Alice Lee, 17, Vista Ridge High School, Cedar Park, Texas

Third Award of \$500

BE010

What's In and What's Out: High Schoolers' Perceptions of Coolness

Shelby Marie Raye, 15, Manatee High School, Bradenton, Florida

BE018

The Ability to Learn: Learning and Communication between Comet Goldfish

Kaleigh Anne Eichel, 17, Strongsville Sr High School, Strongsville, Ohio

BE032

The Devolution of Cooperation: An Examination of Excessive Noise in the Iterated Prisoner's Dilemma

Thomas McLean Burr, 16, South Fork High School, Stuart, Florida

BE035 **It's A Guy Thing: How Fathers Affect Daughters' Dating Habits**
Emily Rose Summerbell, 16, Collins Hill High School, Suwanee, Georgia

BE304 **A Discussion About Equality: A Gender Study in the Classroom**
Mary Alysandra Patzel, 18, West Salem High School, Salem, Oregon
Jessica Rae Cummins, 17, West Salem High School, Salem, Oregon

American Society for Horticultural Science

First Award of \$1,000

PS025 **Molecular and Cellular Responses under Hypoxic Stress in Rice Cultivars with Different Flooding Tolerance**
Sonya Di-Chiao Juang, 17, Kaohsiung Municipal Girl's Senior High School, Kaohsiung, Chinese Taipei

Second Award of \$500

PS045 **Natural Color from Ixora Flowers**
Lavanya Giriraj, 16, Jawahar Navodaya Vidyalaya, Mandya, Karnataka, India

Third Award of \$250

PS007 **Producing Genetically Engineered Grapevines Harboring Multiple Transgenes**
Bradley Charles Clement, 17, Lake Brantley High School, Altamonte Springs, Florida

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

American Society for Microbiology

The American Society for Microbiology (ASM) is the largest single life science membership organization in the world. Membership has grown from 59 scientists in 1899 to more than 43,000 members today, with more than one third located outside of the United States. The members represent 26 disciplines of microbiological specializations plus a division for microbiology educators. The ASM's awards honors the most outstanding microbiology projects.

First Award of \$2,000

MI038 **Study of 5FOA-Resistant Mutants in *Schizosaccharomyces pombe***
Catherine Anna Hoffman, 17, Hamilton-Wenham Regional High School, South Hamilton, Massachusetts

Second Award of \$1,250

MI034 **Engineering a Novel Gram-Negative Effective Efflux Pump Inhibitor**
Eric Nelson Delgado, 18, Bayonne High School, Bayonne, New Jersey

Third Award of \$750

MI047 **Evolution of Marine Cyanobacteria in the Red Sea**
Kevin Huang Lin, 17, Falmouth High School, Falmouth, Massachusetts

Fourth Award of \$500

MI025 **The Effect of Clodronate on Conjugative Tetracycline Resistance Plasmid Transfer between *Escherichia coli* and *Salmonella typhimurium***
Aaron Christopher Ramsey, 18, Jefferson Forest High School, Forest, Virginia

Fifth Award \$250

- MI004 **Synergistically Reversing Oxacillin-Resistance in MRSA by Inhibiting mecA Gene Product (PBP2a)**
Maryam Khadijah Mohammed, 17, Niceville High School, Niceville, Florida
- MI009 **The Journey to Identify Antibiotic Compounds in New Mexico Lichens**
Rebecca Renee Alexander, 17, Grants High School, Grants, New Mexico
- MI016 **The Effect of UV-C Irradiation on the Growth and Survival of *Bacillus subtilis* Endospores and Vegetative Cells: Limitations Imposed on Panspermia by Solar Radiation**
Parker Denys Vascik, 17, Roanoke Valley Governor's School/ Cave Spring, Roanoke, Virginia
- MI030 **RpoN Regulon in the Virulence of a Cystic Fibrosis (CF) Pathogen**
Chen Sun, 15, A B Lucas Secondary School, London, Ontario, Canada
- MI032 **Detection of Nasal Colonization by MRSA: A Comparison of Identification Methods to Develop an Algorithm for Surveillance and Intervention**
Sarah Elizabeth Hodges, 18, First Academy- Leesburg, Leesburg, Florida
- MI033 **Effects of Water Quality on the Propagation and Growth of *Batrachochytrium dendrobatidis***
Scott Paul Boisvert, 14, Basha High School, Chandler, Arizona

All laureates receive a cash prize and a one-year subscription to *Microbe*, ASM's monthly news magazine, and access to the members' only web resources.

American Society of Pharmacognosy

For projects involving the study of natural products that are in any relevant category areas including Animal Sciences, Biochemistry, Cellular and Molecular Biology, Chemistry, Medicine, Microbiology and Plant Sciences.

First Award of \$500

- BI007 **A Novel Approach for Detecting the Inhibitory Effects of Flavonoids**
Pranali Hemant Dalvi, 15, International Baccalaureate at Bartow High School, Bartow, Florida
- CH046 **Acetylcholinesterase Inhibitors in Herbs as Treatments for Alzheimer's Disease**
Asanka Timothy Nanayakkara, 16, Mississippi School for Mathematics and Science, Columbus, Mississippi
- MI009 **The Journey to Identify Antibiotic Compounds in New Mexico Lichens**
Rebecca Renee Alexander, 17, Grants High School, Grants, New Mexico

American Statistical Association

First Award of \$1,000

- BE017 **Crowding-Out or Crowding-In: What Is the Relationship between Government and Private Funding for Public Libraries?**
Xiaomeng Zeng, 18, West High School, Iowa City, Iowa

Second Award of \$500

CS005

Application of Machine Learning Methods to Medical Diagnosis

Michael S. Cherkassky, 16, Edina High School, Edina, Minnesota

Third Award of \$250

BE309

The Effect of Visually Enhanced Medicine Labels on Recall Ability

Reed Hurdle Falkner, 18, Oxford High School, Oxford, Mississippi

Taylor Michael McGraw, 18, Oxford High School, Oxford, Mississippi

Bradley Douglas Shields, 18, Oxford High School, Oxford, Mississippi

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

American Veterinary Medical Association

The American Veterinary Medical Association established in 1863 is a not-for-profit association representing more than 76,000 veterinarians working in private and corporate practice, government, industry, academia, and uniformed services. Structured to work for its members, the AVMA acts as a collective voice for its membership and for the professional.

First Award of \$1,000 and a plaque

AS008

Thermoregulation of the Zebra (*Equus burchelli*)

Zoegne du Preez, 15, Hoerskool Waterkloof, Pretoria, Gauteng, South Africa

AS013

Histopathologic Investigation of Carcinogenesis in Planarians Secondary to Ultraviolet C, B & A Exposure, Year Two

James Edward Fichtelman, 18, Vero Beach High School, Vero Beach, Florida

AS040

***Phoca hispida* Feeding Ecology and Contaminant Uptake: Insights from Elemental Analyses of Claws**

Elizabeth Olson Ferreira, 16, Fort Richmond Collegiate, Winnipeg, Manitoba, Canada

AS048

The Effects of *Camellia sinensis* on the Development of *Bombyx mori* Pupae

Peter Bau, 15, Chamblee Charter High School, Chamblee, Georgia

EV051

Studying Effects of Natural Enemies on Survival of Monarch Butterfly Larvae (*Danaus plexippus*) to Aid in Monarch Conservation

Emily Anne Nimmer, 17, Breck School, Minneapolis, Minnesota

All winners will also receive a plaque.

Armed Forces Communications and Electronics Association

A non-profit professional organization consisting of 32,000 members worldwide serving the military communications, IT, intelligence and global security communities. The Atlanta Chapter, along with the AFCEA Education Foundation, is proud to support the Intel International Science and Engineering Fair. A \$1000 teaching tool grant will be awarded to each of the sponsoring high school science departments of the winners to enhance their educational programs.

First Award of \$2,500

PH042

Rotation Curves in Five Dimensions

David Alex Rosengarten, 18, John L. Miller Great Neck North High School, Great Neck, New York

Second Award of \$1,500

EE006

A Solar System for the Distillation of Sea Water

Kazem Mazen Kutob, 17, Modern Montessori School, Amman, Jordan

Principal criteria for these awards are scientific merit and creativity in the physical sciences, mathematics, information technology or engineering.

**Ashtavadhani Vidwan Ambati Subbaraya Chetty (AVASC)
Foundation**

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

First Award of \$1,000 U.S. Savings Bond

CH015

The Controlled Release of Lipase from PCL Electrospun Fibers

Angela Ying Lau, 17, Plainview-Old Bethpage John F. Kennedy High School, Plainview, New York

ME031

Genomic Strategy to Refine Prognosis and Treatment of Early Stage Colon Cancer

Shivani Sud, 17, Charles E. Jordan Senior High School, Durham, North Carolina

Second Award of \$500 U.S. Savings Bond

CB005

Programming of Adult Hematopoietic Stem Cells to Differentiate into Retinal Pigment Epithelium Cells Using RPE65 Gene: A Novel Mode of Cell Replacement Therapy for Tissue Specific Repair

Sabrina Lakshmi Prabakaran, 17, Canterbury School, Fort Myers, Florida

CS036

A Simplicial Homology-Based Hole Detection Algorithm for Wireless Sensor Networks

Vinayak Ramesh, 17, Oak Ridge High School, El Dorado Hills, California

EM320

Larvicidal and Insecticidal Properties of *Carica papaya* Leaf Extract Against Mosquitoes

Neha Avinash Kulkarni, 14, Modern English School, Mumbai, Maharashtra, India

Divya Venkataraman, 14, Modern English School, Mumbai, Maharashtra, India

ET025

Kudzu: A Cellulosic Source for Ethanol? Glucose Levels of *Pueraria lobata* Plant Parts as Measured Through Enzyme Hydrolysis and DNS Glucose Assay

Lindsay Marie Stewart, 18, Grove High School, Grove, Oklahoma

MA022

Continued Fractions and Orbits of a Linear Fractional Transformation

Shravani Mikkilineni, 17, Detroit Country Day School, Beverly Hills, Michigan

ME057

Microfluidic Image Cytometry to Detect PI3K Pathway Markers in Brain Cancer

Jane Yoonhae Suh, 16, Palos Verdes Peninsula High School, Rolling Hills Estates, California

MI034

Engineering a Novel Gram-Negative Effective Efflux Pump Inhibitor

Eric Nelson Delgado, 18, Bayonne High School, Bayonne, New Jersey

PH021 **A Three Dimensional Lens with Alternative Unit Cell Design for Negative Refractive Index**
Rahul Kumar Pandey, 16, Rochester Stoney Creek High School, Rochester Hills, Michigan

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

Association for Computing Machinery

ACM, the Association for Computing Machinery, is an educational and scientific society uniting the world's computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the professional's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing for life-long learning, career development, and professional networking.

First Award of \$1,000

CS020 **Developing xuni: a Graphical User Interface Widget Toolkit**
David Christopher Williams-King, 16, Argyll Centre, Edmonton, Alberta, Canada

Second Award of \$500

CS022 **Real-Time Water Wave Simulation with Surface Advection**
Dongyoung Kim, 17, Korean Minjok Leadership Academy, Anheung, Gangwon, South Korea

Third Award of \$300

CS003 **Stegacrypt: A Modular Steganography Framework**
Martin Christoph Maas, 20, Georg Cantor Gymnasium, Halle (Saale), Germany

Fourth Award of \$200

CS043 **A New Model of See-through Vision: Image Reconstruction in Scattering Media from Quantum Exit Probabilities for Aerial, Terrestrial, and Underwater Robot Inspection**
Lucia Mocz, 17, Mililani High School, Mililani, Hawaii

CS308 **The Design and Implementation of Practical Algorithms for Automatic Composite Photographs**
Ken Miura, 17, Shizuoka-Prefectural Hamamatsu-Kita High School, Shizuoka, Japan
Mami Inoue, 17, Shizuoka-Prefectural Hamamatsu Kita High-School, Shizuoka, Japan
Mayu Suzuki, 17, Shizuoka-Prefectural Hamamatsu Kita High-School, Shizuoka, Japan

CS310 **Developing Real-Time Visualization System of Physics Model**
Maxim Gennadievich Gridnev, 17, Physical and Mathematical Lyceum #30, Saint-Petersburg, Russia
Andrey Anatolievich Churinov, 16, Physical and Mathematical Lyceum #30, Saint-Petersburg, Russia
Leonid Andreevich Mashinskiy, 16, Physical and Mathematical Lyceum #30, Saint-Petersburg, Russia

All winners will receive complimentary ACM Student Memberships for the duration of their undergraduate education. The ACM's Student Portal Package also includes ACM's Digital Library.

Association for the Advancement of Artificial Intelligence

Founded in 1979, the Association for the Advancement of Artificial Intelligence (AAAI) is a nonprofit scientific society devoted to advancing the scientific understanding of the mechanisms underlying thought and intelligent behavior and their embodiment in machines. AAAI also strives to increase public

understanding of AI, improve the teaching and training of AI practitioners, and provide guidance about the importance of current AI developments and potential of future directions. AAAI is proud to recognize the best projects in the area of Computer Science with an artificial intelligence component.

First Award of \$1,000

CS026 **Application of Real Time Neural Networks for Use with Data Gloves**
Colby Anne Wilkason, 17, Warner Robins High School, Warner Robins, Georgia

CS044 **So Many Data--So Few Labels: The Effects of Autoencoders on Unlabeled Data for Pattern Recognition**
Thomas Ben Thompson, 17, Huron High School, Ann Arbor, Michigan

Second Award \$500

CS010 **Modeling Evolution: Exploring Computational Biology and Biomodeling**
Dmitry O. Kislyuk, 17, California High School, San Ramon, California

CS014 **Distributed Intelligence**
Dorian Naim Rahamim, 17, Orange High School, Pepper Pike, Ohio

CS028 **Content-Based Image Retrieval**
David C. Liu, 16, Lynbrook High School, San Jose, California

CS033 **Computer ANTimation**
Tobias Jacob Williams, 14, Highland Secondary School, Dundas, Ontario, Canada

CS308 **The Design and Implementation of Practical Algorithms for Automatic Composite Photographs**
Ken Miura, 17, Shizuoka-Prefectural Hamamatsu-Kita High School, Sizuoka, Japan
Mami Inoue, 17, Shizuoka-Prefectural Hamamatsu Kita High-School, Shizuoka, Japan
Mayu Suzuki, 17, Shizuoka-Prefectural Hamamatsu Kita High-School, Shizuoka, Japan

EE053 **Intelligent Task Coordination with Multiple Robots**
Canin Quinn Christell, 18, Christell Home School, Springfield, Missouri

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".

Association for Women Geoscientists

The mission of the AWG is to encourage the participation of women in the geosciences, to exchange educational, technical and professional information, and to enhance the professional growth and advancement of women in geosciences. These awards are presented to projects which exemplify high standards of innovation and scientific excellence in the geosciences, increase awareness of the geosciences, illustrate the interdisciplinary nature of the geosciences and promote sensitivity to the earth's global system.

First Award of \$1,500

EA022 **Gulf Hypoxic Zones: Forecasting with Mathematical and Laboratory Simulations**
Bonnie Joyce McLindon, 16, St. Joseph's Academy, Baton Rouge, Louisiana

Second Award of \$150

- EA005 **X-Ray Fluorescence of Archeological Samples: How Standard Labeling Techniques Affect Data Interpretation**
Anna Rose Johnson, 17, Louisiana School for Math, Science and the Arts,
Natchitoches, Louisiana
- EM033 **Reducing Acid Mine Drainage with Fluoride Treatment**
Sara Marie Joseph, 15, Alton High School, Alton, Illinois

The award winners will also receive a student membership in the AWG organization which includes a newsletter subscription, a certificate, an AWG t-shirt and a copy of the winners' group photograph.

China Association for Science and Technology (CAST)

China Association for Science and Technology (CAST) is the largest organization of scientists and technologists of 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.

Scholarship Award of \$3,000

- AS014 **Can Differences in Fat-Protein Ratios in the Milk of Dairy Cows Indicate Ketosis? A Fourth Year Study**
Joy Lynn Burnham, 16, Okeechobee High School, Okeechobee, Florida
- BI027 **Synthetic Analogs of IGF-1 Receptor Juxtamembrane Domain: Potent Inhibitors of Cancer Cell Growth**
Liv Helena Johannessen, 17, Governor Thomas Johnson High School,
Frederick, Maryland
- CH306 **Syilation of ALPHA-Bromonitrocompounds: A New Approach for the Synthesis of Isoxazolines**
Artem A. Zemtsov, 16, Moscow Chemical Lyceum#1303, Moscow, Russia
Andrey A. Mikhaylov, 17, Moscow Chemical Lyceum #1303, Moscow, Russia
- CS032 **An Approach to Elaborating Control Logics of Robots Using Simulation and Machine Learning**
June Young Lee, 16, Daegu Science High School, Daegu, South Korea
- EE040 **Optimizing Wind Power: Design of a Hybrid Wind Turbine Using Active Solidity Control for Low Wind Speed Power Capture**
Parker Owan, 17, Owan Homeschool, Tucson, Arizona

Coalition for Plasma Science (CPS)

This award will be given to the best project in the broad area of plasmas. Plasma-related topics include, but are not limited to, lighting, display, materials processing, space physics, terrestrial phenomena (lighting, aurora, etc.), fusion, and basic plasma science. Criteria include overall scientific merit, understanding of the problem, and approach to the topic.

First Award of \$1,500

- PH026 **The Creation of a Simple Discharge Device Using an Aspirator**
Misaki Makino, 18, Shibuya Kyoiku Gakuen Makuhari High-School, Chiba, Japan

Drexel University

Drexel University in Philadelphia, Pennsylvania is awarding 8 full tuition scholarships for projects in the categories of Computer Science, Engineering, Medicine and Health and Physics or projects aligned with Drexel's curriculum.

Tuition Scholarship of \$120,000

- CH011 **Polymer Initiators for Reducing Shrinkage and Increasing Cure of Dental Filling Resins**
Nga Man Tang, 17, Northside Health Careers High School, San Antonio, Texas
- CS007 **Development of a Dynamic Virtual Physics Environment**
Edward Taylor Kaszubski, 17, Lake Highland Preparatory School, Orlando, Florida
- ET002 **Harnessing Solar Energy, Year Four: Increasing the Efficiency of a Hybrid Polymer Photovoltaic Cell with Zinc Oxide Nanofibers in Varying Lengths**
Nathan McKay Monroe, 17, Episcopal High School of Jacksonville, Jacksonville, Florida
- ET015 **The Application of Humpback Whale Fin Morphology to a Standard Airfoil: Revolutionizing Slow Flight Aerodynamics**
Andrew Kipling Miller, 17, Western Alamance High School, Elon, North Carolina
- EV014 **Cavemen and Fire: A Probability Simulation on the Impact of Human-induced Factors on Global Warming**
Cesar A. Torres, 17, Americas High School, El Paso, Texas
- EV045 **Further Investigation of Diatoms as Biological Indicators of Pharmaceutical Runoff**
Ronit Batya Roth Abramson, 16, Canyon Crest Academy, San Diego, California
- ME098 **Tiny Shields Yield Big Results**
Amber Lexus Ferguson, 16, Satellite High School, Satellite Beach, Florida
- PH044 **Novel Characterizations of the Static and Kinetic Behavior of Liquid Marbles: A Potential Utility in Digital Microfluidics?**
Nilesh Tripuraneni, 17, Clovis West High School, Fresno, California

Scholarships are renewable for up to 5 years pending maintenance of a 3.0 GPA and full-time status. Each scholarship is valued at \$120,000. Scholarships will go into effect upon admission to the University.

Endocrine Society

First Award of \$1,000

- BI027 **Synthetic Analogs of IGF-1 Receptor Juxtamembrane Domain: Potent Inhibitors of Cancer Cell Growth**
Liv Helena Johannessen, 17, Governor Thomas Johnson High School, Frederick, Maryland

Second Award of \$500

- AS065 **The Role of Maternal Effects and Maternally-Transmitted Endosymbionts in the Diet Restriction Response in Fruit Flies**
Yihe Dong, 17, Cedar Shoals High School, Athens, Georgia

BI037 **The Mechanisms and Actions of Parthenolide on Platelet 5-HT Secretion *in vitro*: Indicating a Possible Pathogenesis of the Migraine**
Sarah Elizabeth Guthrie, 17, Boulder High School, Boulder, Colorado

Honorable Mention Award

AS072 **Neuronal Distribution of Urocortin III in the Fire-bellied Toad, *Bombina orientalis***
Robin Nichol Barawid, 18, Briarcrest Christian High School, Eads, Colorado

CB018 **Levels of sRAGE in AGE-stressed HepG2 Cells**
Johanna Meehyun Lee, 16, Academy for the Advancement of Science and Technology, Hackensack, New Jersey

CB032 **Developing an *in vitro* Method for Testing Genes that Regulate Angiogenesis**
Elizabeth Cai, 17, Briarcliff Manor High School, Briarcliff Manor, New York

CB052 **The Impact of Resveratrol: Natural Antioxidant on Adipose Stem Cell Growth, Differentiation, Survival, and Genomic Stability**
Suraj K. Mishra, 16, Mills E. Godwin High School, Richmond, Virginia

All winners will receive a certificate, a book on the endocrine system and a t-shirt.

Florida Institute of Technology

Florida Institute of Technology is the only private technological University in the southeastern United States. Florida Tech, located on the Space Coast near Kennedy Space Center, offers full undergraduate and graduate programs in engineering, science, psychology, business, and aeronautics.

Scholarship Award of \$12,500 per year, renewable annually

AS069 **The Effects of Reduced Salinity on Barnacle Survival: Implications for Large-Scale Freshwater Diversions**
Christopher Ryan Peterson, 16, Ocean Springs High School, Ocean Springs, Mississippi

BE039 **The Effects of Inquiry-based Teaching on the Percentage of Students Within Subgroups Scoring at "Nearing Proficient" (Grade Level) or Above on the Missouri Assessment Program (MAP) Test at the 7th Grade Level in the Section of Science**
Jordan Elizabeth Stevens, 17, West Platte R-2 High School, Weston, Missouri

CB005 **Programming of Adult Hematopoietic Stem Cells to Differentiate into Retinal Pigment Epithelium Cells Using RPE65 Gene: A Novel Mode of Cell Replacement Therapy for Tissue Specific Repair**
Sabrina Lakshmi Prabakaran, 17, Canterbury School, Fort Myers, Florida

EE047 **Bio-MEMS Radio Frequency Identification (RFID) Device for Systolic and Diastolic Blood Pressure Monitoring**
Joshua Michael Schwartz, 16, Oceanside High School, Oceanside, New York

EE048 **Intelligent Irrigation Control System**
Rui Jin, 16, Scripps Ranch High School, San Diego, California

EE071 **A Low Cost Water Based Evaporative Cooling Device for Computers**
Ambud Sharma, 15, Sunbeam School, Bhagwanpur, Varanasi, Uttar Pradesh, India

- EV003 **The Effect of Bifenthrin on *Palaemonetes pugio* (Grass Shrimp) Using a Flow-Through System to Test Ecotoxicity**
Jonathan Patrick Barnett, 16, La Plata High School, La Plata, Maryland
- EV012 **The Viability of Green Cleaning: A Quantitative Assessment of the Phytoremediation of Copper Effluent Using *Lemna minor***
Emily Felicia Schapira, 17, Nicolet High School, Glendale, Wisconsin
- ME098 **Tiny Shields Yield Big Results**
Amber Lexxus Ferguson, 16, Satellite High School, Satellite Beach, Florida
- MI016 **The Effect of UV-C Irradiation on the Growth and Survival of *Bacillus subtilis* Endospores and Vegetative Cells: Limitations Imposed on Panspermia by Solar Radiation**
Parker Denys Vascik, 17, Roanoke Valley Governor's School/ Cave Spring, Roanoke, Virginia
- MI017 **Identification of Three New Target Genes for Malaria Vaccine Development by Differential Gene Expression Profiling**
Benjamin Uri Hoffman, 16, Georgetown Day School, Washington, D.C.
- PH003 **Mass Measurement with Micromechanical Oscillators**
Saahil Dev Sanon, 15, Vanguard High School, Ocala, Florida

Florida Tech is offering 12 tuition scholarships of \$50,000 each, to be distributed over four years.

Geological Society of America

Since 1888 this society unites thousands of earth scientists from every corner of the globe in a common purpose to study the mysteries of our planet and share scientific findings. The mission of GSA is to be a leader in advancing the geosciences, enhancing the professional growth of its members, and promoting the geosciences in the service of mankind. We are awarding projects demonstrating excellence in investigating Earth Science.

First Award \$2,000

- EA011 **Evidence for a Tsunami Generated by an Impact Event in the New York Metropolitan Area Approximately 2300 Years Ago**
Katherine Thompson Cagen, 17, Horace Mann School, Riverdale, New York

Second Award \$1,500

- EA021 **Does Water Around Melting Arctic Sea Ice Stratify into Horizontal Thermal Gradients that Help to Insulate the Ice from the Warm Ocean Water?**
Hank Jay Zwally, 15, Centennial High School, Ellicott City, Maryland

Third Award \$500

- EA024 **The Description of the Mesozoic Flora of Urey**
Oxana Ayushieva Balzhinimaeva, 16, Duldurga Secondary School, Duldurga, Chita Region, Russia

IEEE Foundation

Sponsored by the IEEE Foundation, the IEEE Presidents' Scholarship is awarded by the IEEE, the world's largest technical professional society, with over 365,000 members in over 150 countries. Given for outstanding achievement in the field of engineering, it includes a \$10,000 scholarship payable over four years for undergraduate study in engineering or a related field.

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

PH013 **Low-Cost Total Internal Reflection Fluorescence Microscopy**
Harikrishna Rallapalli, 16, Amador Valley High School, Pleasanton, California

The winner also receives a plaque, framed certificate and free membership to the IEEE for the duration of the scholarship.

IEEE Computer Society

First Award of \$1,000

CS018 **An Optimization Algorithm for Space Mission Design: Dynamically Simulating Energy-Efficient Trajectories**
Erika Alden DeBenedictis, 16, Saint Pius X High School, Albuquerque, New Mexico

Second Award of \$500

CS008 **A Stream Cipher Algorithm Based on Magic Cube**
Xiao Liu, 18, Northeast Yucai School, Shenyang, Liaoning, China

Third Award of \$350

CS003 **Stegacrypt: A Modular Steganography Framework**
Martin Christoph Maas, 20, Georg Cantor Gymnasium, Halle (Saale), Germany

Team First Award of \$500 for each team member

CS306 **The Computer Analysis of Digital X-Rays to Identify Oral Cavities**
Rebekah Kristine Unsworth, 15, Kingswood Academy, Sulphur, Louisiana
Mary Rochelle Unsworth, 17, Kingswood Academy, Sulphur, Louisiana

Team Second Award of \$400 for each team member

EE304 **Engineering a Modular Infrared Tracking Sensor for Use with the Foster-Miller TALON, a Man-Portable Reconnaissance Robot**
Matthew Hobart Fairbank, 18, Keystone School, San Antonio, Texas
Jonathan Michael Rodriguez, 18, Keystone School, San Antonio, Texas

Team Third Award of \$300 for each team member

Winners will receive a framed certificate, and a one-year free subscription to the CS magazine of their choice. A winner group photo will also be published in an issue of "Computer" magazine.

Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Guadalajara

This institute is one of the most important private universities in Latin America with 100,000 students on 33 campuses across Mexico. Founded in 1978, Campus Guadalajara, is located in the western portion of Mexico and has about 6,500 students in high school, undergraduate and masters degree programs. The Engineering & Architecture School offers nine undergraduate programs in different areas and has excellent infrastructure such as laboratories, library, sports sports, cultural activities and design centers which are dedicated to research in technology fields.

Honorable Mention

- CS048 **"Tlatoani" Algorithm that Encrypts Braille Code into Barcode**
Karen Fabiola Mares Lemus, 18, CBTis 139, San Francisco del Rincon,
Guanajuato, Mexico
- EE077 **Water Saving System with Domotic Technology**
Jorge Oswaldo Gomez, 18, Tecnológico de Monterrey Campus Guadalajara, Zapopan,
Jalisco, Mexico
- EE327 **ELWAST: Electronic Walking Stick with Ultrasonic Sensors for Blind People**
Pedro Jose Sanabria Montero, 19, Colegio Tecnico Profesional Don Bosco, San Jose,
San Jose, Costa Rica
- EM048 **Capsicida**
Marissa Abelino Arias, 17, Colegio de Bachilleres del Estado de Puebla Plantel 6,
San Juan Ixacquixtla, Puebla, Mexico
- EM052 **Chemical Composition of the Unmarketable Avocado Hass (*Persea americana* Mill.)
Seed: Proposal of Potential Possible Agro-industrial Integral Uses**
Pamela Barraza, 18, Tecnológico de Monterrey Campus Guadalajara, Zapopan,
Jalisco, Mexico

Scholarship Award. This scholarship will cover a percentage of the tuition fees for studies in a 5-year program in electronics engineering.

- EE327 **ELWAST: Electronic Walking Stick with Ultrasonic Sensors for Blind People**
Natalia Maria Rodriguez_ Alvarez, 18, Colegio Tecnico Profesional Don Bosco,
San Jose, Costa Rica

This award consist of a 90% scholarship that is equivalent to \$53,200, it covers 90% of the tuition fee for 5 years to study electronics engineering program. The winner of the scholarship must begin the program in August 2008. The student must also meet the admissions requirements of the institute.

Kennesaw State University - College of Science and Mathematics

The Hubert Tino Science Scholarship Award at Kennesaw State University is designed for an outstanding student entering Kennesaw State University to pursue a program of study in one of the following areas: biochemistry, Biology, Biology Education, Chemistry, Chemistry Education, Computer Science or Information Systems.

Scholarship Award of \$1,500 per year for four years

- | | |
|-------|---|
| AS021 | Determining Odor-Preference in Large Milkweed Bugs
Kari Abraham Jackson, 16, Benjamin E. Mays High School, Atlanta, Georgia |
| AS048 | The Effects of <i>Camellia sinensis</i> on the Development of <i>Bombyx mori</i> Pupae
Peter Bau, 15, Chamblee Charter High School, Chamblee, Georgia |
| CS017 | Creating a Better Transparent Encryption Device
John Wilson Dorminy, 17, Sola Fide Homeschool, McDonough, Georgia |
| CS026 | Application of Real Time Neural Networks for Use with Data Gloves
Colby Anne Wilkason, 17, Warner Robins High School, Warner Robins, Georgia |
| EE039 | A Self-Navigating Balloon-Payload Recovery System
Andrea Esther Kuklenyik, 17, Collins Hill High School, Suwanee, Georgia |
| EE041 | Scavenging Power from Wave Motion for Autonomous Buoys
Thomas Frederick Wilkason, 15, Mount de Sales Academy, Macon, Georgia |

Winning student must major in one of the designated science degrees.

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

Formed 50 years ago to develop strong scholarship in Mathematics and 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 \$1,000

- | | |
|-------|--|
| MA011 | Quantitative Evaluation of Cancer Complexity: A Study of Fractal Morphometry, Year Two
Samuel Irvin Kornicks, 16, Vero Beach Senior High School, Vero Beach, Florida |
| MA020 | Translation-Invariant Binary Representations
Akhil Mathew, 16, Madison High School, Madison, New Jersey |
| MA039 | Evolutionary Patterns in the Influenza A Hemagglutinin Protein that Support Interspecies Transmission: A Bioinformatics and Computational Approach
Kevin Kyle Hawkins, 16, GlenOak High School, Canton, Ohio |

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

National Anti-Vivisection Society

For the projects that best promote scientific advancement through methods that do not harm animals, that work to replace live animals with non-animal methodologies, or for animal-based research that benefits animals using non-invasive techniques, or in an observational setting.

First Award of \$5,000

ME031 **Genomic Strategy to Refine Prognosis and Treatment of Early Stage Colon Cancer**
Shivani Sud, 17, Charles E. Jordan Senior High School, Durham, North Carolina

Second Award of \$2,000

BI029 **A Novel Smart shRNA System for Disease Diagnosis and Therapy**
Yale Stern Michaels, 16, Grant Park High School, Winnipeg, Manitoba, Canada

Third Award of \$1,000

CB044 **Overexpression of Aquaporin-1 in Non-Small Cell Lung Cancer**
Sushma Kola, 17, Illinois Mathematics and Science Academy, Aurora, Illinois

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

National Collegiate Inventors and Innovators Alliance/The Lemelson Foundation

Prizes are awarded for creativity, technological innovation and commercial promise. The National Collegiate Inventors and Innovators Alliance will award prizes in 11 different categories, which recognize innovation and invention that addresses critical basic human needs. An additional six prizes will be awarded to one project in each of the following areas: Engineering, Chemistry, Microbiology, Medicine & Health and Computer Science.

Scholarship Award of \$1,000

CH016 **Reducing Formation of Scale with Magnetic Descaler**
Maria Orb, 18, Jogeva Co-Educational Gymnasium, Jogeva, Estonia

CH313 **Production of Highly Resistant and Heat Insulated Brick by Using Waste Boron and Calculating the Provided Energy Saving**
Oguz Koca, 18, Maltepe Military High School, Izmir, Turkey
Utku Durmaz, 18, Maltepe Military High School, Izmir, Turkey

CS044 **So Many Data--So Few Labels: The Effects of Autoencoders on Unlabeled Data for Pattern Recognition**
Thomas Ben Thompson, 17, Huron High School, Ann Arbor, Michigan

EE011 **Energy Conservation Through the Mitigation of Multiple Daylighting Facade Scenarios for Schools**
Bradley T Williams, 17, Bishop McDevitt High School, Harrisburg, Pennsylvania

EE023 **Engineered Anaerobic Digestion Utilizing a Thermophilic Media**
Barnett Samuel Koven, 17, Millburn High School, Millburn, New Jersey

EE035 **Hybrid Electromagnetic Drum Brake System**
Syed Mohd Esmat Hussaini Syed Mohd Ridzuan, 17, Mara Junior Science College, Taiping, Taiping, Perak, Malaysia

- EE047 **Bio-MEMS Radio Frequency Identification (RFID) Device for Systolic and Diastolic Blood Pressure Monitoring**
Joshua Michael Schwartz, 16, Oceanside High School, Oceanside, New York
- EE310 **Washing Machines' Spare Parts Transformed into a Bread Dough Mixer**
Pitter Wesley dos Santos Oliveira, 18, Fundacao Bradesco, Cuiaba, Mato Grosso, Brasil
Cleiton Silva Soares, 19, Fundacao Bradesco, Cuiaba, Mato Grosso, Brasil
Gleberson Sena Souza, 18, Fundacao Bradesco, Cuiaba, Mato Grosso, Brasil
- EN042 **The Actuator**
Michael David, Alexander Peters, 16, Glenlon-Norfolk School, Victoria, British Columbia, Canada
- ME065 **Desert Desiccant: Low Humidity Therapy for Arthritis Pain Relief?**
Mary Lucia Leone Hedberg, 16, North Attleborough High School, North Attleboro, Massachusetts
- MI053 **Germicidal Organics on *Mycobacterium fortuitum***
Bailey Denise Day, 17, Andrews High School, Andrews, Texas

National Taiwan Science Education Center

Trip to Taiwan to attend the Taiwan International Science Fair in February 2008. This award includes a round trip ticket, most meals, accommodations and activity expenses for the winners.

Trip to attend the Taiwan International Science Fair.

- MA021 **Baseball and the Markov Chain Theory**
Kevin Eugene Fritz, 15, Home Educated, Hillsborough, New Jersey
- MA026 **Computation of the Alexander-Conway Polynomial on the Chord Diagrams of Singular Knots**
Sana Raof, 17, Jericho High School, Jericho, New York

Valid passports required for trip winners.

North American Benthological Society

An international scientific organization whose purpose is to promote better understanding of the biotic communities of lake and stream bottoms and their role in aquatic ecosystems. We are awarding projects which contribute to scientific research in these habitats.

First Award of \$600

- AS046 **Biocontrol Potential of Five Freshwater Decapods for a Polyspecific Trematode Vector Snail (Thiaridae: *Melanoides tuberculata*)**
Alexander Mee-Woong Kim, 16, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

Second Award of \$350

- AS029 **Salinity Tolerance of the New Zealand Mudsnailed (*Potamopyrgus antipodarum*) Collected from Young's Bay, Oregon**
Matthew Antony Nugent, 14, Oregon Episcopal School, Portland, Oregon

Third Award of \$250

EV045

Further Investigation of Diatoms as Biological Indicators of Pharmaceutical Runoff
Ronit Batya Roth Abramson, 16, Canyon Crest Academy, San Diego, California

All winners receive a one-year membership in the Society and a subscription to the "Journal of the North American Benthological Society".

Patent and Trademark Office Society

Promotes the US Patent and Trademark system's growth and well-being, promotes and fosters a true appreciation of these systems, recalls our rich heritage of innovation and commerce, and cultivates the highest standards of professional ethics among patent practitioners. The PTO extends this mission to the scientists and engineers of tomorrow. The Special Awards given at the Intel ISEF encourage young inventors to develop new and useful products, and to pursue careers in science and technology.

Grand Award of \$1,000 and a framed copy of the first patent granted in the United States of America

CH013

Fundamental Insight into Carbon Nanotube/Solvent Interactions Leads to the Discovery of a Novel Method for Maximizing Solubilities in General
Philip Vidal Streich, 17, Homeschool, Platteville, Wisconsin

Second Award of \$200

BI041

Metastasis and Tumor Suppressors: Effects of Transference of the Raf Kinase Inhibitor Protein (RKIP) on Suppression of Melanoma Through the ERK-1 Pathways, a Four Year Study
Melanie Paige Kabinoff, 17, Park Vista Community High School, Lake Worth, Florida

CS027

MindMouse: A Mind Computer Interface Without Pattern Recognition Based on Biofeedback Training
Nitin Kitchley Egbert, 17, Bellarmine College Preparatory, San Jose, California

EA002

The Marvelous Magnetosphere III
Gavin Gregory Reen, 16, La Plata High School, La Plata, Maryland

EE044

Practical Motion Capture for Mixed-Reality Applications
William Brewton McGrath, 17, Thomas Jefferson High School for Science and Technology, Alexandria, Virginia

ME004

Effects of Conjugated Linoleic Acid on Human Colon Cancer
Donald Kyle Jones, 17, The Villages High School, The Villages, Florida

MI019

Quest for Affordable Bio-Diesel: Characterizing Microbes for Conversion of the Bio-Diesel By-Product Glycerol
Sarah Elizabeth Stahl, 17, Huntsville High School, Huntsville, Alabama

PH015

Detection of Biomolecules via Coupling of Type-I and Type-II Quantum Dots
Erin Zeqja, 17, Townsend Harris High School, Flushing, New York

Third Award \$150

BI029

A Novel Smart shRNA System for Disease Diagnosis and Therapy
Yale Stern Michaels, 16, Grant Park High School, Winnipeg, Manitoba, Canada

CH008

Fingerprinting with Genipin: A Green Reagent for Protein Detection in Solution and on Surfaces
Shamik Mascharak, 15, Santa Cruz High School, Santa Cruz, California

- CS018 **An Optimization Algorithm for Space Mission Design: Dynamically Simulating Energy-Efficient Trajectories**
Erika Alden DeBenedictis, 16, Saint Pius X High School, Albuquerque, New Mexico
- EN054 **A Novel Approach for Mathematically Modeling Pretargeted Radioimmunotherapy as a Treatment for Colon Cancer**
Ananth Ram, 18, Texas Academy of Mathematics and Science, Denton, Texas
- EV026 **Numerical and Experimental Analysis of a Direct Solar-to-Thermal Energy Conversion System for the Treatment of Water Resources**
Denilson Luz Freitas, 20, Centro Federal de Educacao Tecnologica da Bahia, Vitoria da Conquista, Bahia, Brasil
- ME033 **The Effect of Extracellular Signaling Molecules on Oligodendrocyte Differentiation, Morphology, Proliferation, and Survival**
Jourdan Brandt Urbach, 16, Roslyn High School, Roslyn Heights, New York
- MI034 **Engineering a Novel Gram-Negative Effective Efflux Pump Inhibitor**
Eric Nelson Delgado, 18, Bayonne High School, Bayonne, New Jersey
- PH046 **Intensity and Temperature Variance in Sonoluminescence**
Lyric Elizabeth Gillett, 16, Cornerstone High Homeschool, Houston, Texas

PowerPlus Engineering, Inc.

Founded in 1987, PowerPlus Engineering provides engineering services to the nation's Electricity Utility and Renewable Energy Companies. PowerPlus is presenting an award for the project deemed to make the most significant contribution to sustainable electrical energy.

Award of \$1500

EE040

Optimizing Wind Power: Design of a Hybrid Wind Turbine Using Active Solidity Control for Low Wind Speed Power Capture

Parker Owan, 17, Owan Homeschool, Tucson, Arizona

The award is sponsored by PowerPlus Engineering, Inc.

Psi Chi, The National Honor Society in Psychology

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

First Award \$1,000

BE041

Correlating Anatomical and Behavioral Asymmetry

Shauna Theresa Linn, 18, Baltimore Polytechnic Institute, Baltimore, Maryland

Second Award \$350

BE005

A Study of Varying Harmonic Spectrum Exposure on Students' Concentration during Spatial Reasoning Examination as Assessed via Fourier Analyses

Vivian Alice Lee, 17, Vista Ridge High School, Cedar Park, Texas

Third Award \$150

BE018

The Ability to Learn: Learning and Communication between Comet Goldfish

Kaleigh Anne Eichel, 17, Strongsville Senior High School, Strongsville, Ohio

All winners will receive a Psi Chi Certificate of Recognition.

Ricoh Americas Corporation

Ricoh Americas Corporation is a leading provider of office equipment and software solutions for businesses and assists them in sharing information efficiently and effectively. Ricoh has a long standing environmental mission and commitment to sustainability, bringing corporate, social and environmental responsibilities into balance. This year, for the fourth consecutive year, Ricoh was named to the Global 100 Most Sustainable corporations in the World! The Ricoh Americas Corporation Sustainable Development Awards is awarded to the entries, selected from among all award categories, whose principles and technical innovations offer the greatest potential for increasing our ability to grow environmentally friendly and socially responsible businesses.

Special Recognition Award presented to the projects that display distinction in the theme of environmental sustainability and innovation. Winners of this award receive a RICOH color GelSprinter. The Ricoh printer is ENERGY STAR qualified and consumes less electricity contributing to the reduction of CO2 emissions.

EE040

Optimizing Wind Power: Design of a Hybrid Wind Turbine Using Active Solidity Control for Low Wind Speed Power Capture

Parker Owan, 17, Owan Homeschool, Tucson, Arizona

EM001

Low Cost Single Chambered Microbial Fuel Cell for Harvesting Energy and Cleansing Wastewater

Ashutosh Patra, 16, Sunset High School, Portland, Oregon

Ricoh Sustainable Development Award of \$25,000

EM014

The Hollow Frame Fence, Year Seven: Investigations of Innovative Snow Fence Designs to Maximize Snow Capture for Water Conservation and Reclamation in Industrial Settings

Erica Elizabeth David, 18, Pinedale High School, Pinedale, Wyoming

EV328

Improved Exhaust System for Two-Stroke Engines: An Effective Way to Obtain Better Air Quality

Michael Kaergaard Madsen, 19, Vejle Technical High School, Vejle, Denmark

Jesper Lykke Rasmussen, 19, Vejle Technical High School, Vejle, Denmark

Sigma Xi, The Scientific Research Society

For the team projects that best exemplify the interdisciplinary aspects of scientific and engineering research.

First Award of \$1,000

EN308

Improving the Feasibility of Avalanche Gain X-Ray Detectors

Shai Matthew Chester, 17, Yeshiva University High School for Boys, New York

Elie Joshua Bochner, 18, Yeshiva University High School for Boys, New York

Second Award of \$600

EN315

New Particleboards by Objects Un-Benefit

Pheemadej Prasitwarawej, 15, Montfort College Chiangmai of Thailand,
Chiangmai, Thailand

Tanavorakit Bangkeaw, 15, Montfort College Chiangmai of Thailand,
Chiangmai, Thailand

Manapas Hararak, 15, Montfort College Chiangmai of Thailand,
Chiangmai, Thailand

Third Award of \$300

EN303

Nanofabrication with Focused Sunlight

Ye Zhao, 19, NUS High School of Mathematics and Science, Singapore, Singapore

Weichao Zhai, 19, NUS High of Mathematics and Science, Singapore, Singapore

Each member of the winning teams will receive a certificate of recognition and a one-year subscription to "American Scientist". The school library of each winning team member will also receive a one-year subscription to "American Scientist".

Society of Exploration Geophysicists

For projects that display excellence related to the geophysical sciences.

Distinguished Achievement Award of \$1,500 to be divided equally by the team members, and a trip to the SEG International Exposition and Annual Meeting.

PH309

Construction of a Mechanical Prototype of a Microtremor Recorder Based on Electromagnetic Induction

Adrian Tomenio Patacsil, 17, Philippine Science High School, Quezon,
Metro Manila, National Capital, Philippines

Marvin Paolo Gonzales Ambrosio, 18, Philippine Science High School, Quezon,
Metro Manila, National Capital, Philippines

Rachel Ruth Yabut Cahilig, 16, Philippine Science High School, Quezon,
Metro Manila, National Capital, Philippines

Award of Merit of \$500

EA020

Mapping Venus: The Use of Magellan Radar Data to Determine the Overall Geologic History of a Circular Low on Venus, How the Area Varies in Space and Time as Well as if the Landform Formed in an Endogenetic or Exogenetic Fashion

Courtney Catherine Jackson, 15, Cloquet Senior High School, Cloquet, Minnesota

Award of Merit of \$250

EA013

A New Earth Magnetic Field Cause Pattern of the Same Direction Multi-vortices in the Outer Core and Experimental Researches

Yuyang Wang, 19, Jilin Provincial Experimental School, Changchun, Jilin, China

PH023

Does Wavelength Affect the Diffraction Pattern of Laser Radiation?

Michael Vincent Di Mascio, 16, Waynesville High School, Waynesville, Ohio

Team award of \$500 to be divided equally among team members.

PH311

Mathematically Modeling and Optimizing the Power Output of a Magnet/Wire Coil System in Order to More Efficiently Harness Energy from Ocean Waves

Scott Lanyon Fleming, 16, West High School, Salt Lake City, Utah

Evan Bock Clark, 16, West High School, Salt Lake City, Utah

S.P.I.E.-The International Society for Optical Engineering

Advancing the science and application of light, S.P.I.E. is the largest international not-for-profit society in optics, photonics, and imaging with 17,000 individual members, including 3,500 students, and representing 86 countries. S.P.I.E. also supports Intel ISEF affiliated science fairs to help inform students about the educational and career possibilities in the exciting and growing field of optical engineering. S.P.I.E. presents these Intel ISEF awards for the best projects in the area of Optics and Photonics Engineering.

First Award of \$2,500

PH012

One Dimensional Polymeric Photonic Crystal Lasers: Fabrication and Characterization

Dora Christine Huang, 16, Hathaway Brown School, Shaker Heights, Ohio

Second Award of \$1,500

PH013

Low-Cost Total Internal Reflection Fluorescence Microscopy

Harikrishna Rallapalli, 16, Amador Valley High School, Pleasanton, California

Third Award \$1,000

PH303

Development of Three Dimensional Photonic Integrated Circuits through a Bottom-Up Approach

Tinya Cheng, 17, Townsend Harris High School, Flushing, New York

Nischay Kumar, 17, Townsend Harris High School, Flushing, New York

S.P.I.E. has distributed nearly \$3 million dollars in individual scholarships and institutional grants. This ambitious effort reflects the Society's commitment to education and to the next generation of optical scientists and engineers.

States United for Biomedical Research (SUBR)

For the top biomedical projects that best demonstrate the goal of advancing human and/or veterinary medicine. SUBR is a network of nonprofit associations who have joined forces to promote health through science and education, to promote public understanding and increase appreciation of the values of biomedical research, including humane care and use of research animals, and provide access to accurate information about biomedical research and its benefits.

First Award \$2,500

CB005

Programming of Adult Hematopoietic Stem Cells to Differentiate into Retinal Pigment Epithelium Cells Using RPE65 Gene: A Novel Mode of Cell Replacement Therapy for Tissue Specific Repair

Sabrina Lakshmi Prabakaran, 17, Canterbury School, Fort Myers, Florida

Second Award \$1,000

AS047

Effects of Infusion Duration on the Acquisition of Cocaine Administration

Kevin Thornton, 18, Miller Grove High School, Lithonia, Georgia

ME050

Muscle Adaptation in Response to Voluntary Exercise: Part II, Biochemistry and Genetic Alterations

Claci Camille Ayers, 14, Warren Central High School, Bowling Green, Kentucky

In addition, a \$1,000 grant is awarded to the teacher of the SUBR first place award winner.

United Technologies Corporation

United Technologies Corporation (UTC) is a diversified company whose business units include Carrier heating and air conditioning, Hamilton Sundstrand aerospace systems and industrial products, Otis elevators

and escalators, Pratt & Whitney aircraft engines, Sikorsky helicopters, UTC Fire & Security protection services, UTC Power fuel cells, and the United Technologies Research Center. On behalf of our 225,600 employees we are proud to recognize 8 projects for excellence in science and engineering. Each winning project will receive \$2,000 in shares of UTC common stock.

UTC Stock with an approximate value of \$2,000

- CH013 **Fundamental Insight into Carbon Nanotube/Solvent Interactions Leads to the Discovery of a Novel Method for Maximizing Solubilities in General**
Philip Vidal Streich, 17, Homeschool, Platteville, Wisconsin
- CH303 **Synthesis, Characterization, and Application of $[\text{Re}_6(\mu_3\text{-Se})_8(\text{PET}_3)_{6-n}(\text{stpy})_n]^{2+}$ Rational Design and Synthesis of Precursors to Cluster Arrays by Photodimerization**
Eva Megan Nichols, 18, Catalina Foothills High School, Tucson, Arizona
Mary Xue Wang, 17, Catalina Foothills High School, Tucson, Arizona
- EE040 **Optimizing Wind Power: Design of a Hybrid Wind Turbine Using Active Solidity Control for Low Wind Speed Power Capture**
Parker Owan, 17, Owan Homeschool, Tucson, Arizona
- EE045 **Methods to Improve Solar Cell Efficiency with Experimental Demonstration, Mathematical Modeling, and Application**
Xiya Zhu, 17, Southside High School, Greenville, South Carolina
- EE327 **ELWAST: Electronic Walking Stick with Ultrasonic Sensors for Blind People**
Pedro Jose Sanabria Montero, 19, Colegio Tecnico Profesional Don Bosco, San Jose, San Jose, Costa Rica
Natalia Maria Rodriguez Alvarez, 18, Colegio Tecnico Profesional Don Bosco, San Jose, Costa Rica
- EN029 **An Innovation for Microbial Fuel Cells: Anode Variation in a Novel Continuous Flow System Utilizing Tubular Cathode Technology**
Daniel John Slotcavage, 17, Ephrata Senior High School, Ephrata, Pennsylvania
- MA018 **The Nonagon Anomaly**
Katherine Rose Banks, 17, Stuyvesant High School, New York
- PH029 **Dancing Water Droplets**
Te Hsin Tsui, 18, National Hsinchu Girls' Senior High School, Hsinchu, Taiwan, Chinese Taipei

Each winner will also receive a plaque, a pen, and the United Technologies Corporation Annual Report. Common stock award to be divided among team members.

University of the Sciences in Philadelphia

Scholarships to finalists from the following categories: Biochemistry, Cellular and Molecular Biology, Chemistry, Computer Science, Environmental Science, Medicine & Health, or Microbiology.

Tuition Scholarship ranging from \$6,000 to \$9,000 per year for four, five or six years, depending upon the degree program.

- AS025 **Refining the Establishment of Left/Right Asymmetry in the Nervous System of *Caenorhabditis elegans***
Pukar Hamal, 16, Forest Hills High School, Forest Hills, New York

- CB003 **Vaccines for Cancer? The Effect of Signal Peptides on DNA Vaccines for Melanoma**
Sanjay Maruthi Kishore, 17, Radford High School, Radford, Virginia
- CB019 **A Numerical Model of Late-Spiking Neurons**
Fiona Winifred Wood, 16, North Haven High School, North Haven, Connecticut
- ME033 **The Effect of Extracellular Signaling Molecules on Oligodendrocyte Differentiation, Morphology, Proliferation, and Survival**
Jourdan Brandt Urbach, 16, Roslyn High School, Roslyn Heights, New York

Scholarship will go into effect upon the recipient's enrollment to any one of the degree programs offered at USP and are renewable for the length of the degree program provided the recipient maintains a cumulative GPA of 3.0.

Vacuum Technology Division of the American Vacuum Society

First Award \$1,000

- PH015 **Detection of Biomolecules via Coupling of Type-I and Type-II Quantum Dots**
Erin Zeqja, 17, Townsend Harris High School, Flushing, New York

The school science department of each winner will receive \$500, and the student's advisor will receive \$250.