



SCIENCE SERVICE INC.

FOR USE: TUESDAY, JANUARY 9, 1996



THE 55TH ANNUAL



STS

1996 SEMIFINALISTS



**WESTINGHOUSE
SCIENCE
TALENT
SEARCH**



Administered by:

SCIENCE SERVICE INC.

1719 N Street, N.W.

Washington, D.C. 20036

(202) 785-2255

*Sponsored by Westinghouse Foundation &
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Westinghouse Science Talent Search

The Science Talent Search was the pioneering endeavor to discover and encourage high school seniors with the ability to be tomorrow's outstanding scientists and engineers. It has succeeded far beyond the hopes of its founders.

Aided over the years by millions of dollars in Westinghouse scholarships and similar aid from educational institutions eager to have such talented students, many of those discovered by the Search have gone on to distinguished careers. Many have received major recognition, including five who have won Nobel prizes.

The Search itself has become an institution, a prestigious tradition widely approved and supported by the academic and scientific communities.

The Westinghouse Foundation has made a notable contribution to the advancement of science in America by funding the Science Talent Search through the 55 years of its existence.

Science Service Inc., dedicated to advancing the public understanding of science, is proud to administer the annual Westinghouse Science Talent Search. Educators, scientists, engineers and journalists across America have enthusiastically cooperated in this annual activity which is a pinnacle event for high school seniors focused on science and engineering.

1996 Semifinalists

The achieving of semifinalist honors status in the Westinghouse Science Talent Search is evidence of ability and interest in science and engineering which is taken into consideration by colleges and universities in admissions and granting of scholarships. For this reason, the semifinalist list is distributed to all universities and colleges in the United States. Each of those selected as a semifinalist is being furnished with multiple certifications intended to accompany applications for college admissions and for scholarships, but a listing in this pamphlet should be accepted as an equivalent certificate. Listed are 127 females and 173 males.

From this group of 300 Semifinalists, 40 students are chosen as Finalists for the Science Talent Institute in Washington, D.C., (March 6-11, 1996) where \$205,000 in Westinghouse scholarships will be announced. The Finalists are announced on January 23, 1996 after the distribution of the Semifinalist Book. The names of the Finalists will be published in the January 27, 1996 edition of *Science News*. A copy will be sent upon request.

This listing of Science Talent Search Semifinalists is compiled by Science Service Inc. based on information provided by each student participant.

The student's name, age, home address, school, city of school and project title follow. If the student's home town differs from that of her/his school, it will be noted in the home address.

ALABAMA

Birmingham	<u>Resource Learning Center, Shades Valley</u> Lamarque, Jeffrey Collier (17) 2054 Baneberry Dr., Hoover 35244 <i>Detection of Heavy Atom Derivatives of Protein Crystals</i>
	<u>Vestavia Hills High School</u> Desilva, Channika Shalini (17) 1712-C Vestawood Ct. 35216 <i>WAF1/CIP1 Induction in the Absence of p53 in Prostate Cancer Cells by Differentiation-Inducing Agents</i>
Enterprise	<u>Enterprise High School</u> Tew, Kyla Elizabeth (18) 102 Victoria Dr. 36330 <i>Lithic Distribution and Site Structure at the Evie Site</i>
Indian Springs	<u>Indian Springs School</u> Quillen, Henry Clay (17) 4215 Glenwood Ave., Birmingham 35222 <i>Evaluation of Desgin Methods for Improved Nuclear Reactor Containments</i>
Mobile	<u>Alabama School of Mathematics and Science</u> Mukerji, Rita (17) 5554 Thomas Jefferson Ct. 36693 <i>Heart Rate Variability to Predict Sudden Death in Humans</i>

ARKANSAS

Hot Springs	<u>Arkansas School of Math & Sciences</u> Reuter, Joanna Marie (18) Rte. 5, Box 243, Berryville 72616 <i>Effect of Three Ozark Geological Formations on Forest Composition</i>
	White, Robert Brian (17) 4711 Bellerive, Paragould 72450 <i>Determination of Magnetic Susceptibilities for Paramagnetic Compounds and Escherichia coli</i>

CALIFORNIA

Alhambra	<u>Alhambra High School</u> Chow, Alexander (17) 400 S. Chapel Ave. 91801 <i>Systematic Relationships Among Genera and Subfamilies of the Nereididae (Annelida: Polychaeta)</i>
	Kuramoto, Lani Ren (17) 2653 Stranahan Dr. 91803 <i>Poecilogony vs. Cryptic Speciation in the Brittle Star Ophionereis annulata (Echinodermata: Ophiuroidea)</i>
	Lam, Albert Hau Wing (17) 508 Westboro Ave. 91803 <i>Inhibitive Effects of Cinnamomum camphora on MG63 and A549</i>
	McCann, Matthew Brian (17) 613 La Paloma Ave. 91803-3041 <i>Photoluminescence Activation in Terlingua and Terlingua-Type Calcites: Evidence From Luminescence Spectroscopy and Inductively Cupled Plasma-Mass Spectrometry</i>

Carpinteria	<u>Cate School</u> Aller, Lawrence William (16) 1109 S. Augusta Way, Salt Lake City 84108 <i>Influence of Electro-Oxidation on Commercially Useful Properties of Polyaniline: Synthesis, Resistance, and Stability of Leucoemeraldine, Emeraldine Salt, Pernigraniline and Emeraldine Base</i>
Etiwanda	<u>Etiwanda High School</u> Sun, Lisa Lee (16) 14026 Ticonderoga Ct., Fontana 92336 <i>Efficiency of Chlorine, Chlorine Derivatives, and Filtration as Methods of Water Treatment</i>
Fresno	<u>Edison High School</u> Liu, Grace I-Chen (17) 6747 N. Durant Way 93711 <i>Effects of Astragalus radix on the Metabolism of in vitro Crayfish Ventral Nerve Cords as a Model of Treatment for Neural Injury and Neurodegeneration</i>
Irvine	<u>University High School</u> Sirko, Edwin John (17) 19512 Sierra Mia 92715 <i>Chaos vs. Periodic Motion in Physical Systems and Computer Simulations</i>
La Mesa	<u>Helix High School</u> Hwang, Wender (17) 5525 Lesa Rd. 91942-1704 <i>Integrin-Mediated Adhesion to Laminin-5 Induces Migration in Malignant, but Not Normal Breast Epithelial Cells</i>
North Hollywood	<u>North Hollywood High School</u> Shapiro, Kevin Alfred (16) 18140 Medley Dr., Encino 91316-4446 <i>Enumeration of Bdellovibrios and Other Components of the Microbial Community on the Surface of Carbon-Activated Fibrous Carriers in the Process of Biofilm Development in situ</i>
Palo Alto	<u>Henry M. Gunn Senior High School</u> Chang, Christopher Chung-Tien (16) 715 Charleston Ct. 94303 <i>On the Steiner Point Problem in Discrete Geometry</i>
Pebble Beach	<u>Robert Stevenson School</u> Chan, Wai-Yip Walter (17) 69 Aloha Ave., San Francisco 93122 <i>Test of Strychnine Concentration in Chinese Herbal Medicine</i>
Redlands	<u>Redlands High School</u> Kulkarni, Rajan Pramod (16) 11632 Butterfield St., Loma Linda 92354 <i>Ionic Diffusion in Porous Sol-Gel Glasses</i>
Sacramento	<u>Rio Americano High School</u> Balasingham, Anjali Sudarshini (17) 1056 Wilhaggin Park Ln. 95864 <i>How Growing Space Affects the Root-Shoot Ratio of Scirpus acutus</i>
San Diego	<u>Torrey Pines High School</u> Schatz, Andrew John (17) 4636 South Ln., Del Mar 92014 <i>Fractal Analysis of Southern California Lagoons</i>

Santa Monica	<u>Crossroads School</u> McCabe, Kevin Michael (18) 656 Via de la Paz, Pacific Palisades 90272 <i>Rapid Diagnosis of Infection and Identification of Pathogenic Bacteria: Polymerase Chain Reaction of the 16S Ribosomal RNA Coding Region and Hybridization With Species Specific Probes</i>
Saratoga	<u>Saratoga High School</u> Ing, Connie Jean (17) 13386 Ronnie Way 95070 <i>Rotation Periods and Relative Ages of Solar-Type Stars</i>
Temple City	<u>Temple City High School</u> Chan, Wesley Tein-Houi (17) 9729 E. Lemon Ave., Arcadia 91007-7870 <i>Hematopoietic and Myogenic Differentiation of Mouse Embryonic Stem Cells <u>in vitro</u></i>
Torrance	<u>Torrance High School</u> Xu, LuQing (17) 2800 Plaza Del Amo, Apt. 45 90503 <i>Standardization of MRI Volumetric Studies: Hippocampal and Amygdaloidal Atrophy Predates Clinical Symptoms in Individuals at Risk for Alzheimer's Disease</i>
Villa Park	<u>Villa Park High School</u> Shaw, Susan Jean (17) 3312 E. Mandeville Pl., Orange 92667 <i>Directional Perception in the Human Auditory System</i>

COLORADO

Brush	<u>Brush High School</u> Kelly, Jamie Lynn (17) 9 Circle Dr. 80723 <i>Leidenfrost Phenomenon: Discovery of New Mathematical Relationships</i>
Colorado Springs	<u>William Palmer High School</u> Oraker, Jason C.R. (18) 3060 Caravan Ct., Colorado Spring 80917 <i>International Baccalaureate: Comparitive Study of Self-Esteem, Locus of Control and Affect Balance</i>

CONNECTICUT

Danbury	<u>Danbury High School</u> Proverb, Adrienne Therese (17) Zero Thaddeus Ave. 06811-3133 <i>Application of Elecrophoretic Mobility in the Characterization of Paper Pulp: Two-Year Study</i>
New Haven	<u>High School in the Community</u> Krebs-Carter, Malora Katharine (17) 195 Livingston St. 06511 <i>Investigation of Changes in Adult Skeletal Robusticity Associated With the Intensification of Agriculture: Comparison of Middle and Late Woodland Populations in the Lower Illinois Valley</i>
Windsor	<u>The Loomis-Chaffee School</u> Shanbhag, Maya (17) 93 Searingtown Rd., Albertson 11507 <i>Hypothetical <u>in vitro</u> Model for Drug-Induced Lupus: Inhibition by Mast Cell Stabilizers</i>

DISTRICT OF COLUMBIA

Washington	<u>Gonzaga College High School</u> Tahan, Charles George (17) 1705 Monza Rd., McLean 22101 <i>El Niño Southern Oscillation (ENSO): Can the Sometimes Devastating Effects of This Pacific Oriented Cycle Be Predicted?</i>
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FLORIDA

Cooper City	<u>Cooper City High School</u> Sturdy, Laela Janine (17) 8672 S.W. 55th St. 33328 <i>Comparative Study of Natural, Created, and Restored Wetlands: Three-Year Study</i>
Daytona Beach	<u>Mainland Senior High School</u> Shanbhag, Vinayak Pandurang (15) 165 Unabelle St., Holly Hill 32117 <i>Comparative Study of the "Vapor Pressure Equilibrium Method"</i>
Gainesville	<u>Buchholz High School</u> Hewlett, Eric M. (17) 5401 N.W. 23rd Pl. 32606 <i>Tannic Acids' Mode of Action in Control of Nematodes</i>
Hialeah	<u>Hialeah High School</u> Piloto, Obdulio Albert (17) 1734 W. 42nd Pl. 33012 <i>Interaction Between the TA1 Monoclonal Antibody and the C9 Antigen to Determine Accuracy of a Computer Docking Model</i>
Jacksonville	<u>Stanton College Preparatory School</u> Graham, Matthew David (18) 2238 Grey Fox Ct., Orange Park 32073 <i>Prevention of Aircraft Accidents Resulting From Ground Ice Accumulation: Non-Intrusive Ultrasonic Surface Condition Sensor</i> Wu, Vezen (17) 2929 Cortez Rd. 32246 <i>Potent Antibiotics in Carnivorous Plants</i>
Miami Beach	<u>Miami Beach Senior High School</u> Weinberg, Richard Lawrence (17) 4550 N. Jefferson Ave. 33140 <i>Inhibition of Endothelin-f and Serum Induced Proliferation of Ovine Airway Smooth Muscle Cells by Heparin Related Glycosaminoglycans</i>
Niceville	<u>Niceville Senior High School</u> Tu, Albert Weizen (18) 454 Olde Post Rd. 32578 <i>Novel Methods for Construction of Polymeric Electronic Displays</i>
North Miami Beach	<u>North Miami Beach Senior High School</u> Toonkel, Rebecca Lyn (17) 268 South Pkwy., Golden Beach 33160 <i>Biographical Data and Subsequent Success in College Based Upon Acceptance to Primary Choice College and Continued Success Throughout College</i>
Parkland	<u>Marjory Stoneman Douglas High School</u> Allen, Thomas Arthur (17) 5010 N.W. 104th Ave., Coral Springs 33076 <i>Magnetic Field Manipulation of Chromosomal Crossover Between Wild Type and Mutant Tan Strains of <u>Sordaria fimicola</u></i>

Pensacola	<u>Pensacola High School</u> Tanner, Jessica Mary (17) 4720 Velasquez 32504 <i>Use of an Ion Exchange Film for Determination of Metal Ions in Water</i>
Pompano Beach	<u>Ely High School</u> Ahmed, Mahiuddin (17) 13299 N.W. 6th Pl., Plantation 33325 <i>Cis-Trans Photoisomerization in Model Diene Systems of the Visual Process</i>
Saint Petersburg	<u>Saint Petersburg Senior High School</u> Korabathina, Ravikiran (17) 3341 Crescent Oaks Blvd., Tarpon Springs 34689 <i>Characterization and Distribution of Progesterone Receptors in Ovine Hypothalami and Pituitary</i>
Winter Park	<u>Winter Park High School</u> Nallamshetty, Leelakrishna (17) 3021-G Whisper Lake Ln. 32792 <i>Evaluation of Asthmatic Children for Respiratory Syncytial Virus Serology</i>
GEORGIA	
Lovejoy	<u>Lovejoy High School</u> Boucugnani, David Agustin (17) 1366 Grindenwald Dr., Jonesboro 30236 <i>Automated Polyacrylamide-bis Electrophoresis Variation and Reproducibility Applied to Single- and Double-Loaded Porous Matrix Gels Derived From Automated Fragment Analysis Data</i>
Moultrie	<u>Colquitt County High School</u> Meyer, James Frederick (18) 2037 S.E. 2nd St. 31768 <i>Alternative Building Materials</i>
IDAHO	
Cascade	<u>Cascade Junior-Senior High School</u> Cimbalik III, Ed J. (17) 1921 Gold Dust Rd. 83611 <i>Effectiveness of Hypolimnetic Injection at Enhancing Salmonidae sp. Trout Habitat in Ultra-Eutrophic Reservoirs That Experience Hypolimnion Anoxia</i>
ILLINOIS	
Aurora	<u>Illinois Math & Science Academy</u> Upadhyay, Gaurav Anand (17) 1625 Old Barn Cir., Libertyville 60048-1297 <i>Modification of <u>in vitro</u> Testing Procedure of Antibody Responsible for Heparin-Induced Thrombocytopenia</i>
	Wang, Jeffrey Hsing-che (17) 1329 Green Trails Dr., Naperville 60540 <i><u>In vivo</u> Stress-Induced Corrosion on Cast Cobalt-Chromium Alloy Hip Prosthesis Heads</i>
Chicago	<u>Good Counsel High School</u> Sajdak, Eva Maria (18) 4019 W. Cornelia 60641 <i>Morphological Variance in <u>Melosira granulata</u> and Its Relationship to Ecuadorian Lakes</i>

	<u>Lincoln Park High School</u> Bernikowicz, Priscilla Ann (17) 3846 N. Kostner 60641-2850 <i>Passive Sampling Filter Monitor and Gas Chromatography: Mass Spectrometry to Measure Nicotine as a Marker for Environmental Tobacco Smoke Exposure of Lincoln Park High School Students</i>
Evanston	<u>Evanston Township High School</u> Flaxman, Abie D. (17) 2310 Grant St. 60201 <i>Linear Elastic Collisions of Two-Dimensional Finite Length Rods</i>
Libertyville	<u>Libertyville High School</u> Robey, Thomas Edwin (17) 1021 S. Fourth Ave. 60048 <i>Immunoquantitation of Human Chorionic Gonadotropin by Capillary Electrophoresis</i>
Lombard	<u>Glenbard East High School</u> Rana, Shaunak Vijay (17) 724 E. Magnolia Cir. 60148 <i>Effect of Cocaine on Mesencephalic Cell Cultures: Is the Neuronal Death Observed Necrotic or Apoptotic?</i>
Peru	<u>Saint Bede Academy</u> Garg, Rajeev Kumar (17) 11 Spring Creek Dr., Spring Valley 61362 <i>Sunglasses: The Truth</i>
Rockford	<u>Auburn High School</u> Rifkin, Lori Ellen (16) 2193 Dior Dr. 61107 <i>Regulation of Expression of the First Gene in the Dolichol Pathway of Protein N-glycosylation in the Yeast <u>Saccharomyces cerevisiae</u>: Effect of Poly(A) Tails on the Stability of ALG7 mRNA</i>
INDIANA	
Ellettsville	<u>Edgewood High School</u> Poliskie, Georgia Michelle (17) 3605 Edwards Ct., Bloomington 47401 <i>(AgI)_x(AgPO₃)_{1-x} Solid-State Batteries: Performance as Function of Percent Silver Iodide Content</i>
Mishawaka	<u>Marian High School</u> Tricker, Jennifer Jo (17) 20933 Madison Rd., South Bend 46614 <i>Toxicity Assays to Evaluate Processes for Remediation of Water Contaminated With AZO Dyes: Three-Year Study</i>
IOWA	
Bettendorf	<u>Bettendorf High School</u> Murphy, Sean Christopher (18) 6515 James Rd. 52722 <i>Non-leguminous Nitrogen Fixation in a Hydroponic System and Evaluation of Potential Association Methods</i>

KANSAS

Shawnee Mission Shawnee Mission South High School
Yu, Stephanie Yen-Hsin (17) 10308 Oakmont, Overland Park 66215
Fourier Analysis of Cardiograms as Prognostic Tool for Myocardial Infarction and Other Abnormalities in Heart Rhythm

KENTUCKY

Lexington Paul Laurence Dunbar High School
Mankad, Raj Vipul (18) 4816 Waterside Dr. 40513
Intracellular Signal Transduction Pathways Regulating Pulmonary Artery Smooth Muscle Cell Proliferation and Differentiation in Hypoxia, the Role of Nitric Oxide: Two-Year Study

Louisville Dupont Manual Magnet High School
Possner, Adam Bradley (18) 8014 Ashdown Ct., Prospect 40059-9430
Methane Injection in Simulated Wetland Paddies: Effect on Rice Plant Growth and Yield

LOUISIANA

Baton Rouge Baton Rouge Senior High School
Rau, Alexander Vikram (17) 730 Carriage Way 70808-4833
Vibration-Induced Segregation in Two and Three Dimensions

New Orleans Benjamin Franklin High School
Leung, Calvin Hayming (17) 6196 Chatham Dr., Apt. 146 70122
Predicted Secondary Structure of Proliferating Cell Nuclear Antigen (PCNA) mRNAs of Human and Rodents

MARYLAND

Bethesda Walt Whitman High School
Acharya, Sankalp (15) 6705 Tomlinson Terr., Cabin John 20818
Econometric Analyses and Simulations of Marine Biomass: Policy Recommendations

Joung, Moo Kwang (17) 5301 Westbard Cir., Apt. 212 20816
The Way Our Brain is Pleased With 1/f Sound: Nonlinear Analyses of Human EEG

McReynolds, Lisa James (17) 6515 E. Halbert Rd. 20817
Insulin and Insulin-Like Growth Factor-1 Receptors Share the Tyrosine Phosphorylation Pathway but Not the Gene Expression Pathway of the IL-4 Receptor

Penny, Dina Beth (17) 6604 Millwood Rd. 20817
Molecular Approach to Understanding Ovarian Follicular Development

Columbia Atholton High School
Mahjouri, Mani S. (17) 6193 Wooden Run Dr. 21044
Simulation of Charged Particle Motion in Jupiter's Magnetosphere

Tropf, Andrew Zachary (17) 13060 St. Patricks Ct., Highland 20777
Optical Properties of KRS-5

Gaithersburg Quince Orchard High School
Roy, Sandip (17) 12300 Morganshire Ct. 20878
Modeling and Climatology of Blowing Dust in Lubbock, Texas, Through Discriminant Analysis

Severna Park Severn School
Edsall, Elizabeth Wesler (17) 1926 Carrollton Rd., Annapolis 21401
LUNGSPEAK (Non-Stethoscopic Auscultation of Thoracic Cavity Sounds)

Silver Spring Montgomery Blair High School
Acton, Mark Robert (17) 107 E. Lenox St., Chevy Chase 20815
Experimental Investigation of Fe-S-O Liquids as an Analog to Sulfide Liquids in Natural Magmas

Dang, James Minh (17) 21 Allenhurst Ct., Gaithersburg 20878-1934
Droplet Noncoalescence in Vibrated Support Liquids

Ding, Yi-Lun (17) 3221 Medway St., Wheaton 20902
Four Concentric Spheres Skull Resistivity Model

Hong, Christopher Soon (17) 8507 Aqueduct Rd., Potomac 20854
Effects of Slip at Crystal-Melt Interface

Lurie, Jacob (18) 6611 Braeburn Pkwy., Bethesda 20817
Effective Content of Surreal Algebra

Mu, Chunya Jenny (17) 15501 Summer Grove Ct., Gaithersburg 20878
Pulsatile Flow in a Cerebral Aneurysm

Pant, Alok C. (17) 11840 Dinwiddie Dr., Rockville 20852
Phosphorylation of High Molecular Weight Neurofilament Protein by Neuronal Cyclin Dependent Kinase 5

Van Der Woude, Brian James (17) 3151 Castleleigh Rd. 20904
Intra-Arterial Injection Methodologies

MASSACHUSETTS

Lexington Lexington High School
Ingolia, Nicholas Thomas (16) 27 Turning Mill Rd. 02173-1317
Sensory Effects on Development and Aging in Caenorhabditis elegans

Sung, Emily (17) 17 Nichols Rd. 02173
Evolution of DNA: Discovering the Trends of Genome Size

Vandiver, Benjamin Mead (17) 3 Peacock Farm Rd. 02173
Shape Investigation by Water Displacement Measurements and Computational Inference

Newton Center	<u>Newton South High School</u> Stanley, Rachel (16) 50 Metacomet Rd., Waban 02168 <i>Clumping of Identical n-tuples in Coding and Noncoding DNA Sequences</i>
North Dartmouth	<u>Dartmouth High School</u> Hsu, Leslie (17) 147 Lexington Ave. 02747-3233 <i>Color of Sky: Difficulties With Rayleigh Scattering and New Explanations for Blueness of Sky</i>
Wellesley	<u>Dana Hall School</u> Lau, Renee (17) 9 Lash St., Chelsea 02150 <i>Effects of Sound on Visual Perception</i>
West Roxbury	<u>Roxbury Latin School</u> Hafler, Brian Palmer (17) 110 Forest Ave., West Newton 02165 <i>Single Amino Acid Substitution in the Autoantigen Peptide Alters the Cytokine Profile Inducing Protective (Th2) T Cells</i>

MICHIGAN

Ann Arbor	<u>Greenhills School</u> Watson, Brendon Omar (18) 3351 Windshadow Dr. 48105 <i>Chimeric Analiiysis of Opioid Receptor Domains Critical for the Binding Selectivity of Mu Opioid Ligands</i>
Beverly Hills	<u>Detroit Country Day School</u> Reddy, Chandan Gopal (17) 5685 Paint Valley Dr., Rochester 48306 <i>On Cubic Sublattices</i>
Detroit	<u>Cass Technical High School</u> Brown, Simone Katherine (17) 2671 Martin Luther King Blvd. 48208 <i>Synthetic Analogues of Rare, Naturally-Occuring Permanent Magnets: Evidence Unusual Thermophysical Phenomena in the Geologic Environment</i>
Okemos	<u>Okemos High School</u> Agrawal, Ritesh (17) 4400 Cherrywood Dr. 48864 <i>Self-Organized Criticality: Word Processor Line-Wrap as a Possible Model for Earthquake Activity</i>
Troy	<u>Athens High School</u> Oh, David Yoonsuk (17) 1126 Robertson 48098 <i>Production of Transgenic <u>Cucumis melo</u> L. Expressing N-Terminus & Sense-Defective Coat Protein Genes of Zucchini Yellow Mosaic Virus</i>

MINNESOTA

Bloomington	<u>Thomas Jefferson Senior High School</u> Bhargava, Saurabh (17) 10408 Cavell Ave. S., Minneapolis 55438 <i>Definitive Taxonomic Resolution of <u>Ailuropoda melanoleuca</u> Inferred Through Multiple Alignment of the Hemoglobin Alpha Protein Chain Protein and Mitochondrial Cytochrane DNA</i>
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Buffalo	<u>Buffalo Senior High School</u> Roos, Robert Joseph (17) 10625 County Rd. 116, Rogers 55374 <i>Neuroscientific Applications of Photomacroscopic Serial Sectioning and Reconstruction</i>
Randolph	<u>Randolph High School</u> Kittelson, Liv Anne (18) 2801 265th St. 55065 <i>Simulated Effects of Abstinence on the Movement of HIV Through a Closed Population of Twenty: Two-Year Study</i>

MISSISSIPPI

Ridgeland	<u>Saint Andrew's Episcopal School</u> Pelly, John William (17) 107 Oriole Pl., Brandon 39042 <i>Effects of Jovian Moon Io on Jupiter's Synchrotron Radiation Emissions</i>
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MISSOURI

Blue Springs	<u>Blue Springs High School</u> Hughes, Bryan Charles (17) 3009 Castle Dr. 64015-2852 <i>Assaying the Anti-Microbial Effects of Strains of <u>Erwinia herbiocola</u> and <u>Pseudomonas fluorescens</u> Against Certain Phytopathogenic Bacteria and Fungi</i>
Chesterfield	<u>Parkway Central High School</u> Tilford, Mark Jeffrey (17) 14564 Harleston Village Dr. 63017 <i>Sub-Set Take Away Game</i>
Kirkwood	<u>Kirkwood High School</u> Pelikan, Laura Kathryn (17) 411 Woodview Manor Ln. 63122 <i>Causes and Consequences of Seed Size in <u>Liatris cylindracea</u></i>
Mountain Grove	<u>Mountain Grove R-3 High School</u> Kaps, Sara Elizabeth (18) 504 Fredrick, Mountain Grove 65711 <i>Ore Microscopy of the Bornite Pods in the Casteel Mine, Viburnum Trend, Southeast Missouri</i>

MONTANA

Missoula	<u>Sentinel High School</u> Potts, Daniel Lawrence (18) 714 Continental Way 59803 <i>Role of Aspect in Productivity of Young Coniferous Trees</i>
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NEBRASKA

Columbus	<u>Lakeview High School</u> Buccolo, Gina Marie (17) 3752 35th Ave. 68601-1658 <i>Synthesis of Buckminsterfullerene in a Device of Original Design</i>
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NEVADA

Las Vegas Las Vegas Academy
Riggs, Megan Estelle (17) 7 Fuchlow 89115
 Balance and Placement

NEW HAMPSHIRE

Exeter Phillips Exeter Academy
Dedeo, Simon Joseph (16) 178 E. 64th St., New York 10021
 Distribution of Hydrogen (HI) Clouds in Our Galaxy Derived From an Analysis of the Doppler Shift of the 21 cm Transition Line

Siddiqui, Mustafa Mohsin (16) 14800 Memorial Dr., Apt. 276, Houston 77079
 Assay System to Investigate Effects of Lactoferrin on Growth, Toxin Production, and Toxin Release of Enterohemorrhagic Escherichia coli and Lactoferrin's Potential as a Clinical Treatment for Hemolytic Uremic Syndrome

Lincoln Lin Wood High School
Dovholuk, April Ann (17) Main St. 03251
 Using Plant Tissue Culture for the Restoration of Cypripedium reginae

NEW JERSEY

Cape May Court House Middle Township High School
Taylor, Sarah Louise (17) 230 29th St., Avalon 08202
 Strategic Sailing

Morristown Morristown High School
Weitz, Daniel Paul (17) 18 Lynnfield Dr. 07960
 Enhancing the Confinement Quality of High-Temperature Plasmas Through the Implementation of Intelligent Dynamically Responsive Field Systems: Five-Year Study

Ridgewood Ridgewood High School
Wood, Emily (17) 35 Gilbert Rd., Ho Ho Kus 07423
 Mapping a Gene for Novel Microcytic Anemia in Mus musculus

Warren Watchung Hills Regional High School
Vieira, Cristina Cunha (17) 37 Casale Dr. S. 07059
 Proton-ATPase in Choloroflexus Aurantiacus as Member of the F₁ F₀ Class of ATP Synthases on the Basis of Interactions With Inhibitors and Activators That Influence ATP Hydrolytic Production

NEW MEXICO

Farmington Farmington High School
Yaros, Diane Fiddler (17) 3908 Buena Vista 87401
 Effects of UV Light on the Chlorophyll and MAAs of Isochrysis galbana: Phase III

Montezuma Armand Hammer United World College
Delgado, Josser Eduardo (18) A.H.V.W.C. 87731
 Bacterial Adaptation From a Low to a High Hydrocarbon Diet

Lee, Roger (18) P.O. Box 353 87731
 New Interpretation of the Definitions and Implications of 'Normal Goods' and 'Inferior Goods'

Segerstrale, Kristian (18) Highway 65 87731
 Social Costs in the Healthcare Sector of High Rate Unemployment in Helsinki and Surroundings in the Beginning of the Nineties

Taos Taos High School
Salazar, Francisco Joseph (18) P.O. Box 808, Ranchos De Taos 87557
 Understanding the Relationship Between LFA-1 and the Cytoskeleton: Possibility of Controlling Cell Adhesian?

NEW YORK

Albany Colonie Central High School
Essien, Ime Bassey (17) 41 Grounds Pl. 12205
 Involvement of Protein Kinase C in Control of Cell Cycle Progression in Intestinal Epithelial Cells

Bayside Benjamin Cardozo High School
Youssof, Samuel Abraham (17) 61-15 97th St., Apt. 1F, Rego Park 11374
 Effects of Thermal Cycling on the Contact Resistance of an Electrically Conductive Adhesive in Printed Circuit Board Pin-Through-Hole Joints

Bellmore John F. Kennedy High School
Berk, Evan Spencer (17) 2664 Karen St. 11710
 Cognitive and Perceptual Differences Between Males and Females Through Use of Negative Priming and Advertisements: Two-Part Study

Bohemia Connetquot High School
Mooney, Erik Karl (17) 789 Sycamore Ave. 11716
 Effect of Ultrasound on the Rate of Chemical Reactions

Tewari, Nidhi (17) 368 Thrift St., Ronkonkoma 11779
 Degree That Premuim Ink and Inks Based on Soybean Oil and Rubber De-Ink During Recycling Process

Bronx Bronx High School of Science
Abad, Chris James (17) 564 First Ave., Apt. 21 Y, New York 10016
 Group II PLA2 in Plasma of Infected Baboons Kills Gram-Positive Bacteria

Afthinos, John N. (17) 208-17 15th Ave., Bayside 11360
 Effect of the Anabolic Steroid Nandrolone Decanoate on Vertebral Body Mechanical Properties in Macaques

Alpert, Lily Taylor (17) 2601 Henry Hudson Pkwy. 10463
 Gender Differences in Children's Fears

Bishay, Andre Michael (17) 8-17 149th St., Whitestone 11357
 Teacher Motivation and Job Satisfaction: Employing the Experience Sampling Method

Chan, Elinor (17) 56-24 184th St., Fresh Meadows 11365
Electrode Effect on the Ferroelectric Properties of Pb(Zr, Ti) O₃ Thin Films

Chang, Andy (17) 15-11 Parsons Blvd., Whitestone 11357
Effects of Radiation on the Electrical Properties of Ferroelectric PZT Thin Films

He, Ling Yang (18) 4 S. Pinehurst Ave., Apt. 2B, New York 10033
A Novel Method of Exponential Amplification for Alkaline Phosphatase in EIA

Hsieh, Michelle (17) 71-22 Juno St., Forest Hills 11375
Effects of Age, Gender, and Ischemia on Brain Ascorbate and Glutathione Levels

Hsu, Chin-Yu (17) 33-11 165th St., Flushing 11358
Methodology for Direct Structural Determination of Proteins in Solution

Hui, Anthony Yiu Bong (17) 66-19 Douglaston Pkwy., Douglaston 11362
Investigation Into Modes of Formation of Buckminsterfullerene

Hyde, Rhonda (17) 2170 University Ave., Apt. 5G 10453
Immunocytochemical Evidence for the Neural Enzyme EP24.15 Implicated in Alzheimer's Disease and Schizophrenia

Joe, Valerie (17) 30-07 208th St., Bayside 11360-2422
*Effect of Promoter Mutations on Radioresistance in *Schizosaccharomyces pombe* rad9*

Kunjukunju, Nancy (17) 32-37 86th St., Queens 11369
Molecular View of the Rochow Process: A Solid Catalyzed, Gas-Solid Reaction

Lin, Stephanie (17) 77-21 Kew Forest Ln., Forest Hills 11375
Characterization of a Mutated Gene for Telomeric Rapid Deletion

Majid, Adrian (16) 1126 Leland Ave. 10472
Mapping the Rheumatoid Factor Binding Site Using Heavy and Light Chain Recombination and Site Directed Mutagenesis: Implications for Understanding Rheumatoid Arthritis

Parhar, Preeti Kanwal (17) 84-24 130th St., Kew Gardens 11415
Assessment of Proliferating Cell Nuclear Antigen in Primary Breast Carcinoma Patients by Image Analysis

Pastuszak, Alexander Wojciech (17) 147-26 84th Dr., Briarwood 11435
Use of Maximal Elastance Derived From a Single Beat as an Index of Right Ventricular Contractility

Prasad, Antara (17) 86-31 Range St., Bellerose 11427
Calcitonin Gene-Related Peptide as Marker for Estrogen Action in Hippocampus of Female Rat Brain: Implications for Understanding Pathologies of Alzheimer's Disease and Memory Loss

Pua, Tarah Leigh (17) 138-35 Elder Ave., Apt. 3J, Flushing 11355
Dimerization of PTP λ Results in the Change in Specificity for Phosphotyrosine Proteins in v-src Transformed Cells

Sareen, Chaitanya Dev (17) 26-16 Union St., Flushing 11354
Application of Microwave-Induced Organic Reaction Enhancement (M.O.R.E.) Chemistry to Hydrazine Processes: Simplification of the Akabori Method for Rapid and Inexpensive Peptide Sequencing

Schaeffer, Sarah Emilie (17) 2600 Netherland Ave., Apt. 15-11, Riverdale 10463
Factors Affecting Perceptions of Justice: Self-Interest vs. Group-Value

Shapiro, Daniel A. (17) 315 E. 86th St., Apt. 4G, New York 10028
Stiffness and Energy Required to Deform Intact vs. Instrumented Spinal Motion Segments

Takai, Erica (17) 245-20 Rushmore Ave., Douglaston 11362
Role of Nitric Oxide on 3-Nitropropionic Acid Toxicity and Effects of Glutathione Depletion

Tom, Andrew H. (17) 144-10 29th Rd., Flushing 11354
Yeast Cells as a Model System to Study Mechanisms of Multidrug Resistance in Mammalian Cells

Tsai, Pei-Hsin (17) 5284 Post Rd. 10471
*Sensorin-Containing Neurons in the Buccal Ganglion of *Aplysia* are Afferents That Innervate Muscles of the Buccal Mass*

Voskoboynik, Uri (18) 780 E. 2nd St., Apt. 1C, Brooklyn 11218
Anomalous Field Dependence of Blocking Temperature of Natural Horse-Spleen Ferritin

Zaydfudim, Victor (17) 195 Bennett Ave., Apt. 3C, New York 10040
Combat in the Soil: Protective Adaptations of Social Amoebae

Fieldston School

Kestenbaum, Michael Von Geldern (17) 142 W. End Ave., Apt. 19N, New York 10023
Effects of Long-Term Potentiation and Stress Related Hormones (Aldosterone and RU 28362) on the Expression of GAP-43 in Certain Brain Loci

Brooklyn Technical High School

Morales, Gisela Ivette (17) 214 Neptune Ave. 11235
Focal Adhesion Kinase (FAK): Histological Distribution and Subcellular Localization in Developing Rat Mammary Glands

Sagalovskiy, Dmitry L. (17) 6801 19th Ave., Apt. 4M 11204
Extending Classic Results for the r_2 Function

Edward R. Murrow High School

Pitt, Jessica Samara (17) 2124 Ryder St. 11234
English as a Second Language and Bilingual Education Concerning English and Narrative Language Reading Comprehension

Fort Hamilton High School

Tang, Nguyen Hien (17) 6309 Tenth Ave. 11219-5105
Water in Lower New York Bay: Is it Safe?

Brooklyn

Brooklyn

James Madison High School

Reyes, Chris David (17) 2300 Ocean Ave., Apt. 6M 11229

Deinonychus antirrhopus: Re-evaluation of the pes Inspired by Cassuarius cassuarius

Magen David Yeshiva, Celia Esses High School

Antebi, Ezra (17) 2175 E. 7th St. 11223

Nesting Patterns of Myiopsitta Monachus in Brooklyn, New York

Midwood High School at Brooklyn College

Chuang, Danny K. (17) 625 Marlborough Rd., Apt. 3F 11226

Evaluation of the Relationship Between Chromosome Aneuploidy and Erb-B2 Gene Amplification to the Stages of Human Breast Cancer Progression Using F.I.S.H. (Fluorescence in situ Hybridization)

Diamond, Lori Irene (17) 2435 Haring St. 11235

Investigation of the Role of mei2 Gene in Fission Yeast Meiosis Using Transformation of Mutants

Huynh, Rany (17) 2780 Ocean Ave. 11229

Transformation and Tumor Formation in Pancreatic Acinar Cells in vitro by the Tobacco Smoke-Specific Carcinogen NNK

Midwood High School at Brooklyn College

Hyppolite, Guibenson (18) 191 E. 31st St. 11226

Effects of the Oral Sorbent AST-120 on 7/8th Nephrectomized Uremic Rats

Lee, Jung K. (17) 6515 Ave. N 11234

Alcohol Consumption Among Adolescents: A Correlational Study Between Conformity, Peer Pressure and Underage Drinking

Ng, Carla Aparecida (18) 1463 E. 100 St. 11236

Exploring Use of Newly Developed Fixed-Charge Polymer Membranes in Ultrafiltration as Treatment for Brackish Irrigation and Drinking Waters in American Southwest

Puma, Michael Anthony (17) 2289 E. 21st St. 11229

Effects of Gender on Minimum Standards for Relationships of Varying Levels of Involvement: Test of Implications of Sexual Strategies Theory

Rips, Anna (17) 8860 19th Ave. 11214

Identification of Proteins That Interact With the Zinc Finger Domain of Erythroid Kruppel-Like Factor

Wu, Raymond (17) 791 Washington Ave. 11238

Protective Effects of ApoE Allelic Isoforms in Hypoxia Compared to Oxidative Stress

Yeshivah of Flatbush

Nemetski, Brad Scott (17) 1118 E. 9th St. 11230

Pressure Flow in Single Tube and Multi Tube Starling Resistor

Cedarhurst

Hebrew Academy of the Five Towns & Rockaway

Flug, Adam Jacob (17) 75-07 170 St., Flushing 11366

Safety Motivation Among Pre-Adolescent In-Line Skaters

Lawrence High School

Federman, Shira Danielle (18) 74 Auerbach Ln., Lawrence 11559

Reevaluating the Myth of Teenage Invulnerability: Risk Assessment Among Adolescents and Their Parents

Sanders, Jaime Allison (17) 758 Golf Dr., North Woodmere 11581

Biostimulation of Two Petroleum-Degrading Bacteria

Shevins, Samantha Eve (17) 610 Longacre Ave., Woodmere 11598

Study of the Brown Tide in Noyac Bay

Taska, Juliette Lee (17) 28 Robert Rd., Inwood 11096

Paradoxical Effect of Diet Commericals on Adolescent Dieters

Wollman, Stephen Daniel (17) 653 Park Ln. 11516

Are You Crazy? Psychological Profile of High-Risk Athletes

Commack

Commack High School

Rosa, Dominik (18) 36 Starlight Dr. 11725

TFA Bioaccumulation in Marine and Freshwater Phytoplankton

Schaffer, Michelle Anne (17) 19 Maridon Ln. 11725

Enhancement of Interfacial Adhesion via Surface Segregation in Polycarbonate/Poly (styrene-co-acrylonitrile)

Dewitt

Jamesville-Dewitt High School

Romanowski, Rianna (17) 102 Donridge Dr. 13214

Assessment of Stabilities and Energy-Releasing Capabilities of Bicyclo [2,2,2] Octamine and Its Dimer

Dix Hills

Half Hollow Hills High School East

Chang, Sidney Hsiao-Ning (17) 43 Euclid Ave. 11746-6445

High Resolution Solid State ¹⁹F MAS NMR Study of Fluorite-Type Anion Excess Solid Solution Pb_{1-x}Zr_xF₂+2_x (0 ≤ x ≤ 0.250)

Hayashi, Hamilton (18) 27 Branwood Ct. 11746

New Model for the Analysis of Transcapillary Fluid Shifts by Determination of Density of Flowing Blood After Postural Changes and in vivo Effects of Carrageenan Treatment in Rats

Scharoun, Melissa Ingrid (17) 291 Marlin St. 11746

Leaf Isoform of the Large Subunit of ADP-glucose Pyrophosphorylase from Arabidopsis thaliana

Stefano, Michelle Laufa (17) One Sleepy Ln., Melville 11747

Morphine Stimulates Nitric Oxide Release From Invertebrate Microglia Inhibiting Microglial Egress From Excised Ganglia

Flushing

Francis Lewis High School

Amirbekian, Varden (17) 159-10 Sanford Ave., Apt. 1A 11358-2551

Economic Nationalism: Friend or Foe

	Jemison, Stephen Rapheal (17) 161-29 Normal Rd., Jamaica 11432 <i>Analysis of Late Woodland and Mississippian Chronologies in the Lower Illinois River Valley Using Calibrated Radiocarbon Dates</i>
	Lee, Bong Gea (17) 81-09 41st Ave., Apt. 4D, Elmhurst 11373 <i>In Search of a New Gene(s) in the Signal Transduction Pathway in <u>Drosophila melanogaster</u></i>
	<u>Townsend Harris High School/Queens College</u> Beiner, Ofra (17) 85-27 Bell Blvd., Hollis Hills 11427 <i>Paper and Computers in Detecting Grammatical Errors in Written Texts</i>
	Chen, Wei Ya (17) 20-12 35th St., Astoria 11105-2034 <i>Opioid Receptors in Rodent Testes</i>
	Haisley, Emily Celia (17) 139 Arleigh Rd., Douglaston 11363 <i>Discovery of a Gene Regulatory System Modulated by the Ratio Carbon/Nitrogen in <u>Arabidopsis thaliana</u> Establishes a Link Between Gene Regulation in Plants and Microorganisms</i>
Forest Hills	<u>Forest Hills High School</u> Fakira, Kurt Ashad (17) 94-26 34th Rd., Apt. D7, Jackson Heights 11372 <i>Effects of Interferon on 5-Fluorouracil-Induced Perturbations in Deoxynucleotide Triphosphate Pools, DNA Double Strand Breaks, and Apoptotic Cell Death: Possible Interrelationships</i>
	Hervias, Teddy Alejandro (17) 79-13A 47th Ave., Elmhurst 11373 <i>Analysis of ZD-1694 Induced DNA Damage Using Cell Synchronization</i>
	Hsu, Sherry Xin (17) 78-02 Kneeland Ave., Elmhurst 11373 <i>Recovery of Albumin via Ionic Strength Semi-Continuous Cyclic Process: Operating Conditions and Process Schematic</i>
Fresh Meadows	<u>Saint Francis Preparatory School</u> Yee, Melissa Ann (17) 46-29 66th St., Woodside 11377 <i>Determination of mRNA Stability in Postmortem Mice Tissues Using Differential Display: Preliminary Results</i>
Hyde Park	<u>Franklin D. Roosevelt High School</u> Taylan, Justin Richard (18) 40 Shaker Lane 12538-3116 <i>Impact Craters: Can a Model Be Developed to Predict Factors That Cause Impact Craters?</i>
Islip	<u>Islip High School</u> Im, Aaron Joung Myung (17) 75 Brook St. 11751-2001 <i>Effects of Human Values and Severity and Likelihood Disciplinary Information on Ethical Decision Making in Academic Environments</i>
Jericho	<u>Jericho Senior High School</u> Kim, Andrew K. (17) 19 Maple Run Dr. 11753 <i>Effects of Theta, Function Range, and Interphase Duration on Discrimination of Direction of Visual Motion and a Test of the Line Element Model</i>

	Press, Jennifer Barrie (17) 247 Hamlet Dr. 11753 <i>Computer Vision and Its Use in Seam Detection: Eyes of the Future</i>
	Robbins, Matthew Stuart (17) 48 Carriage House Dr. 11753-2801 <i>Relationship Between Genotype and Phenotype: Three-Year Study of Genetics Utilizing a Cognitive Apprenticeship Approach</i>
Kings Park	<u>Kings Park High School</u> Kim, Esther Sun (17) 12 Mountain Laurel Ln. 11754 <i>Biological Upgrading of Lignite and Bituminous Coals</i>
La Grangeville	<u>Arlington Senior High School</u> Kim, Martina Lisa (17) 53 Walker Rd., Hopewell Junction 12533 <i>Aquatic Herbicide Effect on <u>Daphnia</u> Phototaxis</i>
Lido Beach	<u>Long Beach Senior High School</u> Bhatt, Meghana A. (16) 252 Lagoon Dr. W. 11561 <i>Nature of Symmetric Alpha Words</i>
Liverpool	<u>Liverpool High School</u> Skomoroch, Peter N. (17) 117 Harding Ave. S. 13088 <i>Is Rhodopsin Present in the Parietal Eye of the Lizard <u>Uta stansburiana</u>?</i>
Manhasset	<u>Manhasset Junior-Senior High School</u> Boyer, Michael Christopher (17) 66 Trumbull Rd. 11030 <i>Particle Formation for Americium, Cobalt, and Cesium in Ob River Water Under Conditions of Increasing Salinity</i>
	Cohen, Aaron Russell (17) 8 Madonia Ct., Plandome 11030 <i>Moral Behaviors and Motivations Then and Now: The Current Generation Gap</i>
	Kalargiros, Christos Dean (17) 834 Hunt Ln. 11030 <i>Investigation of Protonophoric and Phytomedicinal Substances and Their Effects on Membrane Systems</i>
	Lawrence, Jason William (17) 16 LaPlaca Ct. 11030 <i>Streak Camera: Novel Approach to Obtaining a 1-Dimensional View of a Sonoluminescent Bubble in Time</i>
Medford	<u>Patchogue-Medford High School</u> Lin, Jack (18) 32 Debbie Ln., Patchogue 11772-4238 <i>Induced Magneto-Optical Anisotropy of Fe304 Colloid Cells in the Determination of Magnetic Centers</i>
New City	<u>Clarkstown High School North</u> Alevy, Matthew Gary (17) 22 Sandstone Trail 10956 <i>Twenty-Nine Year Climate Analysis: Correlation Between El Niño Southern Oscillation and Precipitation in South America</i>

New Hyde Park

Herricks Senior High School

Cho, John Joon Tae (17) 33 Solar Ln., Searington 11507-1118
Effect of p53 Induction on the Efficacy of Diverse Chemotherapeutic Agents in Varying Serum Concentration Conditions Using a Tetracycline-Regulated Expression System for p53 in Human Osteosarcoma Cells: Implications for Drug Resistance

Khurana, Gauri (17) 2 Leamar Dr., Manhasset Hills 11040
Oil Polluted Marine Site: Alkan-Utilizing Bacteria in Plant Rhizospheres

Sung, Evelyn Hyun-Jung (17) 70 Lords Way 11040-1212
Integration and Alteration of SV40 DNA in Human Epithelial Cell DNA

New York

A. Philip Randolph Campus High School

Zhang, Xiaoqian (17) 720 W. 170th St., Apt. 3C 10032
SERS and UV/Vis Studies of Two Electron Reduction of Flavin Mononucleotide on Ag Electrode

The Brearley School

Vasarhelyi, Elizabeth Chai (17) 103 E. 75th St. 10021
Clearance of HIV-1 Infection in a Newborn

Chapin School

Carty, Shannon Ann (18) 108 E. 86th St. 10028
Influence of Interferon Treatment on the Efficiency of DNA Repair of Methyl Methane-Induced Damages in Mice Lymphocytes

Hunter College High School

Einbond, Aaron Michael (17) 822 W. 187th St. 10033
New Proline-Rich Protein-Binding Motif and Prediction of Its Signaling Role in Muscular Dystrophy and Other Genetic Disorders

La Guardia High School of Music and Art

Zhang, Flora Fan (18) 94-11 34th Rd., Apt. 2C, Jackson Heights 11372
Do Conceptual Properties of Words Affect Gesturing?

Stuyvesant High School

Adler, Benny (17) 225 W. 83rd St. 10024
Effects of Interleukin-2 and Interleukin-12 on Peripheral Blood Derived Stem Cells in vitro

Christian, Cecil Franklin (16) 158-16 59th Ave., Flushing 11365
Effects of UV, Dissolved Organic Matter, and Transient Oxidants on Phytoplankton

Davidson, Preeti Rachel (17) 70 Haven Ave., Apt. 3G 10032
Quantitation of Deleted Forms of Mitochondrial DNA in Somatic Cells During the Life Span of Drosophila melanogaster: Implications of Accumulation in Aging

Ghesquiere, Angela Rosabelle (17) 146 Greene St. 10021
White Point: An Ethnographic Study of Societal Change in Small Canadian Fishing Village

Gilles, Erica Jo (17) 175 Garfield Pl., Brooklyn 11215
Expression of Emotions and Their Causes in American Sign Language

Greenberger, Irene (17) 64-30 251 St., Little Neck 11362
Disturbed Eating Attitudes and Polarity in Areas of Talent Among Adolescent Sisters

Haggerty, Bruce Mizrahi (18) 205 E. 69th St. 10021
Episodes of Flood-Basalt Volcanism Defined by 40Ar/39Ar Age Distributions: Correlation With Mass Extinctions?

Lamming, Dudley William (16) 1658 Bayridge Pkwy., Brooklyn 11204
Apoptosis in LR73 Cells is Inhibited by Overexpression of the Multidrug Resistance (MDR) Protein

Lee, Salvia (17) 199-27 24th Rd., Whitestone 11357
An Objective Evaluation of the Utility of Flake Analysis of Archeological Sites

Ling, Tony (17) 61 Mott St., Apt. 2 10013-4864
Interaction of V1/V2 and V3 Domains of HIV-1 Envelope Glycoprotein gp120: Implications of Viral Neutralization by Antibodies Directed to the V1/V2 Domains

Lu, Jennifer (17) 992 Coney Island Ave., Brooklyn 11230
Detection of p53 Tumor-Suppressor Gene Mutations in Colorectal Cancer Using the Non-Isotopic RNase Cleavage Assay (NIRCA)

Luo, Ting (17) 41-26 66th St., Woodside 11377
Identification and Characterization of a Novel Human General Transcription Factor: Implications in Gene Expression Regulation, Transcription-Translation Linkage, Host Cell-Virus Communication, and Programmed Cell Death

Meed, Jessica Tsesha (17) 531 Main St. 10044
Television Violence Through the Eyes of Adolescents: Effect of Contextual Intervention on Adolescents' Perception of Violence

Mizrahi, Ramit (16) 1438 Third Ave., Apt. 30D 10028
Effects of Task and Form on Recognition Memory for Words and Pictures

Moy, Richard Lup-Duc (17) 9 Monroe St., Apt. 15 10002
Co-Factors in HIV Syncytia Formation

Park, James (17) 47-03 47th St., Woodside 11377
New Clinical Treatment for Burn Patients: Effects of Heat Shock Protein Supernatant (Hsp) on Skin Cell Recovery and Proliferation

Ramin, Joel Gabriel (17) 12 W. 96th St., Apt. 4D 10025
Levels of Symbolic Play in Abused Children

Robins, Benjamin A. (17) 240-38 42nd Ave. 11363
Effects of Diesel Exhaust Pollution on the Pulmonary Function of Urban Minority Adolescents

Shao, Theresa (17) 72-43 51st Dr. 11377
Effect of Recessive Lethal Mutation 1544 on nod^{DTW} , a Mutant Allele of a Kinesin-Like Gene Involved in Drosophila melanogaster Female Meiosis

Turner, Maureen Emma (17) 319 E. 24th St. 10010
Efficacy of an Adopt-A-Space Program as a Solution to Workplace Dissatisfaction

	Vadi, Vasisht Mantra (16) 511 E. 80th St., Apt. 14B 10021 <i>Substructure of Leptons, Quarks and Guage Bosons: Leading to Grand Unification</i>
	Vydrug-Vlasenko, Zoya (18) 182 Bennett Ave., Apt. 6K 10040 <i>Single and Packed Ice Floe Draft Due to Wave Motion and Collisions of Ice Floes</i>
	Wong, Aaron (17) 75-20 175th St., Fresh Meadows 11366 <i>Anterior Development of the <u>Drosophila</u> Embryo in the Absence of the Morphogen Hunchback</i>
	Wu, Ying (18) 960 E. 18th St., Brooklyn 11230 <i>Sonochemical Degradation of Cu-Pc in Aqueous Solution</i>
	Yiu, Glenn Chung-Wing (16) 265 Dahill Rd., Brooklyn 11218 <i>Identification of Desensitization Mutant, <u>asil</u>, in the ABA Signal Transduction Pathway</i>
	Yuan, Ru Hua (17) 8636 16th Ave., Brooklyn 11214 <i>New Technology in the Production of Dry Beans and Potatoes</i>
	Zheng, Chun Hua (17) 92 Winthrop Pl., Staten Island 10314-4526 <i>Effect of Glass Surface Treatment on the Interfacial Bond Strength of "Glasscrete"</i>
Northport	<u>Northport Senior High School</u> Lau, Raymond Gan-Yen (17) 8 Casey Ln., East Northport 11731 <i>Neutrophil Mediated Degradation of Extracellular Matrix and Its Inhibition via Aqueous Extracts of Smokeless Tobacco and Chinese Herbs</i>
Port Washington	<u>Paul Schreiber Senior High School</u> Birch, Ashley Ann (17) 28 Guilford Rd. 11050 <i>Optimal Growth Conditions and Identification of PAH-Degrading Bacteria</i>
	Giordano, Jason Kevin (17) 1 Jeanette Dr. 11050 <i>An X-ray Diffraction Investigation of the Instability Trends in Main Peak Intensity and Correlation Length in Water</i>
	Kawatra, Sandhya P. (17) Hilldale Ln., Sands Point 11050 <i>Two-Link Kinetic Model of the Human Arm</i>
	Longiaru, Saeen Chay (17) 20 Pepperday Ave. 11050-2413 <i>Elucidation of Structural Properties of Organic Monolayers by Infrared Spectroscopy</i>
	Solomon, Mark Benjamin (17) 28 Essex Ct. 11050 <i>Differential Sensitivity of P-Glycoprotein, the Multidrug Resistance Mediator, to the Modulators PSC-833 and Cremophor EL in Normal Leukocytes vs. Leukemic Hematopoietic Cells</i>
Setauket	<u>Ward Melville High School</u> Ben-Aviv, David Ari (17) 45 Manchester Ln., Stony Brook 11790-2823 <i>In Search of a General Purpose Learner: Individual Differences in Strategic Memory Behavior</i>
	Petersen, Carl Richard (17) One Nob Hill Ct., East Setauket 11733 <i>Growth of Ultrathin Body-Centered Cubic Cobalt Films on Atomically Clean Iron {001} Crystal Substrate</i>

	Pollina, Elizabeth (17) 21 Brookfiled Ln., South Setauket 11720 <i>Design and Synthesis of RGD Mimetics as Potent Inhibitors of Platelet Aggregation</i>
	Willa, Kerri Beth (17) 34 Cedar Ln., East Setauket 11733 <i>Dual Regulation of Positive Phototaxis in <u>Euglena gracillis</u></i>
	Wittie, Loren Deidre (17) 7 Woodhull Rd., East Setauket 11733 <i>Genetic Differentiation of Dwarf Pines in the Long Island Pine Barrens: Experimental Test</i>
Staten Island	<u>Curtis High School</u> Knight, Jason Anthony (17) 221 Van Duzer St. 10301 <i>Survival of the Fittest vs. Population Control</i>
	<u>Staten Island Technical High School</u> Dombrosky, Lauren Emma (17) 1225 Arden Ave. 10312 <i>Adolescent Attitudes on Sexual Behavior as Function of Religiosity and Morality</i>
	Wallach, Gannon Forrester (17) 868 Sheldon Ave. 10309 <i>Preservation of Decapod Natural History Collections: Investigation of a Destructive Precipitate With a Model Describing its Formation</i>

NORTH CAROLINA

Durham	<u>North Carolina School of Science & Math</u> Whangbo, Albert Jun (16) 3731 Swift Dr., Raleigh 27606 <i>Effects of Dissolved Salts on the Photocatalytic Degradation of Methylene Blue and Destruction of Bentazon Using Heterogeneous Photocatalysis</i>
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NORTH DAKOTA

Jamestown	<u>Jamestown High School</u> Ramsey, Douglas Edward (17) 1702 Second Pl., N.E. 58401 <i>Effects of <u>Serratia marcescens</u> Infection of <u>Manduca sexta</u> Larvae: Two-Year Study</i>
Larimore	<u>Larimore High School</u> Haugen, Clifford Peter (17) R.R. 1, Box 28, Arvilla 58214 <i>Ecological Parameters for Native Prairie: Restoration, Establishment, and Maintenance</i>

OHIO

Akron	<u>Saints Vincent & Mary High School</u> Timura, Catherine Ann (17) 4832 Encino Dr. 44319 <i>Effect of Environmental Mercury on Euglena</i>
Barnesville	<u>Barnesville High School</u> Doudna, Carmen Maria (17) 59071 Wright Rd. 43713 <i>Environmental Aspects of Acid Mine Drainage on Aquatic Ecosystems</i>

Cleveland Heights Beaumont School
Spellacy, Kristen Marie (17) 1733 Mayfair Blvd., Mayfield Heights 44124-3113
Sobering Study of Stunted Growth: Effects of Alcohol and Tobacco on the Regeneration of Planaria (Dugesia tigrina)

Dayton Chaminade-Julienne High School
Frank, Nadja Katherine (17) 4505 Rean Meadow Dr., Kettering 45440
Viscosities of Variations of Electroheological and Magnetorheological Fluids

Hannibal River High School
Moore, Amy Michelle (17) 47137 S.R. 556, Beallsville 43716
Analytical Study of the Cumulative Effects of Acidic Precipitation: Four-Year Study

Upper Arlington Upper Arlington High School
Stover, Elizabeth Harmon (17) 2140 Lane Rd. 43220-3012
The wts Genes of Erwinia stewartii, a Bacterial Pathogen of Corn

OREGON

Portland Oregon Episcopal School
Foster, Lorissa Chieko (18) 4250 S.W. Dosch Rd. 97201
Optimal Methods for Quantifying Mitral Regurgitation Using the Flow Convergence Methods in Prolapsed Mitral Valves: An in vitro Study

PENNSYLVANIA

Connellsville Connellsville Area Senior High School
Miller, Bethany Jade (17) Box 57-A, White 15490
Acid Mine Drainage: Cause, Effects, and Possible Solutions

Philadelphia Central High School
Au, Karen Mae (18) 316 E. Gale St. 19120
Effects of Sulfuric Acid, the Main Component of Acid Deposition, on Nodulation and Nitrogen Fixation: Two-Year Study

RHODE ISLAND

Providence Classical High School
Subotnik, Joseph Eli (17) 264 Fourth St. 02906
Synthesis and Characterization of Gadolinium-Hematoporphyrin for Use in Neutron Capture Therapy and Magnetic Resonance Imaging

Warwick Bishop Hendricken High School
Garrahan, William David (17) 728 Cooper Hill Rd., Glocester 02814-1441
Reassessment of Fertility in Interspecific Hybrids of Antheraea (Lepidoptera: Saturniidae), With Reference to A. peryi and A. mylitta

SOUTH CAROLINA

Spartanburg Spartanburg High School
Campbell, Andrew Cottrill (17) 126 Greengate Ln. 29307-2215
Sampling the Whole: Ecologic and Biostratigraphic Comparison of Duplin and Raysor Molluscan Faunas (Pliocene Epoch, South Carolina, U.S.A.)

TEXAS

Austin Lyndon B. Johnson High School
Early, Edward Fielding (18) P.O. Box 27306 78755
Classification of all Quartic Polynomials With Integral Coefficients Possessing Three Relative Extrema and Two Points of Inflection at Lattice Points

Carrollton Newman Smith High School
Gordon, Samuel Louis (17) 3216 Delaford 75007
Inexpensive Atomic Absorption Spectrophotometry

Denton Texas Academy of Math & Science
Childs, Andrew MacGregor (18) 2620 Polo Ln., Plano 75093
Computational Modeling Techniques for the Design of an Electrostatic Quadrupole Lens Triplet

Fort Worth Dunbar High School
Talati, Mihir Umesh (17) 7432 Tallow Wind Trail, Fort Worth 76133
Effect of Meditation on Salivary Immunoglobulin A

Houston Kinkaid School
Rodgers, Jocelyn Michelle (17) 8011 Meadowcroft 77063
Characteristics of Potassium Permanganate's Oxidation-Reduction Reactions

Katy James E. Taylor High School
Schaudt, Jennifer Michelle (17) 21602 Park York 77540
Morbidity and Mortality: Investigation Into the Sea Turtle Strandings in the Gulf of Mexico: Two-Year Study

San Antonio Douglas MacArthur High School
Tran, Phung Kim (18) 4846 Casa Corona St. 78233
Medicinal Properties in Herbs: Three-Year Study

Sinton Sinton High School
Yoakum, Matthew Dylan (18) P.O. Box 10650, Corpus Christi 78460
Corollary of Electro-Magnetic Waves Towards Development of Rhizopus Cultures

Smithville Smithville High School
Budunov, Gregory M. (17) 1104 N.E. 9th St., Apt. 106 78957
New Mechanism of Inhibition of Cell Proliferation by the Anti-Cancer Drug Tamoxifen

Spring	<u>Klein Oak High School</u> Bonetati, Anthony Alexander (17) 17319 Loring Ln. 77388 <i>Determination of Placenta Types in Monozygotic and Dizygotic Twins Based Upon Their Dermatoglyphic Patterns</i>
VIRGINIA	
Alexandria	<u>Thomas Edison High School</u> Sayah, Anousheh (16) 6124 Valley View Dr. 22310 <i>Search for Homologous Genes in <u>Arabidopsis thaliana</u> and <u>Brassica rapa</u> Plants Involved in the "Triple Response to Ethylene Exposure"</i>
	<u>Thomas Jefferson High School for Science & Technology</u> Amar, Robert Anthony (17) 3712 Roxbury Ln. 22309 <i>Tautomeric and Structural Effects on the Kinetics of Malonic Acid Bromination</i>
	Fujito, Brian Tomokazu (17) 1217 Delta Glen Ct., Vienna 22182 <i>Adsorption-Elution of Viruses Through Ionic and Nonionic Interactions</i>
	Kuo, Paulina Susan (17) 1217 Forestville Dr., Great Falls 22066 <i>Cylinder Pressure in a Spark-Ignition Engine: A Computation Model</i>
	Liu, Jesse Kueyu (17) 2400 Cedar Ln., Vienna 22180 <i>A Gene for the 9 kDa Subunit of the Signal Recognition Particle Resides on Human Chromosome 1</i>
	Paik, Paul Kang Hoon (17) 5145 Bradfield Dr., Annandale 22003 <i>Serodiagnosis of Efficacies of Choloramphenicol and Doxycycline in Mice Infected With the Karp Strain of <u>Rickettsia tsutsugamushi</u></i>
	Wegener, Kevin Philip (17) 6837 Camus Pl., Springfield 22152-3112 <i>Two Types of Fiber Optic Acoustic Sensors: Interferometric-Based and Intensity-Based</i>
	<u>Williams High School</u> Bray, David Alec (18) 1317 Juliana Pl. 22304 <i>Forest Fire Flame Front Forecaster f⁵</i>
Arlington	<u>Yorktown High School</u> Green, Brian Michael (17) 4324 N. 31st St. 22207 <i>Green Gold From Leaf Mold: A Natural Pest Retardant</i>
Gloucester	<u>Gloucester High School</u> Moore, Alan Palmer (17) 4819 Rosewell Dr. 23061 <i>Can Impacts From Chronic Pollution Be Reduced? Effects of Carbonaceous Amendments on the Teratogenicity of Creosote Contaminated Sediments to <u>Fundulus Heteroclitus</u> (L.)</i>
Hot Springs	<u>Bath County High School</u> Roach, Jessica Anne (17) HC-1 Box 145, Monterey 24465 <i>Spring Melts as Causal Factors in the Variation of Firn-pack Stratigraphy on the Juneau Icefield: 1995</i>

Roanoke	<u>Cave Spring High School</u> Jain, Maneesh Rajiv (17) 5848 Old Locke Ct. 24018 <i>Amerlioration of Cytotoxic Effect of MPTP, a Model Used for Parkinson's Disease, by Antioxidant Vitamins in Human Neuroblastoma Cells in Culture</i>
	<u>Northside High School</u> Wood, Seth Morgan (18) 6511 Garman Dr. 24019 <i>A Higher Place: Relationship Between Biomechanical Factors and Running Efficiency</i>
Sperryville	<u>Rappahannock County High School</u> Clark IV, James Stevenson (18) 219 Tiger Valley Rd., Washington 22747 <i>New Simulated Annealing and Genetic Algorithms for Solving the Traveling Salesman Problem Using the ROMIC Heuristic</i>
Springfield	<u>West Springfield High School</u> Slimak, Katherin Marie (17) 9207 Shotgun Ct. 22153 <i>Avoidance Behavior and Cholinesterase Activity in Organisms Exposed to Pesticides in Air and Soil Media</i>
WASHINGTON	
Centralia	<u>Centralia High School</u> Ashley, Christopher Redell (18) 385 Proffitt Rd. 98931 <i>Comparison of Alpha Emitting Nuclides in Coal and Coal Combustion Products</i>
WEST VIRGINIA	
Franklin	<u>Franklin High School</u> Bates, Naomi Sue (18) P.O. Box 555 26807 <i>Neutral Hydrogen (HI) in the Milky Way</i>
Parkersburg	<u>Parkersburg South High School</u> Welcker, Bonnie Cedar (17) Rte. 3, Box 488-A 26101 <i>Molluscicidal Efficacy of Mucosal Irritants on <u>Dreissena polymorpha</u> and <u>Corbicula fluminea</u></i>
WISCONSIN	
Glendale	<u>Nicolet High School</u> Fine, Matthew Jason (17) 8866 N. Lake Dr., Bayside 53217 <i>Properties, Production and Application of Inverse Bubbles</i>
WYOMING	
Laramie	<u>Laramie High School</u> Jiao, Yang (18) 1704 Palmer 82070 <i>Water Fluctuation on Hot Surface</i>
	Tung, Shue-Fen (17) 1472 N. 22nd St. 82070 <i>Inhibitory Effects of Herb Tinctures on Isolated Bacteria</i>