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KANSAS: Ms. Virleen Bailey, Research Assistant, Dept. of Entomology, Waters Hall, Kansas State University, Manhattan, KS 66506

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MARYLAND: Ms. Mary B. Hyman and Ms. Nancy J. Leyko, Maryland Science Center, 601 Light Street, Baltimore, MD 21230

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MISSISSIPPI: Donald R. Cotten, Professor of Science Education, University of Southern Mississippi, P.O. Box 8414, Southern Station, Hattiesburg, MS 39406

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NEW MEXICO: Dr. David K. Shortess, Professor of Biology, New Mexico Tech, Box 3732, Campus Station, Socorro, NM 87801

NORTH CAROLINA: Dr. Charles F. Lytle, Biological Sciences, Box 7611, North Carolina State University, Raleigh, NC 27695

OHIO: Mr. Lynn Edward Elfner, Executive Officer, The Ohio Academy of Science, 445 King Avenue, Columbus, OH 43201

OKLAHOMA: Mr. Jim Pigg, Director, Oklahoma State STS, 401 Rock Place, Moore, OK 73160

OREGON: Dr. Jan Paul Dabrowski, Director, Science Programs Department, Oregon Museum of Science and Industry, 4015 S.W. Canyon Road, Portland, OR 97221

PENNSYLVANIA: Dr. Bruce D. Martin, Associate Vice President for Academic Affairs, Duquesne University, 502 Administration Building, Pittsburgh, PA 15282-0205

TEXAS: Dr. William L. Perry, Associate Dean for Academic Affairs, College of Science, Texas A&M University, College Station, TX 77843-3257

UTAH: Mr. R. LaMar Allred, Utah State Office of Education, 250 East 500 South, Salt Lake City, UT 84111

VIRGINIA: Ms. Tish McKinstry, 11671 Gilman Lane, Herndon, VA 22070-2420

WASHINGTON: M. Jay Haney, Public Information Specialist, Westinghouse Hanford Company, Box 1970, Mailstop B3-35, Richland, WA 99352

WEST VIRGINIA: Dr. Joseph F. Glencoe, Jr., Professor of Biology, West Virginia Wesleyan College, Box 31, Buckhannon, WV 26201

WISCONSIN: Dr. Dean P. Nelson, Professor of Chemistry, University of Wisconsin, P-458, Eau Claire, WI 54702

WYOMING: (See Colorado-Wyoming)

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1990 Honors Group

The achieving of Honors in the 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 this Honors List is distributed to all universities and colleges in the United States. Each of those winning honors 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 117 females and 186 males.

From this group of 303 Honors, 40 students are chosen as Winners of the Washington trip (March 1-5, 1990) where \$140,000 in scholarships will be announced. The trip Winners are announced simultaneously with the distribution of this list and their names will be published in SCIENCE NEWS of January 27, 1990. A copy will be sent upon request.

(H.S. city in left column; age follows name; home address follows name of H.S. with home city omitted if same as H.S. city)

ALABAMA

Birmingham	Lin, Chi-Chang David 17 Resource Learning Center <u>2044 Shebia Dr. 35216</u> Structural Study of 4'-Deoxy-4'-Thiothymidine
Huntsville	Bhullar, Amanpreet Singh 17 Grissom H.S. <u>9610 Waldrop Dr. 35803</u> Using a Laser to Determine Bacterial Cell Size
Montgomery	Matherne, Jason Paul 18 Sidney Lanier H.S. <u>3703 Carriage Pl. 36116</u> Strumming and Drag Effects Exerted on Towed Cables Vasanawala, Shreyas Shreenivas 17 Sidney Lanier H.S. <u>501 Paddock Lane 36109</u> Investigation of Strain-Hardening in Electrorheological Fluids

ARIZONA

Chandler	Biewer, Theodore Mathias 17 Chandler H.S. <u>274 N. Fresno St. 85225</u> Epoxy Coating of Tungsten Tips for Use in Scanning Tunneling Microscopy
Phoenix	Peskind, Ty Justin 17 Camelback H.S. <u>4302 N. 28 St. 85016</u> Inhibiting Resistance to 2,4-Dichlorophenoxyacetic Acid in Bacteria (<i>Pseudomonas putida</i>) Through Recombinant DNA Techniques

CALIFORNIA

Alhambra	Han, Holly 17 Alhambra H.S. <u>495 Grandeza St., Monterey Park 91754</u> Synthesis, Isolation, and Characterization of a Water-Soluble Fluorescent Chromophore Related to Lipofuscin Pigment
Beverly Hills	Liu, Mingsun 18 Beverly Hills H.S. <u>233 1/2 Spalding Dr. 90212</u> Artificial Life: A New Approach to r- and K-Selection Theory
Claremont	Lunde, Christopher Shawn 17 Claremont H.S. <u>890 Hood Dr. 91711</u> Experimental Study of Chaos in the Belousov-Zhabotinskii Reaction
Clovis	Brahma, Charanjit 16 Clovis H.S. <u>1365 Shirley Ave. 93612</u> Behavior of Montmorillonitic Soils

Downey	Chen, Linda Ya-Lin 17 Downey H.S. <u>9273 Otto St. 90240</u> Nucleotide Sequence of the cDNA Encoding the Complete Urotensin II Prohormone From the Goby, <i>Gillichthys mirabilis</i>
Encinitas	Politzer, Benjamin Eric 17 San Dieguito H.S. <u>2125 Redgap Ct. 92024</u> Biological Effects of Extremely Low Frequency Magnetic Fields on <i>Escherichia coli</i>
Fresno	Kim, Tae Hoon 18 Bullard H.S. <u>30 W. Shaw 110, Clovis 93612</u> Expression of Salt Tolerance Genes in <i>Vibrio costicola</i>
Irvine	Ryder, Jennifer Lynn 17 Edison H.S. <u>5517 E. Butler 93727</u> Optimizing Rotational Gel Electrophoretic Separations of DNA
Laguna Hills	Yang, Samuel 17 University H.S. <u>18801 Tabor Dr. 92715</u> Effects of Vitamins C and E on Blood Coagulation <i>in vitro</i>
Long Beach	Vu, Dung My 18 Laguna Hills H.S. <u>24811 Rittenhouse Cir. 92653</u> Investigating Potential Carcinogenicity of Butylated Hydroxyanisole and Butylated Hydroxytoluene
Modesto	Book, Lewis Daniel 17 Long Beach Polytechnic H.S. <u>3530 Clover Cir., Seal Beach 90740</u> Effects of Tricine Buffers on Extraction of Zinc Metalloproteins From <i>Artemia</i>
Riverside	Sample, Stephen Andrew 18 Thomas Downey H.S. <u>1305 Nelson Ave. 95350</u> Predicted Light Curves for Primordial Schwarzschild Black Holes Vis-a-Vis Hawking Radiation: Suggestions for Observation and Recognition
Rolling Hills	Liu, David Ruchien 16 Poly H.S. <u>1345 Iverson Pl. 92506</u> Effects of Neural Density on Visual Processing: Support for a Neural Network Model by Human Experiment
Salinas	Peng, Royce Yung-Tze 17 Rolling Hills H.S. <u>5315 Valley View Rd., Rancho Palos Verdes 90274</u> Matching Two Curves by Transformation of Two Piecewise Developable Surfaces
San Diego	Bari, Ausaf Ahmad 17 Salinas H.S. <u>18610 Ranchito Del Rio Dr. 93908</u> <i>In vitro</i> Screening for Resistance in Lettuce to Lettuce Root Aphid <i>Pemphigus bursarius</i> (L.)
San Marino	Huynh, Huyen B. 16 Academy of Our Lady of Peace <u>2660 Ridge View Dr. 92105</u> Induction of Leukemia Cell Differentiation <i>in vitro</i>
Stockton	Dea, Melvin Kaivon 17 San Marino H.S. <u>1155 Sherwood Rd. 91108</u> High-Sensitivity Differential Scanning Calorimetry Study on the Effect of Chlorpromazine on Multilamellar Dispersions of Dipalmitoylphosphatidylcholine
Willits	Aguiar, Ann Marie 17 Amos Alonzo Stagg H.S. <u>1810 Bristol 95204</u> Tag DNA Polymerase: Optimum Conditions for the <i>in vitro</i> Enzymatic Synthesis of DNA From Self-Complementary Oligonucleotide Precursors
	Matheson, Angus Duncan 18 Willits H.S. <u>20750 Locust St. 95490</u> Effects of Metronidazole on Termites

COLORADO

Boulder	Chang, Stephen Chuan-Teh 16 Boulder H.S. <u>775 Linden Ave. 80304</u> Blackbody Radiation
Brush	Larson, Kristin Ann 17 Boulder H.S. <u>2 Hawk Ln. 80304</u> Spiking Mode in a Free Electron Laser Computer Simulation
Montrose	Carlson, Kevin Roy 17 Brush H.S. <u>308 Applewood St. 80723</u> Factors Which Cause Ozone Depletion: Two-Year Study Koverman, Tamara Lee 17 Montrose H.S. <u>61048 Meadow Lark Lane 81401</u> Environmental Pollutants in the Colorado Watershed

CONNECTICUT

Fairfield	Bernold, Justin Yale 17 Fairfield H.S. <u>171 Lookout Dr. 06432</u> Impedance Modeling of the Mark 15 UBA Using Forced Oscillations
Glastonbury	Cogswell III, Lawrence Perley 17 Glastonbury H.S. <u>597 Neipsic Rd. 06033</u> Dissolution of Aluminum by a Canned Beverage

DISTRICT OF COLUMBIA

Washington	Hannallah, David 17 Georgetown Day School <u>5732 Bradley Blvd., Bethesda, MD 20814</u> Cloning of HTLV-I Transcriptional Regulatory Sequences Generated by the PCR
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FLORIDA

Daytona Beach	Currin, Julia Lynn 17 Mainland Sr. H.S. <u>833 N. Peninsula Dr. 32118</u> Analysis of the Correlation Between Hydrogeologic Characteristics and Sinkhole Development
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- Melbourne Kabaservice, Theodore Lyle 17 Melbourne H.S. 615 Dundee Cir., West Melbourne 32904 Enzymatic Hydrolysis to Reduce the Concentration of Organic Contaminants in Wastewater
- Panama City Phan, Tam Chanh 17 Bay H.S. 7104 Big Daddy Dr., #F-1, Panama City Beach 32407 Effectiveness of the Slope-Valley Seawall
- Pompano Patel, Tina Sonal 17 Ely H.S. 2971 NW 106 Ave., Coral Springs 33065 Soil Stabilization Through the Use of Waste By-Products
- St. Petersburg Ly, Danith 17 St. Petersburg H.S. 2434 9th Ave. N 33713 Modeling Ion-Molecule Reaction Linking to Ozone Depletion in an Ion Trap Mass Spectrometer

GEORGIA

- Brunswick Fleming, Alexander Jacques 18 Glynn Academy H.S. 260 Alabama St., St. Simons Island 31522 On the Wings of a Dragonfly: A Synergistic Effect in Lift for Aircraft Phase II When $1+1=2$ 1/2
- Statesboro Hashmi, Saira Furyal 17 Statesboro H.S. 107 Wilton Dr. 30458 Spermatogenesis and Chromosomes of the Lone-Star Tick, *Amblyomma americanum* (Acari: Ixodidae)

HAWAII

- Wailuku Iwasaka, Ryan Mamoru 17 Henry Perrine Baldwin H.S. 434 Liholiho St. 96793 Functional Response of *Zeteticontus utilis* to Varying Densities of *Carpophilus humeralis*

ILLINOIS

- Aurora Bhattacharyya, Timothy 17 Illinois Mathematics and Science Academy 1141 Colorado Ave. 60506 DNase Activity Within Liposomes: Looking for a Natural Acceleration of Chemical Reactions
- Chicago Block, Jonathan Robert 18 Lincoln Park H.S. 451 W. Aldine Ave. 60657 Effects of Membrane Density and Solution Viscosity on the Reaction Between Rhodopsin and Transducin in Rod Cells
- Headrick, Matthew Peter 16 University of Chicago Laboratory Schools H.S. 5483 Hyde Park Blvd. 60615 Discovery and Characterization of a Gene Essential for Nitrogen Fixation in the Cyanobacterium *Anabaena* spp. PCC 7120
- Lee, Jennifer Jung Wuk 16 University of Chicago Laboratory Schools H.S. 5510 S. Kimbark Ave. 60637 Mutagenesis of the Translation/Initiation Signals of Bacteriophage P2 for Overexpression in *E. coli*
- Yao, Joey Cruz 17 University of Chicago Laboratory Schools H.S. 6166 N. Sheridan Rd. #6K 60660 Culture in Tyrosine-Free Medium Supports Growth of Differentiated, in Preference to Undifferentiated, Melanoma Cells
- Downers Grove Crawford, Clare Gillian 16 North H.S. 2050 Prairie Ave. 60515 Acoustic Impedance of Electrorheological Fluids
- Quincy Schleppenbach, David Armas 17 Quincy Notre Dame H.S. 6 Shady Acres 62301 Comparison of Benthic Organisms in Old and New Wing Dams: Density and Diversity
- Skokie Sattar, Husian Abdul 17 Niles North H.S. 6415 Hoffman Terrace, Morton Grove 60053 Transcriptional Regulatory Sequences of the Human Heat Shock Promoter
- Wheaton Nehrlich, Eric Cho 15 Wheaton Central H.S. 903 South Hale St. 60187 Incident Radiation Location by a Two-Dimensional Readout of a Scintillator

INDIANA

- West Lafayette Sun, Edna E. 17 West Lafayette H.S. 2624 Henderson Ave. 47906 Mechanism of Retinoic Acid as a Differentiating and Chemopreventing Agent

KANSAS

- Coffeyville Uy, Nathan Wilson 17 Field Kindley Memorial H.S. 101 Tyler 67337 Combination Chemotherapy With Taumustine and 5-Fluorouracil/FdUrd on a Human Colon Cancer Cell Line

KENTUCKY

- Louisville Nagarajan, Ram 17 Ballard H.S. 7504 Maria Ave. 40222 Enzymatic Saccharification of Agricultural By-Products

MARYLAND

- Baltimore Krishnan, Rajesh 17 Friends School 1 Dakin Ct. 21234 Quantitative Analysis of 3-H (3,3-Dimethyl-2-Butoxy)-Methylphosphorylfluoride in Rat Brain by Enhancement of Autoradiographs
- Sagafi-Nejad, Jahan Crawford Reza 18 Friends School 112 Enfield Rd. 21212-3328 Use of Laser Doppler Velocimetry to Measure Respiratory Flow
- Bethesda De Luca, Nicholas Paolo 18 Walt Whitman H.S. 8100 Hampden Ln. 20814 Preterminal Viscosity Apparatus
- Burtonsville Lynn, Heather Diane 17 Paint Branch H.S. 1902 Alabaster Dr., Silver Spring 20904 Magnetostriction of $(Tb_{0.8}Dy_{1-x})_{80}Gd_{20}$ Single Crystal Samples
- Columbia Baker, Matthew Howard 16 Oakland Mills H.S. 9499 Angelina Cir. 21045 Analysis of the Series Sum From One to Infinity of P
- Frederick Malin, Sacha Alexis 16 Frederick H.S. 1304 Arnoldstown Rd., Burkittsville 21718 Structure and Biological Activity of a Human Oncogene From Nasopharyngeal Carcinoma
- Gaithersburg Newbury, Jennifer Alice 17 Quince Orchard H.S. 16532 Sioux Lane 20878 Fractals: A New Measurement for Sunspots
- Greenbelt Wang, Jean Sandy 17 Eleanor Roosevelt H.S. 4411 West Caroline Ave., Beltsville 20705 Mechanism of Preventing Browning in Apple Tissue
- Potomac Johnson, Olivia Natalie 17 Winston Churchill H.S. 7938 Inverness Ridge Rd. 20854 Adaptive and Genetic Engineering Research on Improving the Tropical Winged Bean
- Rockville Golding, Amit 17 Charles E. Smith Jewish Day School 14321 Woodcrest Dr. 20853 Identification of a Second Repressor of the *E. coli* Gal Operon
- Silver Spring Agrawala, Maneech 17 Montgomery Blair H.S. 14408 Sturtevant Rd. 20904 Protein Modeling: Calculating Intermolecular Potentials for Peptide Chains and Amino Acids
- Fischman, Joshua Bailey 17 Montgomery Blair H.S. 6908 Millwood Rd., Bethesda 20817 p-adic Continued Fractions

MASSACHUSETTS

- Braintree Boyle, Karen Elizabeth 17 Braintree H.S. 557 Union St. 02184 Environmental Health Study of East Braintree, Massachusetts
- Falmouth Dmochowski, Ivan Julian 16 Falmouth H.S. 25 Place Rd. 02540 Determining the Effect of Physical and Chemical Variables on the Respiration Rate of *Saccharomyces cerevisiae*
- Framingham Cheng, Corey 17 Framingham North H.S. 10 Lavelle Ln. 01701 Derivation of the Pythagorean Theorem: Simple Harmonic Motion and Pythagorean Triples Revisited
- Lexington Chuang, Weihaw 17 Lexington H.S. 22 Locke Ln. 02173 Advancing Upper Surface Blown Technology
- Menzin, Eleanor Ruth 17 Lexington H.S. 26 Mason St. 02173 Predicting Chemical Properties of Alcohols From Graph Theoretical Methods
- Ramnath, Venkatesh Rudrapatna 17 Lexington H.S. 12 Fessenden Way 02173 Lactose Intolerance: A Proposed Solution Using Microorganisms
- North Easton Mailander, Sarah Ann 17 Oliver Ames H.S. 211 1/2 Main St. 02356 Effect of Varying Amounts of Sleep on Eye-Hand and Eye-Foot Reaction Time

MICHIGAN

- Berkley Yurewicz, Kerry Lynne 17 Berkley H.S. 10084 Borgman, Huntington Woods 48070 Effect of Environmental Acidification on Offspring Viability of Mutant *Drosophila melanogaster*
- East Lansing Chung, Eugene Ho-Joon 17 East Lansing H.S. 6126 Horizon Dr. 48823 Isolation and Preliminary Characterization of an OMP F Point Mutant From *Escherichia coli* K-12
- Washington Rohde, Mitchell Max 18 Eisenhower H.S. 54641 Arrowhead, Utica 48087 Optimal Design of an Electromagnetic Induction Projectile Launcher

MINNESOTA

- Minneapolis Andresen, Joshua Michael 18 Breck H.S. 12900 Overlook Rd., Dayton 55327 Relationship Between Metastatic Potential and Cyclic AMP Production Capability in K1735 Murine Melanoma Cells
- New Ulm Holm, Heather Angela 17 New Ulm Sr. H.S. RR 4 Box 15-1 56073 Effects of Increased Carbon Dioxide Concentrations on Plant Growth
- St. Paul Tavernier, Heather Lynne 18 Mounds View H.S. 1651 W. County Rd. F 55112 Dichloroethane and Trichloroethylene as Potential Mutagens

MISSOURI

- Ballwin Wiggins, Rebecca Penelope 17 Parkway West H.S. 1390 Mason Rd., St. Louis 63131 Effects of Light Combinations on Chloroplast Photodinesis
- Kirksville Fountain, Daniel Paul 18 Kirksville Sr. H.S. 7 Leisure Dr. 63501 Comparative Reaction Rate of N-Methylbenzohydroxamates With Sanger's Reagent
- St. Joseph Barger, Jamie Luis 17 Central H.S. 76 Myrna Cir. 64506 Integration of Optical Fibers for Improved Growth of the Green Algae *Chlorella pyrenoidosa*

MONTANA

- Helena Doney, Renee Lynette 17 Helena H.S. 1822 Winne 59601 Effects of Ultraviolet-B Radiation on *Daphnia pulex* in Canyon Ferry Reservoir, Montana
- McEvoy, Theresa Anne 17 Helena H.S. Box M, Clancy 59634 Recalcitrant Seeds: A Model Using Partially Germinated Soybean Seeds to Compare the Effects of Dessication and Cooling Rates to Those of Recalcitrant Seeds
- Missoula Holt, Jason Andrew 18 Big Sky H.S. 3918 Mount Ave. 59801 Negative Impact of Antisocial Members on a Social Society
- Frandsen, Michael William 18 Sentinel H.S. 2509 Valley View Dr. 59803 Critical Spacing of Fuel Particles for Sustained Fire Spread at Different Slopes
- McCool, Tera Lynn 18 Sentinel H.S. 7215 Beryl Lane 59801 Diurnal Variations in Serum Interleukin Levels in the Murine D-Galactosamine Model

NEBRASKA

- Omaha Troy, Eric Ronald 17 Central H.S. 4008 Harney St. 68131 Analyzing the Transition to Chaos to Predict Metal Fatigue
- Skomal, Daniel Joseph 17 Northwest H.S. 9361 Ellison St. 68134 Effect of Change in Mass on the Rotation of a Sand Filled Funnel

NEVADA

- Reno Nelson, Christie Sue 17 McQueen H.S. 1595 Van Ness 89503 Angular Transmission Function of Optical Fibers

NEW JERSEY

- Cranford Heller, Joshua Zvi 17 Solomon Schechter Day School 774 Ave. A, Bayonne 07002 Image Processing Techniques for Analysis of Circadian Rhythms
- Edison Vazirani, Pravin Anano 18 John P. Stevens H.S. 19 Lombardi St. 08820 Induction and Resonance Effects Relevant to Chiral Recognition Phenomena
- Elizabeth Levine, Chavie Tzemach 16 Bruriah H.S. 171 E. Linden Ave., Englewood 07631 Depth Ranges of *Radiolaria*
- Fair Lawn Goldkorn, Amir 17 Fair Lawn H.S. 13-39 Lyle Ter. 07410 Anti-Fibroblast Growth Factor Monoclonal Antibodies: Modulation of Endothelial Cell Proliferation
- Hightstown Muroff, Jared Ian 17 Hightstown H.S. 9 Glenwood Cir., East Windsor 08520 Closer to Being Equilateral
- Holmdel Shah, Roopak J. 17 Holmdel H.S. 37 Seven Oaks Cir. 07733 Application of Evolutionary Techniques to a Computer Game
- Maplewood Losman, Julie Aurore 17 Columbia H.S. 475 Berkeley Ave., South Orange 07079 Anti-Histone Autoantibodies in Juvenile Rheumatoid Arthritis
- Montclair Fujita, Kenji Peter 18 Montclair H.S. 12 Garden St. 07042 Purification and Biological Activity of the *Escherichia coli* MetR Protein
- North Caldwell Vaidyanathan, Krishna I. 17 West Essex Regional Sr. H.S. 9 Cheri Lane, Fairfield 07006 Applications of Digital Imaging for Image Enhancement and Feature Analysis of Particulate Composites
- Old Tappan Huang, Tina Yu 17 Northern Valley Regional H.S. 11 Heritage Rd. 07675 Localization and *in vitro* Studies of Granulocyte-Macrophage Colony Stimulating Factor in Middle Ear Cholesteatoma
- Somerville Ellis, James Christopher 17 Immaculata H.S. 38 Hillcrest Rd., Martinsville 08836 Relationship of Canard/Strake Combinations to the Lift Coefficient on a Delta Wing Fighter: Three-Year Study
- Sanger, Wendy Renee 17 Immaculata H.S. 2 Roberts Rd., Warren 07060 Biochemical Effects of Acid Rain on the Microbial Content of New Jersey Ecosystems

NEW MEXICO

- Albuquerque Mazer, Sean Philip 17 Albuquerque Academy 3426 Purdue Pl., NE 87106 Clinical Research Into the Effects of Baseball Upon an Adolescent's Shoulder
- Legler, Christine Naomi 17 Cibola H.S. P.O. Box 10531 87184 Vascular Endothelium: *in vitro* Permeability and Surface Modulation
- Los Alamos Klein, Melissa Beth 17 Los Alamos H.S. 118 Laguna 87544 Gene Regulation in Transgenic Plants
- Santa Fe Whitman, Christopher Andrew 18 Santa Fe H.S. 107 Calle Palomita 87505 Localization of a Moving Dipole in the Human Brain Using a Superconducting Quantum Interference Device

NEW YORK

- Albany Seidel, Peter Robert 17 Albany Academy 33 St. Agnes Lane 12211 Light Scattering and Phase Separation in Polyacrylonitrile Blends
- Bayside (NYC) Kadar, Robert Scott 17 Benjamin N. Cardozo H.S. 75-11 195 St., Flushing 11366 Isolation, Partial Purification and Kinetic Properties of Cytoplasmic Malate Dehydrogenase Isoenzymes From the Honey Bee (*Apis mellifera*)
- Yang, Grace Yoon-kyung 17 Benjamin N. Cardozo H.S. 205-34(B) Brian Crescent 11360 Determining if HPV11's URR Can be Overexpressed With Insertion of SV40 Enhancers Into HPV11 Genome to Induce Tumorigenesis
- Brooklyn (NYC) Anderson, S. Kareem 17 Brooklyn Technical H.S. 368 Fillmore St., Staten Island 10301 Effect of Athletic Participation on the Academic Aspiration and Achievement of African-American Males in a New York City H.S.
- Cheung, Put 17 Brooklyn Technical H.S. 38 Monroe St., Apt. EF4, New York 10002 Representing Integers in the Quadratic Ring of $\mathbb{Z}[\sqrt{-2}]$ as a Sum of Two $\mathbb{Z}[\sqrt{-2}]$ Squares
- Mui, YamPui 18 Brooklyn Technical H.S. 45 Catherine St., #5, New York 10038 Knowledge and Attitudes of Chinese Females in New York City's Chinatown Concerning AIDS
- Sun, Wen B. 18 Brooklyn Technical H.S. 144 Orchard St., #3A, New York 10002 Study of the Omega Function
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- Jim, Bun 17 Midwood H.S. 2705 Kings Highway, #1C 11229 Synthesis of the Indole Alkaloid, Vincamine, by Stimulation of Callus Growth in the Periwinkle, *Vinca minor*
- Lee, Christopher Alarie 17 Midwood H.S. 2060 East 19 St. 11229 Thermal Plume Model as the Causal Mechanism of Plate Tectonics
- Ng, Tsz Wang 17 Midwood H.S. 8744 26th Ave. 11214 Defining the Molecular Characterization of the p70 Autoepitopes
- Samdani, Saima 16 Midwood H.S. 625 Ditmas Ave. 11218 Trailing of Conspecific Extract in *Thamnophis marcianus* and *Thamnophis sirtalis parietalis* Young
- Wolintz, Ellen Sharon 17 Midwood H.S. 100 Ocean Pkwy. 11218 Is a Deficiency of an Amino Acid Metal Complex the Cause of Rheumatoid Arthritis?
- Berkowitz, Eric Scott 17 Polytechnic Preparatory Country Day School 170 Forest Green, Staten Island 10312 An *in vitro* Study to Determine if 5 HT₁ Receptors Exist on the Excitatory Enteric Motor Neurons of the Guinea Pig Ileum
- Jiu, Haibin 17 Sheepshead Bay H.S. 2531 E. 23rd St., 1/Fl. 11235 Computer Simulation of Long-Term Changes in Allele Frequency for Phenylketonuria

Brooklyn (NYC) (continued) Gordon, Evan Jarett 17 South Shore H.S. 32 Paerdegat 12 St. 11236 Developmental Changes in the Vomeronasal and Olfactory Systems of Embryonic and Newborn Garter Snakes

Gilder, Gayle E. 17 Yeshivah of Flatbush Joel Braverman H.S. 2068 79 St. 11214 Subliminal Transmission and Reception of Educational Information Using the Visual Modality and a Personal Computer

Commack Chung, Hea Kyung 18 Commack H.S. 1 Shaker Ridge Lane 11725 Influence of Nitrates and Aldicarb on the Mortality, Post Embryonic Development Mobility and Phenotoxicity of *Panagrellus redivivus* (Nemata) With Special Reference to the Development of a Bioassay for Detection of Environmental Contaminants

Dix Hills Gothelf, Harlan Brett 17 Half Hollow Hills H.S. West 25 Bagatelle Rd. 11746 Measurement of Ciliate Bacterivory Involving Various Bacterioplankton From Coastal Waters

Elmhurst (NYC) Luis, Lester Raroque 17 Newtown H.S. 88-12 Elmhurst Ave., #5J 11373 Factors Affecting Water Lead Concentration in a H.S. Building

Manfredi, Imelda Elizabeth 17 Newtown H.S. 31-13 82 St. Jackson Heights 11370 Correlation Between School Attendance and Parental Smoking

Flushing (NYC) Bacigalupo, Robin Marie 17 Townsend Harris H.S. 142-20 84th Dr., Briarwood 11435 Correlational Study of Mathematical Creativity and Achievement in Mathematics

Bilaniuk, Ivan Wolodymyr 17 Townsend Harris H.S. 46-02 241 St., Douglaston 11362-1026 Suppression by Nutrients of High Frequency Spontaneous Mutation to Thiosinc Resistance in *Escherichia coli*

Donn, Rhonda Rochelle 16 Townsend Harris H.S. 1537 Allerton Ave., Bronx 10469 H.S. Students' Attitudes Regarding the Use of Animals in Biomedical Science

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Mechanicsville Hubbard, Brian Kent 17 Lee-Davis H.S. Three Knightly Rd. 23111 Effect of Different Compositions of Superconductors on Levitation Height and Resistance

Newport News Jarrett, Timothy Olin 17 Menchville H.S. 412 Nicewood Dr. 23602 Mathematical Modeling of Liquid Helium Refrigerators at CEBAF

WASHINGTON

Seattle Shuler, Klaus Burkhard 17 Shorewood H.S. 2312 NW 199th 98177 Toxicity of "Believe" Detergent on Lemna minor

Tacoma Dyhrman, Sonya Therese 17 Bellarmine Preparatory School 7606-84th St. E., Puyallup 98371 Analysis of Parameters Effecting Gonyaulax catenella Concentrations in Quartermaster Harbor, Washington

Shull, David Michael 17 Henry Foss H.S. 1424 N. Baltimore 98406 Expression of Class II Molecules in B-Cell Hybridomas: Transfection by Electroporation

WEST VIRGINIA

Wheeling Sandiford, Julie Ann 17 Wheeling Park H.S. 68 Crestview Dr. 26003 Nitrogen Systems for Hydroponics

WISCONSIN

Madison Mack, Jonathan Eberhard 17 James Madison Memorial H.S. 6201 N. Highlands Ave. 53705 Effect of Polyethylene Glycol and Glutathione on Lipid Peroxidation in Preserved Hepatocytes

Racine Cashon, Mary Faith 17 Case H.S. 167 Westminster Square 53402 Function of the Vitamin K-Dependent Plasma Protein Z

State Science Talent Searches

Since 1946 State Science Talent Searches have been held concurrently with the National Competition by special arrangement with Science Service. The 34 States and the District of Columbia listed below are cooperating in this plan to increase recognition and assistance to young scientists.

Anyone desiring information on or details of the results of State Science Talent Searches should send their inquiries to the Directors in the respective states.

ALABAMA: Dr. Leven S. Hazlegrove, 208 Rockaway Road, Birmingham, AL 35209-6626

FLORIDA: Dr. John G. Windsor, Jr. and Ms. Dorothy Henley, Florida Junior Academy of Science, 4520 N.E. 15th Terrace, Fort Lauderdale, FL 33334

ARKANSAS: Dr. John D. Peck, Associate Professor, Physical Therapy Dept., Suite 100, Univ. of Central Arkansas, Conway, AR 72032

GEORGIA: J. Dan Coleman, Director, Georgia Junior Academy of Science, Newnan H.S., 190 LaGrange Street, Newnan, GA 30263

COLORADO-WYOMING: Mr. Elemer Bernath, Executive Secretary, Colorado-Wyoming Junior Academy of Science, 803 Ensign, Fort Morgan, CO 80701-2019

ILLINOIS: Dr. Donald R. Dickerson and Dr. Dorothy R. Martin, Illinois State Academy of Science, Illinois State Museum, Spring and Edwards Streets, Springfield, IL 62706

CONNECTICUT: Dr. John Tanaka, Prof. of Chemistry and Director, Honors Programs, Univ. of Connecticut, U-147 Wood Hall, Room 113, 241 Glenbrook Rd., Storrs, CT 06269-2147

DISTRICT OF COLUMBIA: Mrs. Edythe Durie, 4408 Braeburn Drive, Fairfax, VA 22032

INDIANA: Dr. Gary E. Dolph, Dept. of Botany, Indiana Univ. at Kokomo, 2300 S. Washington St., P.O. Box 9003, Kokomo, IN 46904-9003

PENNSYLVANIA

Enola Meng, Raymond D. 18 East Pennsboro Area H.S. 10 Charisma Dr., Camp Hill
17011
Philadelphia Karlin, Joseph Howard 17 George Washington H.S. 1227 Fenwick Rd. 19115

TEXAS

San Antonio McGuire, Sean Eric 18 Keystone School 28433 Dalcin 78260

VIRGINIA

Alexandria Yu, Mina Kim 17 Thomas Jefferson H.S. for Science and Technology 3906
Sandalwood Ct., Fairfax 22031
Arlington Lines, Andrew Matthew 17 Yorktown H.S. 2828 N. Van Buren St. 22213

WASHINGTON

Tacoma Shull, David Michael 17 Henry Foss H.S. 1424 N. Baltimore 98406

Washington Trip Winners

of the

Forty-Ninth Annual Science Talent Search

for the Westinghouse Science Scholarships



The forty Washington trip winners of the 49th Annual Science Talent Search, among whom \$140,000 of Westinghouse Science Scholarships will be distributed, represent about 2.8% of those who completed entries in this scientific and educational competition.

Designed to discover and develop scientific and engineering ability among high school seniors, the Science Talent Search is conducted annually for the Westinghouse Science Scholarships by Science Service, 1719 N Street, N.W., Washington, DC 20036.

Eleven females and 29 males are being invited to Washington, DC for an all-expenses-paid trip March 1-5, 1990, to attend the Science Talent Institute. Here 10 winners will be selected by the board of judges to receive one of the following four-year Westinghouse Science Scholarships: One \$20,000 (\$5,000 per year), two \$15,000 (\$3,750 per year), three \$10,000 (\$2,500 per year), four \$7,500 (\$1,875 per year). The remaining 30 contestants will be given Westinghouse Science Scholarships of \$1,000 each.

The trip winners are 15 to 18 years of age and come from 23 cities in 13 states. They were picked by the judges from among 20,330 contestants of whom 1,431 completed their entries by writing a report on their scientific research, submitting personal data and teacher recommendations. Completed entries were received from 47 states, the District of Columbia, American Samoa, Guam, Puerto Rico, Overseas American Schools, and Department of Defense Dependents Schools.

SCIENCE SERVICE, INC. - 1719 N Street, N.W. - Washington, DC 20036

Washington Trip Winners

AGE OF WINNER FOLLOWS NAME
H.S. CITY IN LEFT COLUMN

HOME ADDRESS FOLLOWS NAME OF H.S.
HOME CITY OMITTED IF SAME AS H.S. CITY

CALIFORNIA

Fresno Kim, Tae Hoon 18 Bullard H.S. 30 W. Shaw 110, Clovis 93612
 Ryder, Jennifer Lynn 17 Edison H.S. 5517 E. Butler 93727
 Riverside Liu, David Ruchien 16 Poly H.S. 1345 Iverson Pl. 92506
 Rolling Hills Peng, Royce Yung-Tze 17 Rolling Hills H.S. 5315 Valley View Rd., Rancho Palos Verdes 90274

CONNECTICUT

Fairfield Bernold, Justin Yale 17 Fairfield H.S. 171 Lookout Dr. 06432

HAWAII

Wailuku Iwasaka, Ryan Mamoru 17 Henry Perrine Baldwin H.S. 434 Liholiho St. 96793

ILLINOIS

Chicago Headrick, Matthew Peter 16 University of Chicago Laboratory Schools H.S. 5483 Hyde Park Blvd. 60615

MARYLAND

Frederick Malin, Sacha Alexis 16 Frederick H.S. 1304 Arnoldstown Rd., Burkittsville 21718
 Gaithersburg Newbury, Jennifer Alice 17 Quince Orchard H.S. 16532 Sioux Lane 20878
 Silver Spring Agrawala, Manesh 17 Montgomery Blair H.S. 14408 Sturtevant Rd. 20904
 Fischman, Joshua Bailey 17 Montgomery Blair H.S. 6908 Millwood Rd., Bethesda 20817

MASSACHUSETTS

Framingham Cheng, Corey 17 Framingham North H.S. 10 Lavelle Ln. 01701

MONTANA

Helena Doney, Renee Lynette 17 Helena H.S. 1822 Winne 59601

NEW JERSEY

Hightstown Muroff, Jared Ian 17 Hightstown H.S. 9 Glenwood Cir., East Windsor 08520
 Holmdel Shah, Roopak J. 17 Holmdel H.S. 37 Seven Oaks Cir. 07733

NEW YORK

Brooklyn (NYC) Anderson, S. Kareem 17 Brooklyn Technical H.S. 368 Fillmore St., Staten Island 10301
 Cheung, Put 17 Brooklyn Technical H.S. 38 Monroe St., Apt. EF4, New York 10002
 Ng, Tsz Wang 17 Midwood H.S. 8744 26th Ave. 11214
 Mamaroneck Mowshowitz, Jed Elijah 16 Mamaroneck H.S. 41 Mayhew Ave., Larchmont 10538
 New York City Ascenzi, Laura Andrea 17 Bronx H.S. of Science 50-45 40th St., Sunnyside 11104
 Choy, Angela Wai-Yuah 17 Bronx H.S. of Science 60 First Ave., Apt. #19B 10009
 Ho, Yee Cheung 17 Bronx H.S. of Science 85-37 67 Dr., Rego Park 11374
 Ryu, Soojin 18 Bronx H.S. of Science 3070 Hull Ave., #6E, Bronx 10467
 Schlondorff, Johannes Sebastian 17 Bronx H.S. of Science 165 W. 66 St., Apt. #20A 10023
 Chen, Esther 17 Stuyvesant H.S. 42-38 78 St., Elmhurst 11373
 Liao, James Chien-Hsun 18 Stuyvesant H.S. 249-12 Van Zandt Ave., Little Neck 11362
 Santomaso, Bianca Denise 17 Stuyvesant H.S. 670 West End Ave. 10025
 Sragovich, Alexander 17 Stuyvesant H.S. 2213 Homecrest Ave., Brooklyn 11229
 Wong, Mitchell 17 Stuyvesant H.S. 150 E. Broadway, #4A 10002
 Port Washington Asnis, Peter David 17 Paul D. Schreiber H.S. 38 Cornwall Ln. 11050
 Blum, Elissa Michele 18 Paul D. Schreiber H.S. 70 Soundview Dr. 11050
 Queens Village (NYC) Victor, Jason W. 17 Martin Van Buren H.S. 82-25 218 St., Flushing 11427
 Setauket Ben-Zvi, David D. 15 Ward Melville H.S. 74 Christian Ave. 11733
 Kuga, Shinpei 17 Ward Melville H.S. 45 Hawking Rd., Stony Brook 11790