



Winner Announcement

****Strict Embargo: Friday, May 18, 2007, 11:00 a.m. EDT****
****Do Not Release Until This Time ****

Government and Local Scholarship Awards Ceremony sponsored by Sandia National Laboratories

Intel International Science and Engineering Fair 2007
Presented by Agilent Technologies

Albuquerque, New Mexico, United States -- Science Service, in partnership with the Intel Foundation, this morning presented awards at the Government and Local Scholarship Awards Ceremony sponsored by Sandia National Laboratories. 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. The awards presented by governmental and educational organizations 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 immediately following the ceremony.

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

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

- AS057 **Calls in the Wild: Vocalizations of the Red-cockaded Woodpecker**
Michael Tyler Wham, 17, Sterling Ridge Home School, Woodlands, Texas
- BE008 **Short-Term and Working Memory in Children: A Comparison of Visual Sequences
and Pattern Recall**
Jessica Caroline Stanton, 17, Columbia High School, Lake City, Florida
- BI016 **Non-Invasive Transdermal Drug Delivery**
Shruthi Baskaran, 17, Kennewick High School, Kennewick, Washington
- CB006 **Effects of Cigarette Smoke on Inflammatory and Antimicrobial Activities
of Phagocytes Against Periodontal Pathogens**
Olga Artemis Hajishengallis, 15, duPont Manual Magnet High School, Louisville,
Kentucky
- CH041 **A New Model for Hydrophobic Hydration**
Sarah Elizabeth Marzen, 17, Thomas Jefferson High School for Science and Technology,
Alexandria, Virginia
- CS046 **Quantum Cluster Algorithms: Unsorted Database Search and
Modular Exponentiation**
Gabriel Joel Mendoza, 18, Americas High School, El Paso, Texas
- EA003 **The Marvelous Magnetometer, Part II**
Gavin Gregory Reen, 15, La Plata High School, La Plata, Maryland
- EE044 **An Inexpensive Microgravity Environment**
Alexandra Elizabeth Crook, 17, Box Elder High School, Brigham City, Utah
- EM001 **Shape Up: The Relationship Between Trout Habitat and Differently Shaped Rocks**
Alex Graham Schnaderbeck, 17, Sargent High School, Monte Vista, Colorado
- EN045 **Platinum Nanoparticles: From Hydrogen Storage to Cancer Treatment**
Daniel Scott Katz, 18, Hebrew Academy of the Five Towns & Rockaway, Cedarhurst,
New York
- ET036 **It's a Wonderful Light: An Experimental Study of a Fluorescent Solar Concentrator**
Bryce William Cronkite-Ratcliff, 16, Crystal Springs Uplands School, Hillsborough,
California
- EV036 **Effect of Land Use on Water Quality in Three Watersheds, Year Two**
Richard Charles Lee, 15, Cookeville High School, Cookeville, Tennessee
- MA012 **The String Topology BV Algebra, Hochschild Cohomology and the Goldman
Bracket on Surfaces**
Dmitry Vaintrob, 18, South Eugene High School, Eugene, Oregon

- ME035 **Paracrine Effects of Senescence-Upregulated p21 Induced Stromal Fibroblasts on Transformed Fibroblast Line C8**
Arun Puttachi, 17, Shaker Senior High School, Latham, New York
- MI033 **5'-methoxyhydnocarpin as an Inhibitor of Antibiotic Resistance in *E. coli***
Eric Nelson Delgado, 17, Bayonne High School, Bayonne, New Jersey
- PH062 **Great Balls of Fire!**
Caroline Julia von Wurden, 15, Los Alamos High School, Los Alamos, New Mexico
- PS045 **A Matter of Life and Death: Characterization of a Salt-inducible Lipase Gene from *Arabidopsis* Suggests a Link Between Programmed Cell Death and Salt Stress**
David Andrew Levary, 17, Parkway Central High School, St. Louis, Missouri

Tuition Scholarship Award of \$8,000 for original research in an important Naval-relevant scientific area

- CH019 **Corrosion Mitigation Using Thin-film Coatings of Polyelectrolyte Multilayers**
Samantha Kay Lawrence, 18, Christian Heritage High School, Riverdale, Utah
- EN005 **Science Thwarts Insurgents: Improvements in Ceramic Armor Systems Design Using Composites for Tensile Reinforcement in Ceramic Plates**
Melissa Nicole Carvell, 16, Bartlesville High School, Bartlesville, Oklahoma
- ME056 **Developing a Cost-Effective Time-Released Discriminatory Insect Repellent**
Emily Nicole Bick, 15, Millburn High School, Millburn, New Jersey

Team Tuition Scholarship Award in the amount of \$8,000 to be equally divided between the team members

- EM313 **The Effect of *Mercenaria mercenaria*, Igneous Rock, *Ammophila breviligulata*, and Lucerne Hay Riparian Buffers on Nitrate Sequestration in Correlation to Ecological Health**
Anup Myneni, 16, York High School, Yorktown, Virginia
Gabrielle Marie Strike, 17, York High School, Yorktown, Virginia

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

First Award of \$3,000

- AS004 **Histopathologic Investigation of Carcinogenesis in Planarians Secondary to Ultraviolet A, B, & C Exposure**
James Edward Fichtelman, 17, Saint Edward's Upper School, Vero Beach, Florida
- BE046 **Category Specific Semantic Deficits of Object Recognition in Adults with Neurological Damage**
Mounir Ahmad Koussa, 17, Tucson High Magnet School, Tucson, Arizona
- BI002 **Enzymatic Hydrogen Production: Expression of the Hydrogenases from the Hyperthermophile *Pyrococcus furiosus***
Joseph Robert Stunzi, 17, Clarke Central High School, Athens, Georgia

- CB001 **Differentiation of Neural Progenitor Cells into Inner Ear Hair Cells: A Strategy for Treating Deafness**
Sabrina Lakshmi Prabakaran, 16, Canterbury School, Fort Myers, Florida
- 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
- EA013 **Determining the Origin of a Volcanic Ash Layer in a Creek Bank**
Karissa Audrey Floerchinger, 16, Cascade High School, Cascade, Montana
- EE044 **An Inexpensive Microgravity Environment**
Alexandra Elizabeth Crook, 17, Box Elder High School, Brigham City, Utah
- EM005 **Comparison of the Phytodegradation of Trichloroethylene Using *Salix nigra* and *Salix caroliniana***
Meredith Celeste Boulos, 15, Episcopal High School of Jacksonville, Jacksonville, Florida
- EN025 **Development of a Ternary Manipulation for Fuel Display and Analysis**
Sarah Narceille Vaden, 17, Staunton River High School, Moneta, Virginia
- ET046 **The Development of a Localized Finite Differencing Computational Fluid Dynamics Program**
Robert M. Parrish, 17, George D. Chamberlain High School, Tampa, Florida
- EV020 **Design, Construction, and Testing of a Novel, Rapid, Inexpensive Coliform Detection System**
Dayton T. Horvath, 16, Newtown High School, Sandy Hook, Connecticut
- MA015 **Reconnaissance Mechanism for the Polygonal Numbers**
Joel Antonio Morales-Rosado, 17, Escuela Florencia Garcia, Las Piedras, Puerto Rico
- ME064 **Dendrimer-based Nanodevices for Drug Delivery Across the Blood Brain Barrier**
Shravani Mikkilineni, 16, Detroit Country Day School, Beverly Hills, Michigan
- MI046 **Cellular Translation Factors Required for Virion Host Shutoff (Vhs) Function of Herpes Simplex Virus: Effect of siRNA-induced Depletion of Cellular Factors on Vhs Activity**
Nandini Sarma, 17, Shawnee Mission East High School, Prairie Village, Kansas
- 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
- PS003 **Characterization of Photoreceptor Genes Regulating Apothecial Morphogenesis of *Sclerotinia sclerotiorum***
Kelly Michelle Chacon, 17, American Heritage School, Plantation, Florida

Second Award of \$1,500

- 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
- BE008 **Short-Term and Working Memory in Children: A Comparison of Visual Sequences and Pattern Recall**
Jessica Caroline Stanton, 17, Columbia High School, Lake City, Florida
- 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
- CB035 **Computational Exploration of Protein Functions**
Jane Ykovlevna Fomina, 17, Westfield High School, Westfield, Massachusetts
- CH039 **Bright, Luminescent Silicon Nanoparticles for Biological Applications**
Alexandra Maria Curtis, 17, Davis Senior High School, Davis, California
- CS018 **Ping Me! Optimizing Code for Cluster Computing**
Erika Alden DeBenedictis, 15, Saint Pius X High School, Albuquerque, New Mexico
- EA004 **Stream Channel Dynamics in Largo Canyon 1882-2005, Northwest New Mexico**
Shandiin Chanel Copeland, 16, Kirtland Central High School, Kirtland, New Mexico
- EE011 **Mobile Robot Intelligence for Cooperative Autonomous Navigation**
Elizabeth Charlotte Coquillette, 16, Hathaway Brown School, Shaker Heights, Ohio
- EM014 **Green Buildings**
Emmanuel Jose Amundaray, 16, Colegio Marista, Guaynabo, Puerto Rico
- EN005 **Science Thwarts Insurgents: Improvements in Ceramic Armor Systems Design Using Composites for Tensile Reinforcement in Ceramic Plates**
Melissa Nicole Carvell, 16, Bartlesville High School, Bartlesville, Oklahoma
- ET023 **Maglev Assisted Rocket Launch Propelled by a Hall-Effect Linear Accelerator**
Adam Matthew Fuhrmann, 17, Heritage High School, Leesburg, Virginia
- EV006 **Filtering PM10 from Agricultural Dust: Cyclone Efficiency, A Third Year Study of Agricultural Air Pollution**
Tara Ellen Gloyna, 17, Temple High School, Temple, Texas
- MA042 **A Wrinkle in Prime: An Investigation of Prime Properties in a Four-dimensional Sieve of Eratosthenes**
Chelsea Nicole Oden, 17, Monte Vista Senior High School, Monte Vista, Colorado
- ME056 **Developing a Cost-Effective Time-Released Discriminatory Insect Repellent**
Emily Nicole Bick, 15, Millburn High School, Millburn, New Jersey

- MI063 **Human Cytomegalovirus Activates Phosphatidylinositol 3, 4, 5 Triphosphate Kinase to Inhibit Apoptosis in Monocytes**
Alexander Todd Parmater, 18, Benton High School, Benton, Louisiana
- PH039 **Toward a More Equitable Distribution: Wealth Dynamics for Varying Savings Propensities in a Closed Market**
Will Rowan Fletcher, 17, Hellgate High School, Missoula, Montana
- PS032 **Rain Induced Diffusion of Monoterpenes from Basin Big Sagebrush**
Preston Kenneth Spaulding, 14, Weber High School, Pleasant View, Utah

Team Award of \$1,500 for each member

- 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

Team Award of \$1,000 for each member

- BI304 **An Integrated Smart Chip for the Early Diagnosis of Cancer: A New Take on Surface Molecular Imprinting**
JinJu Yi, 17, Plainview Old-Bethpage John F. Kennedy High School, Plainview, New York
Vijay Jain, 17, Herricks High School, New Hyde Park, New York

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

United States Army

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

- AS047 **An Ecological Stoichiometry Approach to Determining Predator-Prey Interactions of Streamside Animal Community Structure**
Puja Jagdish Umaretiya, 18, Chandler High School, Chandler, Arizona
- BE040 **Personality and Success in Education**
Telena Billie, 17, Wingate High School, Fort Wingate, New Mexico
- BI030 **Inhibition of Dimerization: Functional Studies of HIV Co-Receptor CCR5**
Julian Terrell Otis, 17, Walter Payton College Preparatory High School, Chicago, Illinois
- CB036 **Targeting TRAF Proteins as an Anti-tumor Strategy**
Yi Cai, 18, duPont Manual Magnet High School, Louisville, Kentucky
- CH013 **Determining Carbon Nanotubes' Thermodynamic Solubility: The Missing Link to a Practical Supermaterial?**
Philip Vidal Streich, 16, Homeschool, Platteville, Wisconsin
- CS018 **Ping Me! Optimizing Code for Cluster Computing**
Erika Alden DeBenedictis, 15, Saint Pius X High School, Albuquerque, New Mexico
- EA012 **Determining a Value for Gravity with an Accuracy of 10 Parts per Billion for the Electronic Kilogram Experiment**
Beatrice Smith Parker, 17, Bethesda-Chevy Chase High School, Bethesda, Maryland

- EE014 **Developing S.C.R.A.P.S.: The Self-Contained, Robust, Anthropomorphic Powered Skeleton: An Application in Flywheel Engineering**
Ian Michael Bouligny, 16, Catholic High School, New Iberia, Louisiana
- EM018 **EMMA: Determining the Effects of Environmental Disasters on Ecosystems**
Elisabeth Ann Baseman, 17, Brewster High School, Brewster, New York
- EN024 **Design and Synthesis of a Polyvinyl Alcohol Hydrogel for Controlled Release of Phosphate**
Alexandra L. Ghaben, 14, Central York High School, York, Pennsylvania
- ET042 **Biodiesel Fuel from Surf Diatoms**
Ashiyah Melyne Cays Vesterby, 16, Sequim High School, Sequim, Washington
- EV046 **A Survey of Cadmium Adsorption onto Soil Surfaces**
Melissa Ann Baranay, 18, Marian High School, Mishawaka, Indiana
- MA042 **A Wrinkle in Prime: An Investigation of Prime Properties in a Four-dimensional Sieve of Eratosthenes**
Chelsea Nicole Oden, 17, Monte Vista Senior High School, Monte Vista, Colorado
- ME038 **CEACAM-1a Is a Potent Negative Regulator of Graft-versus-Host Disease**
Melanie Yan-Yan Chow, 18, Rye High School, Rye, New York
- MI017 **Cecropins as an Antitumor Agent**
Charles John Hansen, 16, Northwestern High School, Kokomo, Indiana
- 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
- PS051 **One "Mite"y Mission: Biological Compensation Suppression of *Convolvulus arvensis* Implementing Host-Specific *Aceria malherbae***
Kaitlyn Jeanne Lingus, 17, Branson High School, Branson, Colorado

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

- BI304 **An Integrated Smart Chip for the Early Diagnosis of Cancer: A New Take on Surface Molecular Imprinting**
JinJu Yi, 17, Plainview-Old Bethpage John F. Kennedy High School, Plainview, New York
Vijay Jain, 17, Herricks High School, New Hyde Park, New York

Winners receive 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, \$300 from the Association of the United States Army, a gold medallion and a certificate of achievement.

- AS001 **The Equine Emotional and Physical Behavior Connection**
Katlin Jayne Hornig, 15, Sargent High School, Monte Vista, Colorado
- EN023 **Synthesis of Cupric Oxide (CuO) Nanostructures for Gas Sensing and Catalysis Applications**
Nandini Venkateswaran, 17, Herricks High School, New Hyde Park, New York

Alternate for the Operation Cherry Blossom trip to Tokyo, Japan

PS051 **One "Mite"y Mission: Biological Compensation Suppression of *Convolvulus arvensis* Implementing Host-Specific *Aceria malherbae***
Kaitlyn Jeanne Lingus, 17, Branson High School, Branson, Colorado

One all expense paid trip to London International Youth Science Forum, three \$1,000 U.S. Savings Bonds, \$300 from the Association of the United States Army, a gold medallion and certificate of achievement.

MI046 **Cellular Translation Factors Required for Virion Host Shutoff (Vhs) Function of Herpes Simplex Virus: Effect of siRNA-induced Depletion of Cellular Factors on Vhs Activity**
Nandini Sarma, 17, Shawnee Mission East High School, Prairie Village, Kansas

Alternate to attend the London International Youth Science Forum

EE014 **Developing S.C.R.A.P.S.: The Self-Contained, Robust, Anthropomorphic Powered Skeleton: An Application in Flywheel Engineering**
Ian Michael Bouligny, 16, Catholic High School, New Iberia, Louisiana

United States Coast Guard

For projects that relate to boating and water safety.

First Award of \$5,000

ET051 **Effects of Renewable Gasoline Extenders on Fuel Line**
Melissa Renee Snow, 17, Patrician Academy, Butler, Alabama

Second Award of \$3,000

CH019 **Corrosion Mitigation Using Thin-film Coatings of Polyelectrolyte Multilayers**
Samantha Kay Lawrence, 18, Christian Heritage High School, Riverdale, Utah

Third Award of \$1,000

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

Fourth Award of \$500

ET002 **The Effects of a Sailor's Mass on the Speed of a Laser Radial Sailboat in Various Wind Conditions**
Reguli Elisabeth Granger, 15, Science Center Home School, St. Petersburg, Florida

Department of Homeland Security, University Programs Office

Four individual and two team portable undergraduate scholarships, selected among all of the Intel ISEF categories. In addition, awards will include a paid consecutive 10-week summer research experience at various Department of Homeland Security (DHS) affiliated venues. DHS affiliated venues include DHS headquarters, DHS Centers of Excellence, and DHS national laboratories. A recipient must be a U.S. citizen and agree to major in science, math, engineering or technology. The Department of Homeland Security 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. DHS will ensure safe and secure borders, welcome lawful immigrants and visitors, and promote the free-flow of commerce.

Scholarship Award of \$24,000

PH310 **Reliability of CMOS Chips in Detecting Alpha Radiation**
Sergio Lozano, 18, Weslaco High School, Weslaco, Texas
Daniel Lozano, 17, Weslaco High School, Weslaco, Texas
Jonathan Munoz, 17, Weslaco High School, Weslaco, Texas

Scholarship Award of \$20,000

BE028 **Inattentive Blindness: Do You See What I See?**
Nicholas Ryan Waggy, 18, Upper Sandusky High School, Upper Sandusky, Ohio

BI304 **An Integrated Smart Chip for the Early Diagnosis of Cancer: A New Take on Surface Molecular Imprinting**
JinJu Yi, 17, Plainview-Old Bethpage John F. Kennedy High School, Plainview, New York
Vijay Jain, 17, Herricks High School, New Hyde Park, New York

CS041 **Spoofing the Sensors**
Kendra L. Potasiewicz, 17, Poland Central School, Poland, New York

EA024 **Flood Aid: A New Advanced System that Provides Emergency Flood Protection**
Kimberly Ann Potter, 17, Oak Ridge High School, Conroe, Texas

ME072 **Dynamic Herd Immunity Threshold Modeling**
Nathan Thomas Georgette, 15, Allen D. Nease High School, Ponte Vedra, Florida

The summer research experience can be completed during any summer of the individual's undergraduate years. Team scholarship will be equally divided among team members, and each team member will receive a 10-week internship experience.

Sandia National Laboratories

This award is for the best project related to the application of nanotechnology. The winner will also receive an invitation to participate in Sandia's summer internship for Intel ISEF participants.

Award of \$2,500

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

Sandia has major R&D responsibilities in energy and environmental technologies, economic competitiveness, and national security. Sandia is a multi-program laboratory operated by Sandia Corporation, a Lockheed Martin company, for the U.S. Department of Energy's National Nuclear Security Administration.

National Oceanic and Atmospheric Administration - NOAA

"The Pulse of the Planet" award will be awarded to the student whose projects best relates to NOAA's mission goals. This student will receive a fully paid internship at a NOAA research lab. The winner will also receive 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.

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

AVS Science and Technology Society, New Mexico Chapter

First Award \$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

Second Award of \$500

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

PH039 **Toward a More Equitable Distribution: Wealth Dynamics for Varying Savings Propensities in a Closed Market**
Will Rowan Fletcher, 17, Hellgate High School, Missoula, Montana

The New Mexico Chapter of the AVS Science and Technology Society is delighted that the Intel ISEF was held in Albuquerque, New Mexico in 2007, and is pleased to sponsor a Special Award at the Fair.

New Mexico Institute of Mining and Technology

Full tuition Scholarship values from \$5,000 to \$15,000 selected from all of the categories.

Scholarship Award

EE023 **Sustainable Energy System for a Green Structure (S.E.S.G.S)**
Vivian Lynette Rivera, 18, Academia Nuestra Senora de la Providencia, San Juan, Puerto Rico

PH057 **Determining Surface Compositions of Kuiper Belt Objects Through Spectrum Matching**
Morielle Mathanja Stroethoff, 16, Hellgate High School, Missoula, Montana

Each Scholarship is renewable annually for four years.

New Mexico State University

Full tuition scholarship for four years.

Scholarship Award

- BI025 **An Investigation of the Inhibition Mechanism of a *Scutellaria baicalensis* Component**
Harrison Phu Nguyen, 16, Detroit Catholic Central High School, Novi, Michigan
- MI023 **Investigation of New Mexico Lichens: Metabolic Products for Antibiotics**
Rebecca Renee Alexander, 16, Grants High School, Grants, New Mexico

Scholarship Alternates

- CH048 **Chemical Synthesis of Copper 2+ Ion Doped Anatase Titanium Dioxide Using a Hydrothermal Pouch Method**
Zachariah Richard Harris, 17, Harris Home School, Bosque Farms, New Mexico
- 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

Public Service Company of New Mexico (PNM)

The "PNM Energy Efficiency and Energy Production Award" recognizes the best science fair project demonstrating efficient use of energy (electric or gas) or effective production of electricity using renewable resources or conventional fuels. Public Service Company of New Mexico is a utility subsidiary of PNM resources, providing electricity to over 1.3 million people in New Mexico, as well as wholesale customers throughout the Southwest. PNM also serves 445,000 residential and commercial gas customers in New Mexico. PNM is committed to providing quality service to its customers, while minimizing the impact on the environment.

First Place Award \$1000

- ET005 **Transesterification: The Chef of Fuels**
Christopher Ernie Lopez, 17, Taos High School, Taos, New Mexico

University of New Mexico

Full Tuition Scholarship award renewable annually for four years. Scholarships will be awarded in the following categories: Animal Science, Behavioral and Social Sciences, Earth Sciences, Engineering and Medicine and Health.

Scholarship 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
- 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

CH048 **Chemical Synthesis of Copper 2+ Ion Doped Anatase Titanium Dioxide Using a Hydrothermal Pouch Method**
Zachariah Richard Harris, 17, Harris Home School, Bosque Farms, New Mexico

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

ME081 **Growth Inhibition of Metastatic Prostate Cancer: Effect of Methanolic Extracts from Various Nuts**
Micah Maetani, 16, Kamehameha High School-Kapalama, Honolulu, Hawaii

Scholarship Alternates

AS047 **An Ecological Stoichiometry Approach to Determining Predator-Prey Interactions of Streamside Animal Community Structure**
Puja Jagdish Umaretiya, 18, Chandler High School, Chandler, Arizona

BE057 **The Effect of Facial Expression on Altruistic Helping in Young Children**
Sara Kate Spiro, 15, Central Bucks High School West, Doylestown, Pennsylvania

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

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

ME005 **Device for Speech Impaired and Deaf (D-S.I.D): Life Changing Communication, an Alternative to Sign Language**
Fatima Shami, 17, Headstart School Islamabad, Islamabad, Pakistan

Scholarships valued from \$5,000 to \$15,000 annually for four years.