

Ashland Davis, Michael Andrew 17 West Potomac H.S. 8121 Fort Hunt Rd. 22308
Low Temperature Behavior of Stress-Induced Birefringence in Polarization-Holding Fibers

Fort Defiance Jackson, Larry Scott 17 Patrick Henry H.S. 1813 Otter Runn Dr. 23005
Effects of Various Concentrations of Urea on Industrial Wastewater Treatment

Richmond Martin, Patrick Nolan 17 Fort Defiance H.S. Rt. 5, P.O. Box 210, Staunton 24401 Relationship of Exercise to Retinal Blood Vessels and Peripheral Visual Fields

Winchester Chakravarti, Arnab 17 Monacan H.S. 11015 Beechdale Rd. 23235 In vivo Effects of N-acetylglucosamine on Coliphage Lysozyme in an Attempt to Arrest the Lytic Cycle of Infection

Wenderoth, Suzanne 17 Handly H.S. Rt. 5, Box 292 22601 Pre-Visual Detection of Stress in Plants

WASHINGTON

Seattle Gleason, Salina Saville 17 Garfield H.S. 142 N.E. 55 St. 98105 Isolation of Vocabulary Elements in Two Pods of Orcinus orca

WEST VIRGINIA

Farmington Heck, Michael Adam 17 North Marion H.S. Rt. 2, P.O. Box 182, Fairmont 26554 Computer Controlled Robots

Morgantown Kolaja, Thomas Adam 17 Morgantown H.S. 674 Manor Pl. 26505 Numerical Experiment: Vibrations and Rotations of Water

WISCONSIN

Brookfield Lecher, Donald Jefferson 17 Brookfield Central H.S. 2455 Lyonesse Lane 53005 Dynamic Air Cushions: Effects of Offsetting the Boundary Layer With an Interjectory Airstream

Madison Moss, Mark Hubert 17 James Madison Memorial H.S. 217 Shiloh Dr. 53705 Viral Coat Protein Induced Leakage of Biological Membranes

Norris, Tracy Beth 17 James Madison Memorial H.S. 906 Lorraine Dr. 53705 Removal of Pseudomonas syringae From Bean Leaflets in a Continuous Flow System

Dresang, Lee Timberlake 17 Madison West H.S. 440 Virginia Terrace 53705 Transferable Drug Resistance in Coliform Bacteria Isolated From Chickens Fed Antibiotics

THE 45th ANNUAL *Science Talent Search*[®] for the Westinghouse Science Scholarships and Awards

1986 HONORS GROUP



Administered by SCIENCE SERVICE
1719 N Street N.W., Washington, D. C. 20036

FOR RELEASE: WEDNESDAY, JANUARY 15, 1986

The Science Talent Search was the pioneering endeavor to discover at the high school senior year level those who have the potential to become the research scientists and engineers of the future. It has fulfilled this function far beyond the hopes entertained when this educational project was conceived. Many millions of dollars in scholarships in colleges and universities throughout the nation, supplementing the Westinghouse Science Scholarships, have been given to those who have thus been discovered to have high science talent.

This selection of students with research ability in science and engineering has become an institution and tradition due to approval from the academic community and the creditable records of winners in colleges, universities and professional positions.

The participation of a great industrial organization in the financing of the annual Science Talent Search is a notable contribution to the advancement of science in America. This activity can be considered a support of "pure research" of importance equal to the fundamental researches in the Westinghouse Research Laboratories. Science and education are grateful for the financial support of the forty-five Science Talent Searches by the Westinghouse Electric Corporation and the Westinghouse Educational Foundation.

Science Service, engaged in the interpretation and public understanding of science on a broad front, is proud of administering the annual Science Talent Search. From the newspapers, educators, scientists and engineers of America, there has been enthusiastic cooperation in this annual activity that means so much to high school seniors interested in science and engineering.

1986 Honors Group

The achieving of Honors in the Science Talent Search is an evidence of ability and interest in science and engineering which should be 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 of 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 111 girls and 189 boys.

From this list of 300 Honors, 40 are being chosen as Winners of the Washington trip. Among these, \$140,000 in scholarships and awards will be distributed. The Winners are being announced subsequent to the distribution of this list and their names will be published in SCIENCE NEWS of January 25, 1986, and it will be sent upon request accompanied by a self-addressed stamped envelope.

(age follows name; home address underlined)

ALABAMA

Florence	Riley, Patti Lynn 17 Bradshaw H.S. 104 Woodstock Dr. 35630 Observed Effects of NutraSweet on Chick Embryos
Homewood	Saito, Yoriko 18 Homewood H.S. 1507 Wellington Rd. 35209 Mannopine Metabolism in Crown Gall Tumor
Huntsville	Daly, John Thomas 17 Randolph H.S. 3132 Heatherhill Cir. 35802 Analysis of Laser Speckle Patterns to Determine Surface Roughness
Vestavia Hills	Tolwani, Ashita Jiwat 15 Vestavia Hills H.S. 433 Ves Trace 35216 Development of Assays for the Detection of Brain Specific Antibodies

ARKANSAS

North Little Rock	Rider, Todd Harrison 17 Ole Maine H.S. 501 West A St. 72116 How Can Rocketry Staging Be Improved?
Springdale	King, Charles Eldon 18 Springdale H.S. Rt. 3, Box 173 King's Rd. 72764 Evidence of Benzo(a)pyrene in the Saliva of Cigarette Smokers

CALIFORNIA

Alhambra	Jung, Jackson Hoa-Wai 16 Alhambra H.S. 2322 Roscommon Ave., Monterey Park 91754 Lifetime Extension of the R-Line Fluorescence in Ruby
Claremont	Grabner, David Joseph 17 Claremont H.S. 424 W. 7 St. 91711 Algorithms for Continued-Fraction Expansions of Surds
Cupertino	Yao, Kenneth Chuan-Tsing 17 Homestead H.S. 1564 Kennewick Dr., Sunny- vale 94087 Stochastic Approach to the Theory of Irreversible Intrami- cellular Reactions
Fresno	Vu, Nancy Mai 17 Clovis West H.S. 329 E. Omaha Ave. 93710 Epidemio- logic Study of Antibodies Against Rabies Vaccine in Dogs by Enzyme- Linked Immunosorbent Assay
Los Angeles	Feig, Andrew Lawrence 18 University H.S. 11172 Ophir Dr. 90024 Mono- clonal Antibodies Specific for the N-myc Oncogene Product
San Marino	Wang, Vincent Joseph 17 San Marino H.S. 1310 Monterey Pl. 91108 Gene Functions of Mouse Hepatitis Virus
South Pasadena	Wong, Kelvin Lee 17 South Pasadena H.S. 1832 Via Del Rey 91030 Con- formational Study of 3-chloro-N,N-dimethylaminopropylamine Hydro- chloride in Solution Using Nuclear Magnetic Resonance Spectroscopy
Stockton	Gunderson, Erik Thomas 17 Lincoln H.S. 6506 Embarcadero, #5, 95209 Comparative Photochemistry of Furan and Tetrahydrofuran in the Presence of Quartz and Palladium Surfaces

COLORADO

- Cortez Thomas, Terri Sue 17 Montezuma-Cortez H.S. 11881 Co. Rd. 29 81321
Determining the Susceptibility of Microbes to Household Disinfectants
- Englewood Hector, Scott Daniel 17 Cherry Creek H.S. 4208 S. Alton St. 80111
Hologram of a Point Source Generated on a Home Computer
- Fort Collins Meroney, Brett Nelson 17 Rocky Mountain H.S. 1601 Scarborough Dr.
80526 Snow Fence Design
- LaJunta Steele, Erin Kate 17 LaJunta H.S. 526 Rice Ave. 81050 Effects of Mala-
thion on the Ammonia Production of *Azotobacter vinelandii*
- Lakewood Ismailidis, Lakes Isidros 17 Green Mountain H.S. 729 S. Cole Ct. 80228
Hey! Wait a Minute! What's a Quadrafoloid?

CONNECTICUT

- Glastonbury Meyerand, Mary Elizabeth 17 Glastonbury H.S. 64 Littel Acres Rd. 06033
Utilizing the Hydrodynamic Power of Ocean Waves
- Groton Timpano, Anthony Bruno 17 Robert E. Fitch H.S. 323 Benham Rd. 06340
Heavy Metals and Their Relationship With a Reproductive Abnormality
Found in *Ilyanassa obsoleta* Near Marinas

DISTRICT OF COLUMBIA

- Washington Stokesberry, Eric Jon 17 Gonzaga College H.S. 2949 Green Valley Rd.,
Ijamsville, MD 21754 Chromograph for Measuring Defects of Color
Vision
- Carson, Cathryn Leigh 17 National Cathedral School 5410 Surrey St., Chevy
Chase, MD 20815 Linear Free-Energy and Other Relationships in Mass
Spectrometry

FLORIDA

- Coral Springs Barre, Jill 17 J.P. Taravella H.S. 12039 N.W. 30 St. 33065 Response of
Octopus to Pavlovian Conditioning
- Berger, Jonathan Barry 17 J.P. Taravella H.S. 9906 Royal Palm Blvd.
33065 Inhibition of Cytochrome P-450 by Ketoconazole
- Herzog, Jamie Lynn 17 J.P. Taravella H.S. 11440 N.W. 30 St. 33065
Interactions of Plant Hormones and Physical Stress; Interactions of Plant
Hormones and Glutathione
- Davie Bookman, Marnie Jane 17 Nova H.S. 3421 S.W. 116 Ave. 33330 Evaluation
of Captopril as a Converting Enzyme Inhibitor in Hemorrhagic Shock
- Jacobs, Jeffrey Scott 17 Nova H.S. 8561 S.W. 27 Pl. 33328 Demonstration
that the Agglutinin Found in Calf Hearts Causes the Adhesion of Cardiac
Muscle Fibers in vitro
- Fort Lauderdale Miniet, Elizabeth Diedre 17 Cardinal Gibbons H.S. 53 Isle of Venice, Apt.
#202 33301 Effects of Sodium Benzoate and MSG
- Zamer, William Frank 17 Cardinal Gibbons H.S. 2601 S.E. 7 Dr., Pompano
Beach 33062 Sexual Selection in *Drosophila melanogaster*
- Gainesville Zoltewicz, Joanna Sue 17 Gainesville H.S. 2609 S.W. 9 Dr. 32601 Micelle
Stabilization of a Fluorescent Compound
- Melbourne McAlwee, Gerald Steven 17 Melbourne H.S. 886 Vance Cir., N.E., Palm
Bay 32905 Heat Recovery to Improve Engine Efficiency
- Miami Chung, Wendy Kay 17 Miami Killian Senior H.S. 8781 S.W. 87 St. 33173
Oviposition Behavior in the Caribbean Fruit Fly (*Anastrepha suspensa*):
Preference for Guava (*Psidium guajava*) Fruits at Different Stages of
Ripeness
- Gill, Deanna Kingsley 17 Miami Sunset Senior H.S. S.W. 101 Ln., #13507
33186 Effect of Folinic Acid Upon the Cytotoxicities of Fluorinated Pyri-
midines in HEP-2 Tumor Cells
- Pensacola Diep, Trung Am 16 Escambia H.S. 6420 Birkhead Dr. 32506 Adsorption of
MS2 Viruses to Tale Treated With Salt Solutions
- Plantation Cramer, Mark Darryl 17 South Plantation H.S. 1941 S.W. 52 Terrace
33317 Location of Frost Resistant Areas in Florida
- Sunrise Weiss, Scott D. 17 Piper H.S. 8371 N.W. 37 St. 33321 Electrical Stimula-
tion of *Agrobacterium tumefaciens* Induced Tumors Found on Stems of
Helianthus annuus as a Potential Arrestor of Cellular Hyperplasia

Tampa

Winter Park

- Wickstrom, Erica Lorraine 17 Chamberlain H.S. 10612 Altman St. 33612
HL60 Cell Proliferation by an Anti-c-myc Pentadecadeoxynucleotide
- Albright, Maurice 18 Winter Park H.S. 2427 Sherbrooke Rd. 32792 Effects
of an Electromyostimulation Training Program for the Calf Muscles

GEORGIA

Atlanta

- Epstein, Brian Andrew 17 Lakeside H.S. 2094 Street Deville 30345 Relax-
ation of Nickel Crystals Using the Morse Potential
- Bright, Pamela Ann 17 Benjamin E. Mays H.S. 1145 Lynhurst Dr., S.W.
30311 Alteration in Circadian Rhythm as a Function of Food Deprivation
and Light Durations in *Blaberus craniifer*
- Kreutter, Kevin Douglas 17 Benjamin E. Mays H.S. 523 A. Murphy Circle,
Fort McPherson 30330 Location and Size of the Active Contractile Site
in *Chaos carolinensis*
- Marietta Griffith, Traci Ann 17 Marietta H.S. 240 Polk St. 33064 Effects of Simu-
lated Aging on Performance on the Embedded Figures Test

HAWAII

Hilo

- Moniz, Jadelyn Joy 17 Waiakea H.S. 1544 Komohana St. 96720 Preferen-
tial Feeding on Ethephon Treated Plants by the Chinese Rose Beetle,
Adoretus sinicus Burmeister

ILLINOIS

Carbondale

- Martin, Tod Andrew 17 Carbondale Community H.S. 1005 Hunter Woods
62901 Effects of Simultaneous Treatment With Different Ratios of the
Promoter Hormones on *Lactuca sativa* Hypocotyl Length and Leaf Area
- Ritzel, Brent Paul 17 Carbondale Community H.S. RR 2, Murphysboro
62966 Effects of Varying Wavelengths of Light on the Transmittance
Distance Within the Stem

Chicago

- Kozanecki, Nancy Ann 17 Good Counsel H.S. 8613 N. Oleander Ave.,
Niles 60648 Generative Magic Squares
- Hatch, Anthony Korotko 17 Latin School of Chicago 1360 Sandburg Ter.,
#2512 60610 Factors Influencing First Impressions
- Popiela, Carole Lynn 18 Lourdes H.S. 6922 W. 63 Pl. 60638 Biolumines-
cence in Fireflies and *Photobacterium fischeri*
- Viz, Mark Joseph 16 Marist H.S. 15140 Larkspur Lane, Orland Park 60462
Differentiation and Comparison of Consonant and Dissonant Musical
Intervals Using Fourier Analysis and the Parseval Equality
- Hovanessian, Armen Ara 17 Morgan Park Academy 8318 Oakwood Ave.,
Munster, IN 46321 Response of Interferon-Sensitive and Interferon-
Resistant Human Daudi Cells to Human Interferon

- Szatkowski, Mary Therese 17 Mother McAuley H.S. 8343 S. Kenneth Ave.
60652 Effect of Poison on Enzymatic Activity: Inhibition of Salivary
Amylases and Amyloglucosidase by Lead (II) Nitrate

- Towalski, Joseph Christopher 17 Weber H.S. 4946 W. School 60641 Abun-
dant and Hygroscopic Nature of Cloud Condensation Nuclei

Evanston

- Gross, Philip Nathaniel 17 Evanston Township H.S. 2737 Woodbine Ave.
60201 Thermal Diffusivity of Dispersed Copper Whisker Composites
- Klibanov, Diane Lynn 17 Evanston Township H.S. 2025 Bennett 60201
Determination of the Optimum Operating Current for the Electrosynthe-
tic Production of Terephthalic Acid

- Ueno, Masashi 17 Evanston Township H.S. 1407 Main 60202 Model for
One-Dimensional Fuelastic Collisions With Internal Energy

Park Ridge

- Lindgren, Bert Axel 18 Maine South H.S. 121 Wilma Pl. 60068 Monte
Carlo Program to Verify the Existence of Like-Signed Dimuon Neutrino
Events

Skokie

- Edwards, Michael Charles 18 Niles West H.S. 8909 Parkside, Morton Grove
60053 Determination of the Correlation Existing Between Ozone's
Attenuation of Ultraviolet Radiation (254 Nanometers) and the Death
Rate of *Bacillus cereus*

Varna

- Laible, Philip Daniel 17 Mid-County Senior H.S. R.R. #1, Box 130,
Magnolia 61336 Exploring the Nitrogen-Potassium Relationship in Corn

INDIANA

- Michigan City Owens, Mark David 17 Marquette H.S. 14 Pocantico Tr., Box 54, New Buffalo, MI 49117 Real Time Transmission Holographic Interferometry: Determination of Nanometric Movement in Transparent Medium as Applied to Water Channel Flow Visualization of Test Specimens
- West Lafayette Fong, Christina Margareta 17 William Henry Harrison H.S. 4828 Homewood Dr. 47906 Chlorophyll Content in Soybean Leaves Versus Specific Leaf Weight, and the Chlorophyll a to b Ratios as Affected by Genetic Diversity
- Swain, Sheryl Lynn 17 William Henry Harrison H.S. 314 E. Co. Rd. 650 North 47906 Development of an Ultrafiltration Fiber for the Removal of Subcutaneous Tissue Fluid With Possible Applications Toward a Constant Blood Glucose Monitoring System

KANSAS

- Topeka Burdzik, Sharif Hassan 17 Topeka West H.S. 2700 W. 6 66606 Bifurcations and Chaos in Low Dimensional Systems

KENTUCKY

- Covington Teisl, Deborah Ann 17 Notre Dame Academy 210 Skyline Dr., Cold Spring 41076 Parameters Affecting the Operation of a Liquid Piston Engine
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- Yeh, Siegfried Chang-Rong 15 Ballard H.S. 3608 Fallen Timber Dr. 40222 Reaction Kinetics of Glucose Fermentation

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MAINE

- Bangor Hsu, Timothy Ming-Jeng 16 Bangor H.S. 121 Juniper St. 04401 Motion of a Glacier on a Non-Horizontal Base
- Milo Dellaire, Teresa Lynn 18 Penquis Valley H.S. 6 Water St. 04463 Isolating an Antimicrobial Ingredient in Honey

MARYLAND

- Bethesda Ross, Steven Michael 17 Walter Johnson H.S. 5009 Alta Vista Ct. 20814 Microcomputer Automation of Monoclonal Antibody Production
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- LaMacchia, Brian Andrew 17 Thomas S. Wootton H.S. 1 Devon Ct. 20850 Computer Simulations of Protein Folding in Two and Three Dimensions

MASSACHUSETTS

- Beverly Prentice, Jennifer Eileen 17 Beverly H.S. 20 Gregg St. 01915 Testing the Reliability of Standard Methods in the Recovery of Injured Coliform Bacteria in Drinking Water

FRAMINGHAM

HATFIELD

WELLESLEY

- Kao, Rebecca Yunt-Chon 17 Framingham North H.S. 28 Brownlea Rd. 01701 Properties of the Phythagorean Triples Where Legs Differ by One
- Boyer, Lawrence George 17 Smith Academy 128 Elm St. 01038 Effects of Phases on the Integrated Magnitudes of Comets
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NEBRASKA

- Henderson Kliewer, Bryan Albert 17 Henderson H.S. RR 1 68371 Effects of Different Rates of Applied N on Grain Protein and NO₃-N Remaining in the Root Zone for Sprinkler Irrigated Corn and Groundwater Contamination

NEW HAMPSHIRE

- Laconia Poelman, Conrad James 17 Laconia H.S. 23 Harrison St. 03246 Characterization of Actin Gelation Factors From *Acanthamoeba* and Their Effects on Myosin I ATPase Activity

NEW JERSEY

- Atlantic City Busch, Alisa Beth 17 Atlantic City H.S. 10 N. Tallahassee Ave. 08401 Effects of Tampon Leachables on the Competitive Survival of *Staphylococcus aureus* in Mixed Cultures
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- Santa Fe Williams, Kevin Travis 17 Pojoaque H.S. Rt. 1, P.O. Box 439, Espanola 87532 Effect of Activated Macrophages on DNA Synthesis by EMT-6 Tumor Cells

NEW YORK

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- Bayside Greene, Bryan 17 Bayside H.S. 185-24 Jordan Ave., St. Albans 11412 Does a Tumor Promoting Agent Induce Viral Genes Attached to the Chromosomes of Human Cells?
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- Ko, Kwang Woo 18 Brooklyn Technical H.S. 39-29 58 St., Woodside 11377 Comparison of Computer-Calculated Electronic Structure and Properties of 2-fluorothiazole With its Experimentally Determined Values
- Ma, Man Sing 17 Brooklyn Technical H.S. 99 Allen St., Apt. #6, New York 10002 Analyzing Generalized Classes of Path Problems
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- Zhu, Wei-Jing 16 Brooklyn Technical H.S. 167 Bay Ridge Ave. 11220 Solution to the Generalization of a Classical Problem on Sums of Squares Involving Gaussian Integers
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- Hsieh, Helen 17 Franklin D. Roosevelt H.S. 1283 Prospect Ave. 11218 To Search for Extensin Cross-linked Peptides in Tomato Cell Walls
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- Smith, Teresa Ann 17 Half Hollow Hills H.S. East 42 Beaumont Dr., Melville 11747 Comparative Effects of a New Synthetic Cardiac Glycoside to Digoxin
- Plass, David Brian 17 Half Hollow Hills H.S. West 155 Chaffey Ct. 11746 New Evidence That Extensin Precursors Eluted From Tomato Cell Suspension Cultures can be Cross Linked in vitro
- Lee, Paul Joo Hak 17 Newtown H.S. 86-04 Grand Ave., #7L 11373 Nutritional Requirements and First Laboratory Culture of Two Species of Larger Foraminifera *Amphisorus hemprichii* and *Amphitegina lessonii*
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