



## Winner Announcement

**\*\*Strict Embargo: Thursday, May 17, 2007, 9:00 p.m. EDT\*\***  
**\*\*Do Not Release Until This Time \*\***

### **Special Awards Ceremony sponsored by Alcatel-Lucent**

**Intel International Science and Engineering Fair 2007**  
**Presented by Agilent Technologies**

**Albuquerque, New Mexico, USA** -- Science Service, in partnership with the Intel Foundation, this evening announced awards at the Intel ISEF 2007 Special Awards Ceremony sponsored by Alcatel-Lucent. 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 fair. Special Awards are presented by over 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 Science Service since its inception in 1950. Science Service is a non-profit organization dedicated to advancing the understanding and appreciation of science among people of all ages.

This information will be posted on the Science Service website at [www.sciserv.org/isef](http://www.sciserv.org/isef) immediately following the ceremony.

## Acoustical Society of America

### Award of \$1,000

AS057

**Calls in the Wild: Vocalizations of the Red-cockaded Woodpecker**

Michael Tyler Wham, 17, Sterling Ridge Home School, Woodlands, Texas

### Honorable Mention Award

CS030

**Acoustic Music Similarity Analysis**

David C. Liu, 15, Lynbrook High School, San Jose, California

EN046

**Manipulating the Diffraction of Traffic Noise**

Douglas Charles Niemann, 15, duPont Manual High School, Louisville, Kentucky

EN307

**A Novel Method to Measure the Speed of Sound in the Cornea**

Aman Sarup, 17, Ossining High School, Ossining, New York

Palak Patel, 17, Sayville High School, West Sayville, New York

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

## Agilent Technologies

Agilent Technologies, the presented by sponsor of the Intel International Science and Engineering Fair, offers eight paid summer internships at an Agilent site that aligns with the student and his/her background. These internships are a minimum of six weeks, not to exceed eight weeks. Agilent is committed to award four of these summer internships at Agilent sites outside of the United States.

### Paid Summer Internship

BI015

**A Novel Cyclodipeptide with a Significant Anti-tumor Activity from a Marine *Bacillus***

Heng Jiao, 17, Shanghai Yanan High School, Shanghai, China

CB017

**Heterologous Expression of a Bionanowire Subunit, PilA, in *E. coli***

Abigail Frances Groff, 18, Conestoga Valley Senior High School, Lancaster, Pennsylvania

CS013

**Construction of Virtual Axonal and Dendritic Morphology Based on Properties Extracted from Classes of Neurons**

Katja Miller, 18, Christian-Gymnasium Hermannsburg, Hermannsburg, Germany

EE010

**The Dirt on Baseball: Standardizing the Baseball Mudding Process**

Cameron Kruse, 17, Homeschool, Colorado Springs, Colorado

EE039

**Alarm System for Drowning in Swimming Pools**

Jie Jin, 18, The High School Affiliated to Renmin University, Beijing, China

ME007

**Development of a Novel Approach for Applications in Preimplantation Genetic Diagnosis of Duchenne Muscular Dystrophy**

Amelia Nong Shin Chang, 18, Raffles Junior College, Singapore, Singapore

ME052

**A Novel Pathway for PTEN Chemosensitization**

Yuyang John Mei, 17, Monte Vista High School, Danville, California

PH002      **Cosmic Rain: Investigating Particles from Space**  
Holly Reid Batchelor, 17, The Mary Erskine School, Edinburgh, Scotland,  
United Kingdom

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.

## Albany College of Pharmacy of Union University

This \$5,000 annual tuition scholarship and summer research internship is presented to selected students demonstrating outstanding achievement in the area of Biomedical Sciences at the Intel ISEF. This 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

BI016      **Non-Invasive Transdermal Drug Delivery**  
Shruthi Baskaran, 17, Kennewick High School, Kennewick, Washington

CH024      **A Novel Approach to Rapid Diagnosis of Cancer**  
Richard J. Li, 16, Monte Vista High School, Danville, California

ME025      **The Elution of Iodine Out of a Hydrophilic Wound Dressing**  
Russell Lee Slater, 16, Greenwich High School, Greenwich, Connecticut

ME312      **Detecting Cancer in Living Tissue with Single-Cell Precision**  
Alex Shlomo Ramek, 17, Hebrew Academy of the Five Towns & Rockaway,  
Cedarhurst, New York  
Adam Chaplin Fields, 17, Jericho High School, Jericho, New York

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 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

PH048      **Neutron Activation Analysis Using an Inertial Electrostatic Confinement Fusion Reactor**  
Thiago David Olson, 17, Stoney Creek High School, Rochester Hills, Michigan

Second Award of \$800

PH055      **That Flocking Convection**  
Atticus Bergman, 17, Fairview High School, Boulder, Colorado

**Third Award of \$500**

PH019      **Development of an Inverted Optical Tweezers with Full Motional Control**  
Hamsa Sridhar, 17, Kings Park High School, Kings Park, New York

**Certificate of Honorable Mention**

PH002      **Cosmic Rain: Investigating Particles from Space**  
Holly Reid Batchelor, 17, The Mary Erskine School, Edinburgh, Scotland,  
United Kingdom

PH006      **Testing the Mettle of Metallic Glass**  
Leslie Ann Spahr, 17, Satellite High School, Satellite Beach, Florida

PH031      **The Effect of Local Topography on the Equation of Time**  
Nicholas Elden Allen, 15, Northridge High School, Layton, Utah

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.

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

PH029      **Period Analysis of Cataclysmic Variable X10 and Its Implications on the Origin  
of Low States**  
Temple Mu He, 18, Troy High School, Troy, Michigan

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

PH014      **Variation in Star Formation Rate from Galaxy Cluster Center for cl1037**  
Emily Brook Petroff, 16, Oregon Episcopal School, Portland, Oregon

The awarded funds are intended to be used by the recipients to further their education and research efforts. \$1,000 is also awarded to their high school science departments for use in enhancing their science education programs. 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 Place Award of \$4,000**

CH041      **A New Model for Hydrophobic Hydration**  
Sarah Elizabeth Marzen, 17, Thomas Jefferson High School for Science and Technology,  
Alexandria, Virginia

**Second Place Award of \$3,000**

CH015      **DNA Electrophoresis on Nanoporous Polyethersulfone Membrane Surfaces**  
Michael Ding, 17, Glen Cove High School, Glen Cove, New York

**Third Place Award of \$2,000**

CH013      **Determining Carbon Nanotubes' Thermodynamic Solubility: The Missing Link to a Practical Supermaterial?**  
Philip Vidal Streich, 16, Homeschool, Platteville, Wisconsin

**Fourth Place Award of \$1,000**

ET007      **Solving the Hydrogen Storage Problem: Metal Ammines as a High Density, Carbon-Neutral Hydrogen Carrier**  
Ariah Aram Klages-Mundt, 17, Winona Senior High School, Winona, Minnesota

**Honorable Mention Award**

BI002      **Enzymatic Hydrogen Production: Expression of the Hydrogenases from the Hyperthermophile *Pyrococcus furiosus***  
Joseph Robert Stunzi, 17, Clarke Central High School, Athens, Georgia

BI005      **Isolation of Diosgenin**  
Andrew Derry-Farrell, 14, Bradenton Preparatory Academy, Bradenton, Florida

BI019      **The Synthesis and Characterization of Innate Immunity Inhibitors**  
Stacy Gail Feinsot, 17, Lawrence High School, Cedarhurst, New York

CH030      **Synthesis of Supramolecular Self-assembling Macromolecular Structures**  
Matthew Bret Weiss, 18, Breck School, Golden Valley, Minnesota

CH039      **Bright, Luminescent Silicon Nanoparticles for Biological Applications**  
Alexandra Maria Curtis, 17, Davis Senior High School, Davis, California

CH046      **3-bromo-5,6-dihydro-[4H]-1,2-oxazine-N-oxides: Synthesis, Properties and Application**  
Leonid V. Romashov, 16, The State Educational Establishment Lyceum #1303, Moscow, Russia

All award winners and honorable mentions receive a t-shirt and a subscription to "Chem Matters".  
The sponsoring teachers and schools of the awardees also receive a certificate.

## American Association for Clinical Chemistry

For the projects that best demonstrate the use of Chemistry to diagnose diseases or abnormal states in humans and/or animals.

**Award of \$1,000**

ME312      **Detecting Cancer in Living Tissue with Single-Cell Precision**  
Alex Shlomo Ramek, 17, Hebrew Academy of the Five Towns & Rockaway, Cedarhurst, New York  
Adam Chaplin Fields, 17, Jericho High School, Jericho, New York

**Award of \$500**

ME042      **Detecting Cancer on the Single-Cell Level Using Biomechanics**  
Kristin Lesline Hall, 18, Smithtown High School East, St. James, New York

**Award of \$300**

CH012

**Selective Elemental Determination Within Multiple Molecular Compounds Through Gas Chromatography**

Stephen Michael Bergin, 18, St. Pius X High School, Albuquerque, New Mexico

**Honorable Mention Award \$100**

CH024

**A Novel Approach to Rapid Diagnosis of Cancer**

Richard J. Li, 16, Monte Vista High School, Danville, California

CH039

**Bright, Luminescent Silicon Nanoparticles for Biological Applications**

Alexandra Maria Courtis, 17, Davis Senior High School, Davis, California

ME058

**Design and Generation of a Diverse Virtual Chemical Library**

Jeremiah James Bearss, 18, American Fork High School, American Fork, Utah

**American Committee for the Weizmann Institute of Science**

All expense paid trip for five weeks and scholarship to the Bessie Lawrence International Summer Science Institute at the Weizmann Institute of Science in Rehovot, Israel. The dates of the program are July 3-July 28.

PS016

**Aloe - A Bitter Pill for Ticks to Swallow**

Tanja Kellerman, 18, Citrusdal High School, Citrusdal, Western Cape, South Africa

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

**American Dental Association Foundation**

For the best exhibit with application to dental research.

**Award of \$2,000**

ME049

**Probing for Cancer with Smart shRNA**

Yale Stern Michaels, 15, Grant Park High School, Winnipeg, Manitoba, Canada

**Award of \$1,000**

EE307

**Increased Precision, Versatility and Control in Laser-based Surgeries Through the Intersection of Superimposed Varied Frequency Lasers**

Fei Chen, 17, School of Science and Technology, Beaverton, Oregon

William Decker Neiswanger, 16, School of Science and Technology, Beaverton, Oregon

**Award of \$500**

BI015

**A Novel Cyclodipeptide with a Significant Anti-tumor Activity from a Marine *Bacillus***

Heng Jiao, 17, Shanghai Yanan High School, Shanghai, China

## 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 of the geosciences to mankind and society.

### First Award of \$1,000

EA007

**Developing ESR Dating for Crocodylian Teeth: Geochemical Analyses of Iron Uptake in Crocodylian Hydroxyapatite**

Herman Suhail Khan, 17, Staten Island Technical High School, Staten Island, New York

### Second Award of \$250

EA023

**Chemical Aspects of the Impact Process**

Terik Daly, 17, Oak Grove High School, San Jose, California

### Honorable Mention Award, a one year subscription to "Geotimes"

EA009

**Topographic Features and Formation Process of Mamigasaki Alluvial Fan, Northern Japan, based on the Field Observations and Flume Experiments**

Midori Kanno, 16, Yamagata Prefectural Yamagata Higashi High School, Yamagata City, Yamagata Prefecture, Japan

All three AGI student winners will receive a certificate and an AGI publication.

## 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

PS308

**An Analysis of Plants Used by American Indians for Antimicrobial Effectiveness, A Second Year Study**

Shana Marie Wolff, 17, Cheyenne Central High School, Cheyenne, Wyoming

Elizabeth Marie Cochran, 17, Cheyenne Central High School, Cheyenne, Wyoming

### Second Award of \$500

AS055

**To Diet or Not to Diet: The Effects of Aspartame on Mortality Rate and Memory Retention in *Planaria***

Nathan Paul Marquez, 17, Miami High School, Miami, Oklahoma

Winner will also receive a plaque and an AISES pull-over.

## American Intellectual Property Law Association

First Award of \$1,000 and a certificate

CH307

**A Novel Technique for the Fabrication of Alginate Microspheres for the Sustained Release of Lidocaine**

Vikas Anand, 17, Jericho High School, Jericho, New York

Esther Bora Kwak, 17, Jericho High School, Jericho, New York

EE012

**Improving Mileage Efficiency of Hybrid Cars**

Ruby Kandah, 17, William Mason High School, Mason, Ohio

**Second Award of \$250 and a certificate**

EM308      **Making Your Enemy Your Friend: A Novel Approach to Integrated Pest Management (IPM) Using Noxious Weed Extracts**  
Jonathan Kelvin Suncar, 16, Uniondale High School, Uniondale, New York  
Kemeisha Latoya Nastasia Patterson, 18, Uniondale High School, Uniondale, New York

EN029      **Rebuilding Lives in Post-Catastrophic Disaster and War Torn Areas: A New Technology for Portable Construction Beams and a Process for Their Production and Use**  
Micah Lathaniel Toll, 18, Cedar Crest High School, Lebanon, Pennsylvania

**American Mathematical Society**

**Karl Menger Award of Excellence**

**First Award of \$1,000**

MA012      **The String Topology BV Algebra, Hochschild Cohomology and the Goldman Bracket on Surfaces**  
Dmitry Vaintrob, 18, South Eugene High School, Eugene, Oregon

**Second Award of \$500**

MA026      **EASE Polygons Are Not Easy**  
Cheng-Tao Chung, 17, Taipei Municipal Jianguo High School, Taipei, Taiwan, Chinese Taipei

MA030      **Short Billiards**  
Daniel Karoly Bezdek, 17, Notre Dame High School, Calgary, Alberta, Canada

**Third Award of \$250**

MA019      **A Canon of Canonical Forms**  
Christopher Lopez, 17, The Bronx High School of Science, Bronx, New York

MA023      **Function Pools**  
Hagai Helman, 18, Reut School, Jerusalem, Israel

MA025      **Endless Propagation--the Arithmetic Rules of Regular Pentagons**  
Albert Chiehyang Liu, 16, Kaohsiung Municipal Kaohsiung Senior High School, Kaohsiung City, Taiwan, Chinese Taipei

MA048      **Ratio of Total Edge Lengths of Two Simplices, Where One Contains Another**  
Nikita M. Savushkin, 16, School #1134, Moscow, Russia

**Honorable Mention Award**

MA002      **Recurrence Relation for Congruum Problem Solutions**  
Lado Meskhishvili, 16, Georgian-American High School, Tbilisi, Georgia Republic

MA010      **Universal Law for the Transition from Chaos to Periodicity in Nonlinear Physical Systems**  
Almas U. Abdulla, 13, Palm Bay High School, Melbourne, Florida

MA021      **Results in Geometric Inequalities**  
Avi William Levy, 15, West Linn High School, West Linn, Oregon

MA034      **Infinite Product Expansions of the  $n$ th Root**  
Ardit Kroni, 16, Synge Street CBS, Dublin, Ireland

MA049      **On Realization on Graphs on the Klein Bottle**  
Alexey S. Telishev, 16, Grammar School #77, Naberezhnye Chelny, Tatarstan, Russia

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

## American Meteorological Society

For the best exhibits in the area of atmospheric, oceanic and hydrologic sciences.

### First Award of \$1,000

EV314      **Measuring the Atmospheric Concentration of NO<sub>2</sub> Above a City Using DOAS**  
Shunsuke Nishida, 17, Kyoto Municipal Horikawa Senior High School, Kyoto, Japan  
Masaki Shinohara, 17, Kyoto Municipal Horikawa Senior High School, Kyoto, Japan

### Second Award of \$500

EA001      **Improving Weather Technology for the Future: WDSS-II, Phase II**  
Michael William Kirlin, 16, Carroll High School, Dayton, Ohio

### Third Award of \$250

EA015      **The Possible Effects and Predictive Capabilities of the El Niño Southern Oscillation and the North Atlantic Oscillation on Western Hemisphere Warm Pool Variability**  
John Christopher Turner, 18, Lincoln High School, Tallahassee, Florida

### Honorable Mention Award

EA014      **Wind Wave Measurements and Modelling in Kudema Bay, Estonian Archipelago Sea**  
Victor Alari, 18, Gustav Adolfs Grammar School, Tallinn, Estonia

EM022      **The Urban Heat Island Effect, Year Two**  
Trevis Jared Matheus, 17, Yerington High School, Yerington, Nevada

PH044      **Save the Space Stuff! Predicting Proton Emissions to Help Our Satellites, Astronauts, and Airplanes**  
Sophia Marie Mitchell, 15, duPont Manual Magnet High School, Louisville, Kentucky

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

AS060      **Gene Expression During Fin Growth in Zebrafish: The Role of the Gap Junction Protein Connexin43 in Vertebrate Bone Development**  
Isha Himani Jain, 16, Freedom High School, Bethlehem, Pennsylvania

**Second Award of \$500**

BI042

**Digest This! How Food Affects the pH of the Gastrointestinal System**

Michael Christian Green, 16, SC Association of Independent Home Schools, Cayce, South Carolina

**Third Award of \$500**

CB029

**Thrombospondin-1 Switches Nitric Oxide Function from Inhibitory to Stimulatory for Gene Expression of Human Tumor Endothelial Cell Markers**

Dayan Li, 17, Eleanor Roosevelt High School, Greenbelt, Maryland

ME075

**The Effect of Progesterone on Ischemic Brain Injury in Sprague-Dawley Rats with Permanent Middle Cerebral Artery Occlusion**

Tahseen Ismail, 18, Hillsborough High School, Tampa, Florida

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

## American Phytopathological Society

**First Award of \$1,000**

PS010

**Elicitation of Gene Expression in *Pinus taeda* After Challenge by *Dendroctonus frontalis*: Associated Fungi as Detected by RT-PCR**

Katie Elizabeth Termer, 18, Clay High School, Green Cove Springs, Florida

**Second Award of \$700**

EM009

**Tracking and Preventing the *Ophiostoma* Fungus of the Mountain Pine Bark Beetle**

Anika Rose Petach, 15, Fairview High School, Boulder, Colorado

**Third Award of \$500**

PS310

**The Decline of Cork Tree and Holm Oak Stands**

Estela da Silva Guerreiro, 17, Escola Secundaria Dr. Manuel Candeias Goncalves, Odemira, Portugal

Eduardo Manuel Soares Guerreiro, 18, Escola Secundaria Dr. Manuel Candeias Goncalves, Odemira, Portugal

Rita Catarina Ramos Pimenta Santos Silva, 18, Escola Secundaria Dr. Manuel Candeias Goncalves, Odemira, Portugal

**Forth Award of \$300**

PS003

**Characterization of Photoreceptor Genes Regulating Apothecial Morphogenesis of *Sclerotinia sclerotiorum***

Kelly Michelle Chacon, 17, American Heritage School, Plantation, Florida

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

For the best projects in the psychological sciences.

**First Award of \$1,500**

AS035

**The Effect of the Reproductive Status of Adult Female Mice on Cognitive and Behavioral Performance During the Postpartum Weeks**

Sonika Tyagi, 16, William Dickinson High School, Jersey City, New Jersey

**Second Award of \$1,000**

BE039 **Psycho-social Effects Caused by Paternal Absence on Children 7-11 Years Old with Solution by Means of Exercises that Stimulate Dialogue**  
Scott Miguel Munguia, 17, Tecnologico de Monterrey Campus Guadalajara, Guadalajara, Mexico

**Third Award of \$500**

BE046 **Category Specific Semantic Deficits of Object Recognition in Adults with Neurological Damage**  
Mounir Ahmad Koussa, 17, Tucson High Magnet School, Tucson, Arizona

BE050 **Quinolinic Acid Induced Neurotoxicity and the Protection of Cognitive Function in Planarian Using Taurine**  
Lacey Nicole Stansill, 18, Seneca High School, Seneca, Missouri

BE055 **Misplacing Attention: Does the Parahippocampal Place Area Really Encode Places?**  
Sophia Ariella Porrino, 17, Bergen County Academies, Hackensack, New Jersey

BE307 **Red Bull Gives You Wiings**  
Victoria Amanda Wheeler, 16, Greenwood High School, Greenwood, Mississippi  
Michelle Angelique Wheeler, 14, Greenwood High School, Greenwood, Mississippi

BE312 **Examining Social Skills, Behavioral Adjustment, and Repetitive Behaviors in Parents and Siblings of Individuals with Autism**  
Nathalie Fay Tadena, 17, Ossining High School, Ossining, New York  
Jessica Susan Palmer, 16, Ossining High School, Ossining, New York

**All APA winners will receive a certificate and a one year APA student affiliate membership.**

## American Society for Horticultural Science

**First Award of \$1,000**

PS017 **Medium Optimization for *Acer palmatum*, *in vitro***  
Michael James Bernert, 17, West Linn High School, West Linn, Oregon

**Second Award of \$500**

PS037 **Physical Parameters Related to Seed Selection for the Commercial Culture of the Papaya Tree (*Carica papaya*)**  
Abdiel Jose Ortiz, 16, Colegio Radians, Cayey, Puerto Rico

**Third Award of \$250**

PS006 **Hybridization of Edible Diploid Eumusa Varieties and Wild *Rhodochlamys musa* Species**  
Gabriel Lewis Sachter-Smith, 18, Nederland Middle Senior High School, Nederland, Colorado

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

## American Society for Microbiology

For the most outstanding project in the Microbiological Sciences, a \$2000 scholarship award, a one year student membership in the Society including monthly membership magazine "Microbe" and access to members-only web resources; and the book, "Intimate Strangers".

### First Award of \$2,000

MI309      **Linking Supercomputing and Systems Biology for Efficient Bioethanol Production**  
Scott Joseph Molony, 18, Oak Ridge High School, Oak Ridge, Tennessee  
Scott Ryan Horton, 18, Oak Ridge High School, Oak Ridge, Tennessee  
Steven Joseph Arcangeli, 17, Oak Ridge High School, Oak Ridge, Tennessee

### Second Award of \$1,000

MI014      **Hypermotility in *Escherichia coli*: A New Regulatory Mechanism Characterized**  
Erin May Turingan, 17, Eau Gallie High School, Melbourne, Florida

MI022      **The Effect of pH on Electrical Output of a Microbial Fuel Cell**  
Timothy Chang, 16, Stuyvesant High School, New York, New York

The American Society for Microbiology will also award the mentor of the first place winner \$1,000

## American Society of Pharmacognosy

For projects involving the study of natural products that are in any relevant category areas including Biochemistry, Botany, Chemistry, Medicine, Microbiology and Zoology.

### First Award of \$500

CH004      **Characterization of Anthocyanins in Purple Pod Coats of *Phaseolus vulgaris* cv. Blauhilde**  
Brandon Timothy Lew, 18, Breck School, Minneapolis, Minnesota

ME040      **Sophorolipids: A Novel Therapy for Asthma and Other Diseases of Altered IgE Regulation**  
Michael David Hagler, 17, Rambam Mesivta High School, Lawrence, New York

PS305      **Insecticidal Activity of Oleander Leaf Extract Against Diamondback Moth and Identification of Its Active Constituent**  
Liqing Yang, 18, Shanghai Lu Wan Senior High School, Shanghai, China  
Yuzhou Gu, 17, No.2 Secondary School attached to ECNU, Shanghai, China  
Zhaoxin Wang, 16, Pudong Foreign Languages School, Shanghai, China

## American Statistical Association

### First Award of \$1,000

AS018      **Dispersal Patterns of Relocated Three-toed Box Turtles (*Terrapene carolina triunguis*)**  
Alex Brendan Heeb, 16, Heeb Home School, Chaffee, Missouri

### Second Award of \$500

EA023      **Chemical Aspects of the Impact Process**  
Terik Daly, 17, Oak Grove High School, San Jose, California

**Third Award of \$250**

AS063

**Detecting Evolutionary Forces in Populations of White-tailed Deer**

Ethan Douglas Sperry, 18, Terre Haute South Vigo High School, Terre Haute, Indiana

**Honorable Mention Award**

EN044

**Yielding to Pedestrians**

Nicholas Samir Ekladyous, 15, Cranbrook Kingswood School, Bloomfield Hills, Michigan

MA304

**Mathematical Developments of the Contact Network Model**

David Michael Price, 17, Liberal Arts and Science Academy, LBJ High School, Austin, Texas

Stephanie Fulane Chan, 16, William P. Clements High School, Sugar Land, Texas

Jacob J. Shapiro, 17, Upper Arlington High School, Upper Arlington, Ohio

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

**First Award of \$1,000**

AS057

**Calls in the Wild: Vocalizations of the Red-cockaded Woodpecker**

Michael Tyler Wham, 17, Sterling Ridge Home School, Woodlands, Texas

**Second Award of \$700**

AS005

**Augmenting Habitat for *Drymarchon corais*, a Threatened Species**

David Brown Futch, 16, Winter Haven Senior High School, Winter Haven, Florida

AS016

**Vulnerability of Newborn Freshwater Porpoise in China's Yangtze River**

Wanyi Zhang, 17, No.1 Middle School Attached to Central China Normal, Wuhan, Hubei, China

AS038

**Do Bumblebees Base Foraging Decisions on Those of Others?**

Rachel Ellen Sitts, 18, Croton-Harmon High School, Croton-on-Hudson, New York

EM001

**Shape Up: The Relationship Between Trout Habitat and Differently Shaped Rocks**

Alex Graham Schnaderbeck, 17, Sargent High School, Monte Vista, Colorado

All winners will also receive a plaque.

## Ashtavadhani Vidwan Ambati Subbaraya Chetty (AVASC)

### Foundation

For 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**

EA020

**A Novel Design for Magnetic Levitating Seismograph**

Rishin Behl, 17, Kendriya Vidyalaya, Mumbai, Maharashtra, India

ME053

**Development of an Anticancer Drug Delivery System: A Novel Strategy for the Delivery of Therapeutic Macromolecules**

Shivani Sud, 16, Charles E. Jordan Senior High School, Durham, North Carolina

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

- CB036      **Targeting TRAF Proteins as an Anti-tumor Strategy**  
Yi Cai, 18, duPont Manual Magnet High School, Louisville, Kentucky
- CH019      **Corrosion Mitigation Using Thin-film Coatings of Polyelectrolyte Multilayers**  
Samantha Kay Lawrence, 18, Christian Heritage High School, Riverdale, Utah
- CH049      **Catalytic Enhancement of the Ethanol Electro-oxidation by Nano-Ceria/Platinum Composite Electrodes as a Viable Alternative for Methanol in Direct Alcohol Fuel Cells**  
Avni A. Solanki, 17, Lake Brantley High School, Altamonte Springs, Florida
- EM031      ***Desmostachya bipinnata* as an Eco-Friendly Termicide**  
Vaishnavi Viswanathan, 14, Modern English School, Mumbai, India
- EN036      **An Extra Spin on Nerve Regeneration: Synthesis of an Electrospun Spinal Cord Nerve Conduit**  
Amardeep Singh Grewal, 18, Detroit Country Day School, Beverly Hills, Michigan
- ET041      **Cyanobacterial Fuel Cells: Conversion of Light Energy into Electricity by Coupling Photosynthetic CO<sub>2</sub> Sequestration with Respiration in a Fuel Cell**  
Kartik Madiraju, 17, Marianopolis College, Montreal, Quebec, Canada
- MA012      **The String Topology BV Algebra, Hochschild Cohomology and the Goldman Bracket on Surfaces**  
Dmitry Vaintrob, 18, South Eugene High School, Eugene, Oregon
- PH045      **Investigation of the Structural Properties of a Three-dimensional Biological Photonic Crystal**  
Lauren Rose Richey, 18, Springville High School, Springville, Utah

Equivalent award available for non-U.S. winners. AVASC Foundation is an educational and medical service foundation dedicated to recognizing academic talent and providing services to the needy.

## Association for Computing Machinery

**First Award of \$1,000**

- CS003      **Improper Fractional Base Encryption**  
John Wilson Dorminy, 16, Sola Fide Home School, McDonough, Georgia

**Second Award of \$500**

- CS029      **FDIS: A Fast Frequency Distribution Based Interpolation Search Algorithm**  
Ram Raghunathan, 16, Sishya, Chennai, India

**Third Award of \$300**

- CS034      **Robot Vision: A Mutual Entropy-based Algorithm Through Scene Recognition from Image Sequences for Terrestrial and Planetary Exploration**  
Lucia Mocz, 16, Mililani High School, Mililani, Hawaii

**Honorable Mention Award of \$200**

- CS018      **Ping Me! Optimizing Code for Cluster Computing**  
Erika Alden DeBenedictis, 15, Saint Pius X High School, Albuquerque, New Mexico

- CS020      **Organization of Multiboot in Windows NT**  
 Grigoriy Nikolaevich Romanowskiy, 17, College of East Ukrainian National University,  
 Lugansk, Ukraine
- CS030      **Acoustic Music Similarity Analysis**  
 David C. Liu, 15, Lynbrook High School, San Jose, California

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

For the best projects in the area of Computer Science with an artificial intelligence component. Finalists in other areas with significant computer science components are also eligible.

### Award of \$1,000

- CS030      **Acoustic Music Similarity Analysis**  
 David C. Liu, 15, Lynbrook High School, San Jose, California
- CS034      **Robot Vision: A Mutual Entropy-based Algorithm Through Scene Recognition from Image Sequences for Terrestrial and Planetary Exploration**  
 Lucia Mocz, 16, Mililani High School, Mililani, Hawaii
- CS037      **A Java-based Genetic Algorithm Stock Screening Program for Maximizing Return on Investment: Show Me the Money**  
 Bryan Nathan Landman, 18, Dr. Michael M. Krop Senior High School, Miami, Florida
- CS308      **Factors, Forces and Forecasting Stock Market Modeling and Simulation**  
 Quinton Bernard Smith, 17, La Cueva High School, Albuquerque, New Mexico  
 Tyrus LaVelle Sanders, 16, West Mesa High School, Albuquerque, New Mexico  
 Christian Stephen Hammond, 17, Rio Rancho High School, Rio Rancho, New Mexico
- ME059      **Artificial Intelligence Insulin Delivery System**  
 David Christopher Evans, 15, Albion Middle School, Sandy, Utah

All winners will also receive a certificate. Winners and their schools will also receive a one-year membership in the American Association for the Advancement of Artificial Intelligence, including a subscription to "AI Magazine".

## Association for Women Geoscientists

The mission of the society 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.

### Award of \$1,000

- EA013      **Determining the Origin of a Volcanic Ash Layer in a Creek Bank**  
 Karissa Audrey Floerchinger, 16, Cascade High School, Cascade, Montana

### Honorable mention award of \$100

- EA004      **Stream Channel Dynamics in Largo Canyon 1882-2005, Northwest New Mexico**  
 Shandiin Chanel Copeland, 16, Kirtland Central High School, Kirtland, New Mexico

EE046      **Effect of Underwater Barrier on Speeds of Tsunami Wave**  
Narges Kaynia, 19, Berg Videregaende Skole, Oslo, Norway

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

Award winners will receive a paid trip to China for a week to attend the 22nd China Adolescents Science and Technology Innovation Contest to be held in Kunming Yunan Province in August. The award includes round trip flights, accommodations and activities for the students.

### Trip to China to attend the CASTIC

CH013      **Determining Carbon Nanotubes' Thermodynamic Solubility: The Missing Link to a Practical Supermaterial?**  
Philip Vidal Streich, 16, Homeschool, Platteville, Wisconsin

EA009      **Topographic Features and Formation Process of Mamigasaki Alluvial Fan, Northern Japan, based on the Field Observations and Flume Experiments**  
Midori Kanno, 16, Yamagata Prefectural Yamagata Higashi High School, Yamagata City, Yamagata Prefecture, Japan

EA020      **A Novel Design for Magnetic Levitating Seismograph**  
Rishin Behl, 17, Kendriya Vidyalaya, Mumbai, Maharashtra, India

EE029      **Space Localization of Arbitrary Sound Signals in Real Time**  
Simon Schmitt, 19, Kippenberg Gymnasium, Bremen, Germany

EE056      **Magnetic Coil Gun**  
Jackson Michael Beatty, 17, Bishop Silas Chatard High School, Indianapolis, Indiana

## 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 problem, and approach to the topic.

### Award of \$1000

EE022      **An Optical Sensor to Assess High Intensity Discharge Lamp Age Through Spectral Analysis**  
Carl A. Turner, 18, New Prague Senior High School, New Prague, Minnesota

## Drexel University

For projects in the categories of Computer Science, Engineering, Medicine and Health and Physics.

### Tuition Scholarship of \$120,000

BI016      **Non-Invasive Transdermal Drug Delivery**  
Shruthi Baskaran, 17, Kennewick High School, Kennewick, Washington

- BI025      **An Investigation of the Inhibition Mechanism of a *Scutellaria baicalensis* Component**  
Harrison Phu Nguyen, 16, Detroit Catholic Central High School, Novi, Michigan
- CH024      **A Novel Approach to Rapid Diagnosis of Cancer**  
Richard J. Li, 16, Monte Vista High School, Danville, California
- CS001      **Mixed Reality and Its Application in the Realm of Medical Rehabilitation**  
Shaz K. Jafri, 16, Lake Highland Preparatory School, Orlando, Florida
- CS032      **Effects of Driver Behavior on Traffic Flow**  
Michael James Morrison, 17, Clear Lake High School, Houston, Texas
- EE042      **L.I.S.S.A. 2.0: Light Intensity & Sonar Sensing Assistant, Evolved**  
Sophia Alexandra Goreczky, 17, Plano West Senior High School, Plano, Texas
- EN003      **Analysis of Aerodynamic Lift Generated by Storm Winds with Applications to Reducing Structural Roof Failure**  
Katherine Elizabeth Reichert, 16, Columbia High School, Lake City, Florida
- ME031      **Mechanisms of Inhibition and Apoptosis of Human Prostate Cancer Cells by Epigallocatechin-3-Gallate**  
Hang Richard Zou, 17, Albuquerque Academy, Albuquerque, New Mexico

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

- BI014      **Insulin-like Growth Factor I Mediated Cell Proliferation via the Insulin Receptor**  
Laila Areen Wahedi, 18, School of Science and Technology, Beaverton, Oregon

### Second Award of \$500

- CH028      **Quantitative Analysis of Vitamin D-deficiencies on Epiphyseal Plate Growth and Bone Density**  
Kali Anne Shephard, 17, Valley Public School, Hoople, North Dakota
- ME075      **The Effect of Progesterone on Ischemic Brain Injury in Sprague-Dawley Rats with Permanent Middle Cerebral Artery Occlusion**  
Tahseen Ismail, 18, Hillsborough High School, Tampa, Florida

### Honorable Mention Award

- ME022      **Role of Estrogen Receptor Beta (ER $\beta$ ) on Opioids and Opioid-Related Peptides in the Rodent Dorsal Hippocampal Formation**  
Sana Khalid, 18, Health Professions and Human Services High School, New York, New York
- ME024      **A Novel Model for the Glucocorticoid Mediated Regulation of Arterial Inflammation**  
Sheel Tyle, 15, Pittsford Mendon High School, Pittsford, New York

ME309      **Exploring the Effects of Various Stressors on the Body Fat Storage and Content of Invertebrate Model Organisms *Drosophila melanogaster* and *Caenorhabditis elegans***  
Erin Nicole D'Agostino, 16, Manhasset High School, Manhasset, New York  
Whitney Strine Quackenbush, 17, Manhasset High School, Manhasset, New York

ME323      **C1q Binding Protein and Sex Hormones in Using Autoimmunity to Fight Cancer**  
Richie Kimlong Huynh, 18, Champlin Park High School, Champlin, Minnesota  
Ryan Kimlong Huynh, 18, Champlin Park High School, Champlin, Minnesota

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

## Geological Society of America

The Society will award prizes for science and engineering projects investigating the earth and related sciences. The winners and their schools will receive a free subscription to "GSA Today", the GSA monthly newsletter. Projects will be judged on their demonstration of a high level of understanding of earth science concept(s), how the earth is a system, and use of innovative methods to explain concepts.

**First Award \$2,000**

EA025      **On Shaky Ground: Probing Proximal Seismites Within the Epicenter of a Cretaceous Earthquake in Grand Staircase-Escalante National Monument, Utah**  
Hannah Louise Wolf, 16, Parkland High School, Allentown, Pennsylvania

**Second Award \$1,500**

EA023      **Chemical Aspects of the Impact Process**  
Terik Daly, 17, Oak Grove High School, San Jose, California

**Third Award \$500**

EM309      **Using Modified Ancient Technology for Obtaining Fresh Water from the Atmosphere in the Arid Steppe Crimea**  
Ruslan Anvarovych Fatkullin, 16, Chernomorskoye School-Gymnasium #3, Chernomorskoye, Autonomous Republic of Crimea, Ukraine  
Zarema Ilyasivna Umerova, 15, Mezhdvodnoe High School, Mezhdvodnoe, Autonomous Republic of Crimea, Ukraine

## 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 U.S. \$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**

EE060      **I Want a Holodeck**  
George Francis Hotz, 17, Bergen County Academies, Glen Rock, New Jersey

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 \$1000**

CS014

#### **Applications of Multi-Valued Quantum Algorithms**

Yale Wang Fan, 15, The Catlin Gabel School, Portland, Oregon

### **Second Award of \$500**

BI033

#### **Design and Development of a Novel DNA Computer System for Advanced Genetic Analysis**

Adrian Veres, 17, College Jean-de-Brebeuf, Montreal, Quebec, Canada

### **Third Award of \$350**

CS034

#### **Robot Vision: A Mutual Entropy-based Algorithm Through Scene Recognition from Image Sequences for Terrestrial and Planetary Exploration**

Lucia Mocz, 16, Mililani High School, Mililani, Hawaii

### **Team First Award of \$500 for each team member**

CS304

#### **Wireless Integrated Security Extension (WISE): A Novel Approach for Securing Supervisory Control and Data Acquisition (SCADA) Systems Against Cyber Attacks**

Arooshi Raga Kumar, 16, duPont Manual High School, Louisville, Kentucky

Smriti Rajita Kumar, 16, duPont Manual High School, Louisville, Kentucky

### **Team Second Award of \$400 for each team member**

CS311

#### **Strategic Sudoku Solutions**

Charles Robert Meyers, 16, Little Rock Central High School, Little Rock, Arkansas

Miles McCullough, 17, Little Rock Central High School, Little Rock, Arkansas

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

## Instituto Tecnológico y de Estudios Superiores de Monterrey

**This is a full scholarship that is equivalent to \$90,000 USD; and includes: Full Tuition, Housing and Transportation. The Institute is the largest private University in Latin America, with 100,000 students in 33 campuses across Mexico. Known as the "MIT of Mexico", and it is one of the top technical universities.**

### **100% paid tuition scholarship award, plus housing and transportation at the university installation**

EE067

#### **Graham I: Communication System Using Hand Signal Interpretation**

Juan Alberto Rodriguez Rodriguez, 19, Colegio Tecnico Profesional don Bosco, Alajuelita, San Jose, Costa Rica

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

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.

### **Award of \$1,000**

- |       |  |
|-------|--|
| MA001 | <b>Quantitative Evaluation of Cancer Cell Complexity: A Study of Fractal Morphometry</b><br>Samuel Irvin Kornicks, 15, Vero Beach High School, Vero Beach, Florida |
| MA029 | <b>Mathematical Modeling of the Speed of Evolution in Asexual Populations</b><br>John Imbrie-Moore, 14, Charlottesville High School, Charlottesville, Virginia     |
| MA040 | <b>Potential Pandemic: H5N1 Influenza, a Mathematical Study</b><br>Shinjini Bakshi, 15, Pennbrook Middle School, North Wales, Pennsylvania                         |

## National Anti-Vivisection Society

For the project that best promotes scientific advancement through methods that do not harm animals, that works 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.

### **Award of \$5,000**

- |       |   |
|-------|---|
| ME046 | <b>Integrated Microfluidic Device for the Development of Human Embryonic Stem Cells</b><br>Carol Yoon Joo Suh, 18, Palos Verdes Peninsula High School,<br>Rolling Hills Estates, California |
|-------|---|

### **Award of \$2,000**

- |       |   |
|-------|---|
| CB029 | <b>Thrombospondin-1 Switches Nitric Oxide Function from Inhibitory to Stimulatory for Gene Expression of Human Tumor Endothelial Cell Markers</b><br>Dayan Li, 17, Eleanor Roosevelt High School, Greenbelt, Maryland |
|-------|---|

### **Award of \$1,000**

- |       |   |
|-------|---|
| ME312 | <b>Detecting Cancer in Living Tissue with Single-Cell Precision</b><br>Alex Shlomo Ramek, 17, Hebrew Academy of the Five Towns & Rockaway,<br>Cedarhurst, New York<br>Adam Chaplin Fields, 17, Jericho High School, Jericho, New York |
|-------|---|

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. Five prizes will recognize innovation and invention that addresses critical basic human needs: health, water, food, shelter, and transportation. An additional six prizes will be awarded to one project in each of the following areas: Engineering, Physics, Chemistry, Environmental Science, Microbiology, Medicine & Health and Computer Science.

## Scholarship Award of \$1,000

- CH039      **Bright, Luminescent Silicon Nanoparticles for Biological Applications**  
Alexandra Maria Curtis, 17, Davis Senior High School, Davis, California
- CS037      **A Java-based Genetic Algorithm Stock Screening Program for Maximizing Return on Investment: Show Me the Money**  
Bryan Nathan Landman, 18, Dr. Michael M. Krop Senior High School, Miami, Florida
- EE012      **Improving Mileage Efficiency of Hybrid Cars**  
Ruby Kandah, 17, William Mason High School, Mason, Ohio
- EE309      **The Uno: Tomorrow's Transportation Solution**  
Jason Charles Morrow, 17, Westdale Secondary School, Hamilton, Ontario, Canada  
Benjamin Poss Gulak, 17, Chisholm Collegiate, Oakville, Ontario, Canada
- EM305      **From Waste to Fuel**  
Ka Long Yau, 18, Carmel Pak U Secondary School, Tai Po, Hong Kong, Region of China  
Ka Ki Kwan, 18, Carmel Pak U Secondary School, Hong Kong, Region of China  
King Wai Chiang, 19, Carmel Pak U Secondary School, Hong Kong, Region of China
- EV316      **Purification of Water with Active Carbon Derived from Nutsells vs. Regular Active Carbon**  
Jakob Refer Thygesen, 20, Odense Technical High School, Odense M, Fyn, Denmark  
Kaare Thode Joergensen, 20, Odense Technical High School, Odense M, Fyn, Denmark
- ME048      **Predicting Drug Response in Alzheimer's Dementia**  
Ketaki Rawal, 16, Centennial Regional High School, Greenfield Park, Quebec, Canada
- ME066      **The Development of a Urine Test for the Early Detection of Colorectal Cancer**  
Janet Song, 15, Methacton High School, Norristown, Pennsylvania
- MI054      **The Potential of Marine Bioluminescent Bacteria as Antibacterial Agents Against Two Major Rice Diseases Caused by *Xanthomonas oryzae* pv. *oryzae* and *Xanthomonas oryzae* pv. *oryzicola***  
Luiji John Karlo Miravalles Suarez, 17, Dona Hortencia Salas Benedicto National High School, La Carlota City, Negros Occidental, Philippines
- MI309      **Linking Supercomputing and Systems Biology for Efficient Bioethanol Production**  
Scott Joseph Molony, 18, Oak Ridge High School, Oak Ridge, Tennessee  
Scott Ryan Horton, 18, Oak Ridge High School, Oak Ridge, Tennessee  
Steven Joseph Arcangeli, 17, Oak Ridge High School, Oak Ridge, Tennessee

PH019      **Development of an Inverted Optical Tweezers with Full Motional Control**  
Hamsa Sridhar, 17, Kings Park High School, Kings Park, New York

## National Taiwan Science Education Center

Trip to Taiwan to attend the Taiwan International Science Fair in February 2008.

CH021      **Synthetic Analogs of Smoothened Intracellular Loop as Potent Inhibitors of Cancer Cells Growth**  
Jarrett Renn Remsberg, 17, Middletown Senior High School, Middletown, Maryland

CH039      **Bright, Luminescent Silicon Nanoparticles for Biological Applications**  
Alexandra Maria Curtis, 17, Davis Senior High School, Davis, California

This award includes round trip ticket, most meals, accommodations and activity expenses for each student.

## North American Benthological Society

For projects related to the "benthos" - organisms living at the bottom of streams, lakes, estuaries and oceans. All winners receive a one-year membership in the Society and a subscription to the "Journal of the North American Benthological Society".

### Award of \$500

EV023      **Assessing the Long Term Pollution in Cave Springs Branch Correlating Macroinvertebrate Communities and Sediment Composition**  
Molly Katheryn Steen, 17, Grove High School, Grove, Oklahoma

### Award of \$300

EV043      **Feeding Preferences Between Quagga and Zebra Mussels**  
Tim Walter Wilke, 18, Liverpool High School, Liverpool, New York

### Award of \$200

AS026      **Classification and Biogeography of Shield Shrimp (*Notostraca: Lepidurus* sp.) in Playa Lakes of the Central Great Basin**  
Jedediah Wade Bradley, 17, Spring Creek High School, Spring Creek, Nevada

### Honorable Mention Award

AS029      **The Determination of Gender in Pacific and Atlantic Salmon for Improved Management of Threatened and Endangered Stocks**  
Susannah Lee Clary, 15, Los Lunas High School, Los Lunas, New Mexico

AS046      **Macroinvertebrates as Water Quality Indicators in the North Branch of the Chicago River**  
Eva Ruth Feldman, 16, Lincoln Park High School, Chicago, Illinois

EM016      **The Effect of Invasive Mosquitofish (*Gambusia holbrooki*) and Native Banded Killifish (*Fundulus diaphanus*) on Macroinvertebrates and Mosquito Larvae**  
Alana Rose Tornello, 16, Staten Island Technical High School, New York City, New York

EV039      **Use of Epilithic Diatoms as Biological Indicators of Pharmaceutical Runoff**  
Ronit Batya Roth Abramson, 15, 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

Awards in eight subject categories: Engineering, Physics, Chemistry, Microbiology, Medicine and Health, Computer Science, Energy and Transportation, and Biochemistry.

### Grand Award of \$1,000

PH019      **Development of an Inverted Optical Tweezers with Full Motional Control**  
Hamsa Sridhar, 17, Kings Park High School, Kings Park, New York

### First Award of \$200

BI012      **Preventing Degradation of DNA and Cells by Rutile Titanium Dioxide Nanoparticles, a Common Sunscreen Ingredient**  
Matthew Samuel Wieder, 17, SAR High School, Riverdale, New York

CH007      **Electrochemically Tested Nanoparticle Paints**  
Yang Yang, 18, McLean High School, McLean, Virginia

CS025      **Calculated Relevance of Information Through Keywords**  
Ukseong Moon, 16, Daegu High School, Daegu, South Korea

EN045      **Platinum Nanoparticles: From Hydrogen Storage to Cancer Treatment**  
Daniel Scott Katz, 18, Hebrew Academy of the Five Towns & Rockaway, Cedarhurst, New York

ET028      **Sol-Tile: The Power of Green--Modelling Dye-Sensitized Solar Cells to Develop a Solar Roofing Tile**  
David Anthony Joseph Castelino, 16, Saint Aloysius Gonzaga Secondary School, Mississauga, Ontario, Canada

ME064      **Dendrimer-based Nanodevices for Drug Delivery Across the Blood Brain Barrier**  
Shravani Mikkilineni, 16, Detroit Country Day School, Beverly Hills, Michigan

MI022      **The Effect of pH on Electrical Output of a Microbial Fuel Cell**  
Timothy Chang, 16, Stuyvesant High School, New York, New York

### Second Award of \$150

BI031      **Ozonation as a Novel Cancer Therapeutic Agent: Results of a Pilot Study on AML-14.3D10 (Acute Myeloid Leukemia) Cell Viability, *in vitro***  
Elena Kurtz Ovatt, 18, West Platte High School, Weston, Missouri

CH013      **Determining Carbon Nanotubes' Thermodynamic Solubility: The Missing Link to a Practical Supermaterial?**  
Philip Vidal Streich, 16, Homeschool, Platteville, Wisconsin

CS009      **Making Waves: A 3D Software Simulation of Wave Creation and Propagation**  
James Daniel Brandenburg, 15, Cocoa High School, Cocoa, Florida

EE010      **The Dirt on Baseball: Standardizing the Baseball Mudding Process**  
Cameron Kruse, 17, Homeschool, Colorado Springs, Colorado

- ET031      **Maximizing Wind Power: Considering the Effects of Solidity and Wing Shape on the Performance of a Vertical Axis Wind Turbine**  
Parker Prescott Owan, 17, Home School, Tucson, Arizona
- ME084      **The Signaling Pathway that Controls Body Weight, A Second Year Study**  
Katherine Yuan Fang, 15, Pioneer High School, Ann Arbor, Michigan
- MI019      **Correlation of Single and Multiple Species Biofilms and Antibiotic Resistance**  
Haleigh Jo White, 18, Mid-Buchanan R-5 High School, Faucett, Missouri
- PH016      **Magnetic Field Influences on Various Fluid Viscosities**  
Bonnie LeeAnn White, 16, Mayo High School for Math, Science, and Technology, Darlington, South Carolina

**Grand Award includes a framed copy of the first patent granted in the United States of America.**

## PowerPlus Engineering, Inc.

**The PowerPlus Engineering Award for Sustainable Electrical Energy Research will be presented to the project deemed to make the most significant contribution to sustainable electrical energy.**

**Award of \$1000**

- ET039      **Comparing Vertical-Axis and Horizontal-Axis Wind Turbines**  
Nicolas A. Aguilar, 17, Solon High School, Solon, Iowa

**The award is sponsored by Mr. John Cool, PE, President of PowerPlus Engineering, Inc. and CEO of Power Analysis Associates, Inc.**

## Psi Chi, The National Honor Society in Psychology

**Our purpose is to encourage, stimulate, and maintain excellence in scholarship of the individual members in all fields, particularly in psychology, and to advance the science of psychology. Psi Chi will award the best projects in psychological science.**

**First award of \$1,000**

- BE032      **Interpersonal Behavior and Spacing on Public Benches: An Observational Project Conducted in DC Metrorail Stations**  
Anne Kelly Minoff, 18, Yorktown High School, Arlington, Virginia

**Second award \$350**

- BE054      **The Effects of Video Game Experience on Laparoscopic Surgery Proficiency**  
Mark A. Vitale, 16, duPont Manual Magnet High School, Louisville, Kentucky

**Third award of \$150**

- BE319      **The Effect of Aging on Short-Term Memory**  
Bradley Shields, 17, Oxford High School, Oxford, Mississippi  
Taylor McGraw, 17, Oxford High School, Oxford, Mississippi  
Reed Falkner, 17, Oxford High School, Oxford, Mississippi

**All winners will receive a Psi Chi Certificate of Recognition**

## Ricoh

The Ricoh Sustainable Development Award will go 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.

### Scholarship Award of \$25,000

- AS021      **Biological Control of a Common Corn Criminal, Phase Four: A Four-Year Study on the Effects of *Hetero rhabditis* Nematodes on the *Carpophilus lugubris* Dusky Sap Beetle**  
D.J. Ray Horton, 18, Hotchkiss High School, Hotchkiss, Colorado
- EM311      **Optimizing Recycled Polymer Blends Using Supercritical Carbon Dioxide**  
Emily Levine, 18, Stella K. Abraham High School for Girls, Hewlett, New York  
Danielle Lent, 17, Stella K. Abraham High School for Girls, Hewlett, New York

The Ricoh Sustainable Development Award - for ideas that balance the economic and social needs of today with the environmental needs of tomorrow.

## Showboard, Inc.

For the best use of scientific method on a project display board, taking into account structure, scientific method, titles and overall appearance of project display.

### First Award of \$1,000

- AS057      **Calls in the Wild: Vocalizations of the Red-cockaded Woodpecker**  
Michael Tyler Wham, 17, Sterling Ridge Home School, Woodlands, Texas

### Second Award of \$500

- BE062      **Smart Shoe for Blind People**  
Ahmed Khalid A. AlNuaimi, 16, Alansar Private School, Dammam, Saudi Arabia

### Third Award of \$250

- EN049      **Surface Modification Using Hydro-Phobic/Philic Properties for Microfluidics**  
Jeongsoo Lee, 17, Korea Science Academy, Busan, South Korea

## Society for Technical Communication

### Distinguished Team Award of \$1,000

- EV302      **Decline of the North American Lesser Scaup, Phase Three: Composition and Trace Element Concentrations in Eggs and Prey Foods**  
Mitchell Dale Weegman, 18, Winona Senior High School, Winona, Minnesota  
Matthew Moraco Weegman, 18, Winona Senior High School, Winona, Minnesota

### Excellence Team Award of \$250

- EE306      **Fluorotype: A System to Transcode Info Embedded in UV-reactive Data Matrices**  
Brandon Lee Reavis, 17, Cody High School, Cody, Wyoming  
Brian Christopher Reavis, 17, Cody High School, Cody, Wyoming

**Merit Team Award of \$100**

- EN308 **Non-Classical Wetting Behavior of Various Liquids on Carbon Nanotube Substrates**  
Hung-Bing Tan, 17, William G. Enloe High School, Raleigh, North Carolina  
Anusuya Meenakshi Ramasubramanian, 18, William G. Enloe High School, Raleigh,  
North Carolina  
Benjamin C. Wang, 18, William G. Enloe High School, Raleigh, North Carolina

All winning students' high schools will also receive a one-year subscription to "Intercom".

## Society of Environmental Toxicology and Chemistry

Awards are given to the best projects in environmental toxicology and chemistry. In addition, all winners will receive a certificate of recognition and a student membership in SETAC.

**First Award of \$500**

- EM005 **Comparison of the Phytodegradation of Trichloroethylene Using *Salix nigra* and *Salix caroliniana***  
Meredith Celeste Boulos, 15, Episcopal High School of Jacksonville, Jacksonville, Florida

**Second Award of \$250**

- EV032 **Toxicity and Bioaccumulation of Nanomaterials in Aquatic Species**  
Jingyuan Luo, 18, Hamilton High School, Chandler, Arizona

**Third Award of \$100**

- EV016 **Effects of P450 Inhibitors on *Fundulus* Development and CYP1 Expression**  
Hallie Louise Freyaldenhoven, 17, Mississippi School for Mathematics and Science, Columbus, Mississippi

**Student Membership in SETAC**

- AS045 **Water Temperature Impact on Freshwater Macroinvertebrates: A Comparison of Aquatic Life in Flint Creek Above & Below Siloam Springs City Lake**  
Carter Henrey Londagin, 15, Grove High School, Grove, Oklahoma
- AS046 **Macroinvertebrates as Water Quality Indicators in the North Branch of the Chicago River**  
Eva Ruth Feldman, 16, Lincoln Park High School, Chicago, Illinois
- EV029 **Hidden Dangers? The Effects of Aquatic Herbicide Surfactants on *Daphnia magna***  
Brittany Lyn King, 14, Tuscumbia High School, Tuscumbia, Missouri

## Society of Exploration Geophysicists

For projects that display excellence related to the geophysical sciences.

**Distinguished Achievement Award of \$1,000 and a trip to the SEG International Exposition and Annual Meeting.**

- EA025 **On Shaky Ground: Probing Proximal Seismites Within the Epicenter of a Cretaceous Earthquake in Grand Staircase-Escalante National Monument, Utah**  
Hannah Louise Wolf, 16, Parkland High School, Allentown, Pennsylvania

**Award of Merit of \$500**

EA013

**Determining the Origin of a Volcanic Ash Layer in a Creek Bank**

Karissa Audrey Floerchinger, 16, Cascade High School, Cascade, Montana

EA020

**A Novel Design for Magnetic Levitating Seismograph**

Rishin Behl, 17, Kendriya Vidyalaya, Mumbai, Maharashtra, India

**Award of Merit of \$250**

CS009

**Making Waves: A 3D Software Simulation of Wave Creation and Propagation**

James Daniel Brandenburg, 15, Cocoa High School, Cocoa, Florida

EA009

**Topographic Features and Formation Process of Mamigasaki Alluvial Fan, Northern Japan, based on the Field Observations and Flume Experiments**

Midori Kanno, 16, Yamagata Prefectural Yamagata Higashi High School, Yamagata City, Yamagata Prefecture, Japan

EA022

**Seismic and Petrographic Analyses of the Victoria Island Structure (Phase II)**

Samuel Charles Spevack, 16, Grossmont Middle College High School, El Cajon, California

EA023

**Chemical Aspects of the Impact Process**

Terik Daly, 17, Oak Grove High School, San Jose, California

## **SPIE-The International Society for Optical Engineering**

Advancing the science and application of light, SPIE 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. SPIE 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. SPIE presents these awards for the best projects in the area of Optics and Photonics Engineering.

**Award of \$2,500**

PH019

**Development of an Inverted Optical Tweezers with Full Motional Control**

Hamsa Sridhar, 17, Kings Park High School, Kings Park, New York

**Award of \$1,500**

PH311

**Improving Laser Efficiency Using Rhodamine 6G in a Nd: YAG Laser**

Chelsey Lynn Webb, 17, Hilton Head Preparatory School, Hilton Head Island, South Carolina

Alexandra Morgan Smith, 17, Hilton Head Preparatory School, Hilton Head Island, South Carolina

Ryan John Clark, 17, Hilton Head Preparatory School, Hilton Head Island, South Carolina

**Third award \$1,000**

PH045

**Investigation of the Structural Properties of a Three-dimensional Biological Photonic Crystal**

Lauren Rose Richey, 18, Springville High School, Springville, Utah

SPIE 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 Place Award \$2,500

AS053      **Ewes Shouldn't Reuse Needles**  
Mallory Gabrielle Wall-Tweten, 17, Sumner High School, Sumner, Washington

### Second Place Award \$1,000

ME036      **Hypoglycemic Effects of Tecoma Stans on Sheep as a Model for Type II Diabetes**  
Leah T.C. Guthrie, 16, The Good Hope School, Frederiksted, Virgin Islands

MI042      **Antiserum Against *Streptococcus pneumoniae* Pneumolysin Produced in Rabbits**  
Sherrina Amanda Robinson, 17, William B. Murrah High School, Jackson, Mississippi

In addition an award a \$1,000 grant for the teacher of the first place SUBR winner.

## United Technologies Corporation

United Technologies Corporation recognizes 8 projects for excellence in science and engineering. Each winning project will receive shares of United Technologies Corporation common stock with a total value of approximately \$2,000.

### UTC Stock with an approximate value of \$2000.

CH013      **Determining Carbon Nanotubes' Thermodynamic Solubility: The Missing Link to a Practical Supermaterial?**  
Philip Vidal Streich, 16, Homeschool, Platteville, Wisconsin

CS046      **Quantum Cluster Algorithms: Unsorted Database Search and Modular Exponentiation**  
Gabriel Joel Mendoza, 18, Americas High School, El Paso, Texas

EE044      **An Inexpensive Microgravity Environment**  
Alexandra Elizabeth Crook, 17, Box Elder High School, Brigham City, Utah

EE060      **I Want a Holodeck**  
George Francis Hotz, 17, Bergen County Academies, Glen Rock, New Jersey

EN037      **Concrete Paving and Maintenance in Michigan**  
Lukas Adam Gordon, 17, Marysville High School, Marysville, Michigan

ET021      **Low Aspect Ratio Rotor Blades for Application to Helicopter Noise Reduction**  
Andrew Donald Durkee, 16, York School, Monterey, California

EV032      **Toxicity and Bioaccumulation of Nanomaterials in Aquatic Species**  
Jingyuan Luo, 18, Hamilton High School, Chandler, Arizona

MA012      **The String Topology BV Algebra, Hochschild Cohomology and the Goldman Bracket on Surfaces**  
Dmitry Vaintrob, 18, South Eugene High School, Eugene, Oregon

Each winner will also receive a plaque, a pen, and the United Technologies Corporation Annual Report.

## University of the Sciences in Philadelphia

Scholarships to finalists from the following categories: **Biochemistry, Botany, Chemistry, Environmental Science, Medicine & Health, Microbiology or Zoology.**

**Tuition Scholarship of \$7,000 per year for four, five or six years, depending upon the degree program.**

BI013      **Structural Studies of the Inactive Form of Indoleamine 2,3-Dioxygenase**  
Ling Zhang, 16, The Nightingale-Bamford School, New York, New York

CB035      **Computational Exploration of Protein Functions**  
Jane Ykovlevna Fomina, 17, Westfield High School, Westfield, Massachusetts

MI033      **5'-methoxyhydnocarbin as an Inhibitor of Antibiotic Resistance in *E. coli***  
Eric Nelson Delgado, 17, Bayonne High School, Bayonne, New Jersey

Scholarship will go into effect upon the recipient's admission 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

**Award of \$750**

PH048      **Neutron Activation Analysis Using an Inertial Electrostatic Confinement Fusion Reactor**  
Thiago David Olson, 17, Stoney Creek High School, Rochester Hills, Michigan

**Award of \$500**

EN045      **Platinum Nanoparticles: From Hydrogen Storage to Cancer Treatment**  
Daniel Scott Katz, 18, Hebrew Academy of the Five Towns & Rockaway, Cedarhurst, New York

**Award of \$250**

CH012      **Selective Elemental Determination Within Multiple Molecular Compounds Through Gas Chromatography**  
Stephen Michael Bergin, 18, St. Pius X High School, Albuquerque, New Mexico

The school science department of each winner will receive \$750. The winner's advisor will receive \$250.

## Alcatel-Lucent

Alcatel-Lucent Foundation is proud to sponsor the Special Award Ceremony in 2007. The Foundation's primary areas of focus are improving math and science education and youth development. Following that focus, Alcatel-Lucent is providing scholarships to select finalists for innovation, scientific depth and rigor and creativity.

### **\$15,000 Award for Innovation**

EE066

#### **RCISS - Remote Computer Interface and Security System**

Andrew John Nowell, 19, Nottingham High School, Nottingham, Nottinghamshire, United Kingdom

### **\$15,000 Award for Scientific Depth and Rigor**

CS003

#### **Improper Fractional Base Encryption**

John Wilson Dorminy, 16, Sola Fide Home School, McDonough, Georgia

### **\$15,000 Award for Creativity**

EE012

#### **Improving Mileage Efficiency of Hybrid Cars**

Ruby Kandah, 17, William Mason High School, Mason, Ohio

**"Our challenge is 'innovating innovations.' By that I mean innovating the process of idea creation, and leveraging great ideas into products and solutions that can be useful in terms of financial impact for the company." -- Jeong Kim, President, Bell Labs**