

FILE COPY

# HONORS GROUP

IN

THE 29th ANNUAL

*Science Talent Search<sup>®</sup>*

for the

Westinghouse Science Scholarships  
and Awards

1970



**SCIENCE CLUBS OF AMERICA**

*Administered By Science Service*

1719 N STREET N. W. WASHINGTON, D. C. 20036

## The Meaning of Honors in the Science Talent Search

The achieving of Honors in the Science Talent Search, is an evidence of science ability and interest which can 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 utilizing a list furnished by the American Council on Education.

All boys and girls awarded Honors in the Science Talent Search are considered so outstanding that any institution of higher learning will be justified in considering their abilities carefully.

In past years members of the Honors Group have made creditable records in the colleges and universities to which they have been admitted.

From the list of 300 honor awards, 40 are being chosen as winners of the Washington trip. Among these \$67,500 in scholarships and awards will be distributed. The list of winners is being announced subsequently to the distribution of this list and will be published in Science News of January 31, 1970, and it will be sent upon request accompanied by a self-addressed stamped envelope.

Each of those winning honors is being furnished with multiple certificates intended to accompany applications for college admissions and scholarships, but a listing in this pamphlet should be accepted as an equivalent certification.

The proportion of boys and girls in this list is determined by the ratio of boys and girls entering the contest. Listed are 85 girls and 215 boys. The girls determine their own chances in the Science Talent Search in accordance with the number that enter. Of the Honors Group, 59.5% of the boys and 70.0% of the girls rank in the upper 5% in their high school classes.

## The Annual Science Talent Search

The Science Talent Search was the pioneering endeavor to discover at the senior high school year level those who have the potentialities to become the research scientists 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 has become an institution and tradition due to approval from the educational world and the creditable records of winners in colleges, universities and professional positions.

In a real sense the annual Science Talent Search is more than a scholarship contest. It is a major step toward making scientific talent available for important tasks in our civilization.

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 twenty-eight Science Talent Searches by the Westinghouse Educational Foundation, an organization endowed by the Westinghouse Electric Corporation for the promotion of education and science.

Science Service, engaged in the interpretation and popularization of science on a broad front, is proud of administering, through Science Clubs of America, the annual Science Talent Search. From the newspapers, educators and scientists of America there has been enthusiastic cooperation in this annual activity that means so much to high school seniors interested in science. The Science Talent Search is a continuing opportunity and responsibility of the more than 25,000 science groups and more than 500,000 members affiliated with Science Clubs of America.

FOR RELEASE: WEDNESDAY AFTERNOON, JANUARY 21, 1970

## Honors Group

### in the Twenty-ninth Annual Science Talent Search<sup>\*\*</sup>

\* indicates girls

H. S. indicates High School

HOME ADDRESS is underlined

AGE of winner follows name

Title of project report submitted is on next line

#### ALABAMA

Birmingham	*Goins, Audrey Elizabeth 17 Springdale H.S. Rt. 6, Box 443 35217 Glucose Requirements of <u>Chlorella pyrenoidosa</u> in Asynchronous Culture
Decatur	Griffith, Michael Lynn 18 Austin H.S. 1012 - 8th Ave. 35601 Artificial Nuclear Disintegration of Lithium Atoms
	*Thrasher, Marcia Gail 17 Austin H.S. 1602 Cagle Ave. 35601 Effect of Electric and Magnetic Fields on Germination and Seeding Growth of Ryegrass and Garden Beans
Tuscaloosa	*Williams, Patricia Lynn 17 Austin H.S. Rt. 3, Box 340, Hartsville 35640 Color Perception in the Canine

Telle, Whitney Royce 17 Tuscaloosa H.S. 1718 6th Ave. E. 35401  
Provenance of Igneous Pebbles in Terrace Deposits of Tuscaloosa County, Alabama

#### ALASKA

Anchorage	Kangas, Stephen Allen 17 A. J. Dimond H.S. 7100 Lake Otis Pkwy. 99502 Ionic Sound Reproduction
	Rehbock, Robert Anthony 17 East H.S. 1648 Alder Dr. 99504 The Use of Radioisotopes for Fuel Cell Stimulation
	Watts, George Edward 17 West Anchorage H.S. 1443 W. Northern Lights Blvd. 99503 Study of the Growth and Development of Salmonoids Through a Semi-Closed System

#### ARIZONA

Phoenix	Carriker, Richard Grady 17 Brophy College Preparatory School Underwater Vision
	Kurth, Wayne Raymond 17 East H.S. 3124 E. Garfield St. 85008 Response of <u>Euglena gracilis</u> to a Magnetic Field
Tucson	Mutter, Anthony Barton 16 Ricon H.S. 4937 E. 2nd St. 85711 Relationship Between Mathematical Formulae and Marine Mollusk Shell Growth

#### ARKANSAS

Harrison	Ferguson, Gregory Wayne 17 Harrison H.S. 718 W. South 72601 Seasonal Rainfall and Radial Growth of Shortleaf Pine
Texarkana	*Adcock, Karen Dianne 16 Arkansas H.S. Rt. 1, Box 355C 75501 <u>Betta splendens</u> as a Pharmacologic Test Subject
	*Swinney, Wanda Dianne 17 Arkansas H.S. 3124 Hickory 75501 Comparative Study of Air Pollution Levels in Five Areas of Texarkana, Arkansas

#### CALIFORNIA

Anaheim	Dialynas, Deno Pete 17 Savanna H.S. 901 La Reina St. 92801 Testing the Degree of Retention of Germination-Readiness and Light-Sensitivity of Phytochrome After Drying
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Antioch	Garrow, Ralph Ray, Jr. 17 Antioch Sr. H.S. 118 Shady La. 94509 Determining Evolutionary Relationships on the Basis of Electrophoresis of Serum Proteins	
Atherton	Brown, Peter James 17 Menlo-Atherton H.S. 776 Cotton St., Menlo Park Calcium Nutrition of Two Grass Species With Special Reference to Serpentine Soils 94025	
Hollywood	Yen, Tien-Sze Benedict 16 Menlo-Atherton H.S. 220 Linfield Dr., Apt. 3, Apt. 3, Bacterial Decomposition of 4-Piperidinol Menlo Park 94025	
Long Beach	*Bittle, Cindy 17 Hollywood H.S. 11511 Dona Teresa, Studio City 91604 Crown-Gall Disease and Tumor-Inducing Substance of Agrobacterium tumefaciens	
Los Angeles	*Abrams, Janet Beth 17 Robert A. Millikan Sr. H.S. 5443 Killdeer St. Origin and Distribution of Sediments in Lake Vanda, 90808 Antarctica	
Monterey	Spindel, Eliot Robert 17 Alexander Hamilton H.S. 9127 Olin St. 90034 Selection of an NADase-less Mutant in Neurospora crassa	
Oceanside	Rich, Darryl Steven 17 Daniel Murphy H.S. 6353 W. 84th Pl. 90045 Methodology in Extraction of Tracheal Sap From Pear Trees	
Ridgecrest	Colwell, Cary Ronald 17 Seaside H.S. 491 Jean Cir., Marina 93933 Effects of Salt Solution Concentration and Flow on Streaming Potential in an Inert Core	
Riverside	Winslow, John William 17 Oceanside H.S. 1015 California St. 92054 Immunochemical Study of Nonspecific Phytahemagglutinin Ricin With Blood Group Substances	
Sacramento	Leipnik, Erik Hozomeen 18 S. E. Burroughs H.S. 522B Nimitz, China Universal Wave Simulator Lake 93555	
San Diego	Baumer, James Sloan, Jr. 17 Notre Dame H.S. 1665 Country Club Dr. Effects of Smog on Cotton 92506	
Santa Ana	Petry, David Lawrence 16 Rio Americano H.S. 1333 Eastern Ave. 95825 Infinite Series and Products	
Sunnyvale	*Asada, Carol Ann 17 Clairemont Sr. H.S. 3211 Geronimo Ave. 92117 Effects of Acetylsalicylic Acid on Blood Coagulation of Teenagers	
Colorado Springs	Orcutt, John Alfred 17 Clairemont Sr. H.S. 2848 Arnott St. 92110 Psychological Factors in Voting	
Pawcatuck	Dutky, Paul Arthur 17 Crawford H.S. 5025 54th St. 92115 Effects of DDT on Egg Shell Thickness	
West Hartford	Franklin, Kevin Thomas 17 Patrick Henry H.S. 8002 Lake Adton Dr. 9211 Several Factors Controlling the Passband of an X-Cut Quartz Crystal	
Woodcrest	Andreco, William Stephen 17 San Diego H.S. 1702 32nd St. 92102 Effects of Triton X-100 and Ethionine on Leucyl-tRNA in Glycine max	
	COLORADO	
	Brown, Kenneth Charles 17 Roy J. Wasson H.S. 2310 Condor 80909 Strengthening Effects of Particle Reinforcement in Portland Cement and Plaster	
	CONNECTICUT	
	*Kent, Judith Ann 17 Stonington H.S. Flanders Rd., Stonington 02891 Effect of Drugs on the Rate of Heartbeat	
	Kochanski, Thaddeus Paul 18 F. U. Conard H.S. 589 Fern St. 06107 Containment of Dilute Hydrogen Thermal Plasmas by Crossed Beta Vector Magnetic Fields	
	DELAWARE	
	Gibson, David Arthur 17 H. C. Conrad H.S. 313 Taylor Rd., Elsmere Argon Sputtering of Thin Copper Films 19804	
	Washington	DISTRICT OF COLUMBIA
		*Rubin, Judith Sharn 17 Woodrow Wilson H.S. 3308 McKinley St., N.W. 20015 "Instant Insanity" Cubed
		FLORIDA
		Steinhardt, Paul Joseph 17 Coral Gables H.S. 5661 Marlins St. 33146 Fourth Dimensional Tetra-Quadric Surfaces and Their Applications
		Morett, Larry Joe 17 Nova H.S. 1440 N.W. 56th Ave., Lauderhill 33313 Groups of Order P <sup>2</sup>
		*Brendemuehl, Judith 17 Marianna H.S. 706 Spring St. 32446 The Thiolalkylation of Phenacylthiolsulfonates
		Denninghoff, Karl Louis 17 Merritt Island H.S. 1665 Mars St. 32952 Effects of DDT and DDE on Photosynthesis in Chlorella
		Osborne, Steven Woodrow 17 Merritt Island H.S. 100 Darwin Ave. 32952 Tagging of Archosargus probatocephalus in Brevard Waters
		*Dugger, Albia Jane 17 Miami Coral Park Sr. H.S. 5885 S.W. 2nd St. Effects of Far-Red Light on the Photoconversion of Phytochrome in Seed Germination
		Nance, Robert Walter, Jr. 17 Miami Coral Park Sr. H.S. 6055 Devonshire Blvd. 33155 Effects of Ethylene on Plant Seedlings
		Hamilton, Rex Little 17 Miami Sr. H.S. 2350 S.W. 3rd St. 33135 A Study in Atmospheric Forces: The South Florida Waterspout
		Barton, Thomas Kari 17 Bishop Barry H.S. 8000 Elbow La. 33710 Jupiter Catting
		GEORGIA
		*Potter, Karen Elizabeth 17 North Cobb H.S. 1385 Clearview Dr., Rt. 3 Photometric Quantitative Analysis of Trace Amounts of Ethanol 30101
		*Billingstey, Sue Ann 16 Briarcliff H.S. 1265 Christmas La. 30329 Comparison of Loops and Groups
		Jackson, John Owens, Jr. 18 Lakeside H.S. 2777 Riderwood Dr., Pellets of Blepharisma as Protection From Ultraviolet Light Decatur 30033
		Lee, Bothwell Graves 17 Academy of Richmond County 2918 Bransford Two Applications of the Ring Counter as a Logic Control Element Rd. 30904
		*Cheek, Betsy Ann 17 Briarwood H.S. 834 Niskey Lake Cir., S.W., Correlations of the Intelligence Quotient Atlanta 30331 and Memory Tests
		HAWAII
		Tatemichi, Thomas Kaname 17 Aiea H.S. 99311 Honohono St. 96701 Osmoregulation in Leander debitis
		Yokoyama, Wayne Makoto 17 Aiea H.S. 99-583 Aliipoe Dr. 96701 Incidence of Lymphocyte Antigens Among Ethnic Groups in Hawaii
		Arai, George Tooru 17 Hilo H.S. 4 Waihau La., Box 1818 96720 Effect of Solar Flux and X-Rays on Ionospheric Electron Content
		Hoopai, Randolph Patrick 17 Kamehameha School for Boys 3511 Manoa Flame Photometric Detector and Metabolism of Pesticides Rd. 96822
		*Apau, Noetani Jan 18 Kamehameha School for Girls 1615 Alencastrle St. Investigation of the Silver Nitrate-Copper Reaction 96816
		Chang, Michael Guy 17 Punahoa School 1453 Kahanakai Pl. 96821 Analysis of the Boson Effect on Particle Interactions

	Karwoski, John Henry 16 Radford H.S. 901-B Hase Dr., Ft. Shafter 96558 Relationship Between the Sedimentation Coefficient and Electrophoresis Migration Rate of Reticulocyte RNA	Wilmette	Dolson, William Robert 17 Loyola Academy 20 Granville, Park Ridge 60068 A High Density Photographic Image Storage and Retrieval System
	*Ling, Cheryl LiMei 17 Roosevelt H.S. 2868 Poelua St. 96822 Photocytic Response of <i>Mimosa pudica</i>		
Wailuku	Agres, Robert 17 St. Anthony H.S. 596 Kunu Pl. Kahului, Maui 96732 Fungal Ecology of the Slopes of Haleakala		
	ILLINOIS		
Barry	Fennell, James Edward 17 Barry H.S. R.R. #1, New Salem 62357 The Phenomenon of Lutescens Rings	Hammond	Morse, Kenneth Duane 18 O. P. Morton Sr. H.S. 7506 Missouri Ave. 46323 Infrared Study of the Environment of Exchangeable Ammonium Ions of Clay Surfaces
Chicago	Fedan, Orest 17 Lane Technical H.S. 1059 N. Drake Ave. 60651 Basis of Photography	Saint John	Krieter, Philip Andrew 17 Lake Central H.S. 7406 W. 101st Ave., Crown Point 46307 Mutualism Between <i>Chlorohydra viridissima</i> and <i>Chlorophyceae</i>
	Haak, Ronald Price 17 Lane Technical H.S. 3147 N. Spaulding 60618 Homeomorphisms	South Bend	Murrman, Don Neil 17 James Whitcomb Riley H.S. 1118 E. Milton St. 46613 Effects of Varying Concentrations of Salt and of Different Ions on Oviposition in <i>Aedes aegypti</i>
Dolton	Weinberg, David Arthur 17 Sullivan H.S. 1713 W. Wallen Ave. 60626 Repeated Summation of Polynomial Sequences	Albia	IOWA
Evanston	Czeister, Charles Andrew 17 Thornridge H.S. 17 Robin La., South Holland 60473 Quantitative and Theoretical Analysis of the Rotamite	Bagley	Dicks, Philip Duane 18 Albia Community H.S. 213 2nd Ave. E. 52531 Oocystis Polymorpha Used in a Plant Bioregenerative Life Support System
	Addison, Roger Nathan 17 Evanston Twp. H.S. 1906 Lee St. 60202 Identification of Simple Metallic Ions in Solution Through Potentiometry and Computer Analysis	Brooks, Nathan Marc 17 Yale Jamaica Bagley Community School N-( <i>Benzyl-L-lysine</i> ) Bromomethyl Ketone, Site Bagley 50026 Specific Inhibitor for Aspergilliopeptidase B	
	Carlson, Walter Carl 16 Evanston Twp. H.S. 2 Milburn Park 60201 Relationship Between H <sup>+</sup> and OH <sup>-</sup> Ion Concentration and the Electrical Conductivity of Solutions	Council Bluffs	Brown, Richard Henry 17 Thomas Jefferson H.S. 2826 W. Broadway 51501 Geographic Voting Trends in the United States From 1868 to 1968
Highland Park	*Ellman, Rhonda Lauren 17 Highland Park H.S. 2903 Summit Ave. 60035 A Study of the Series Interferometer	Marshalltown	*Padesky, Christine Anne 16 Marshalltown Community H.S. 1109 W. State St. 50158 Potentiometric Study of the Hexaaminoruthenium(III)-Hexaaminoruthenium(II) Complex-ion System
Joliet	Walters, Bradford Blair 17 Highland Park H.S. 1207 Lynn Terrace 60035 Nuclear Magnetic Resonance Spectrometry	Topeka	KANSAS
	*Greger, Nancy Gay 17 Joliet Twp. H.S. West Rt. 2, Box 231, Plainfield 60544 Effects of Magnetism on Hydroponic Plants and Seed Germination		Reynolds, Robert Gregory 17 Topeka West H.S. 141 Meadow La. 66606 Response of Selected Bacteria to Diurnal Freezing and Thawing
La Grange	Hammerschmidt, Raymond Emil 17 Lyons Twp. H.S. 930 Sherwood Dr., La Grange Park 60525 Synthesis of Sulfur Containing Amino Acids Under Possible Prebiotic Conditions	Bardstown	KENTUCKY
	Ksander, Scott Louis 17 Lyons Twp. H.S. 1000 Newberry Ave., Computer Program for Simulating Space Flight	Lexington	Florence, Gregory Goodin 17 Nelson County Sr. H.S. Box 392 40004 Variations in <i>Hyalophora cecropia</i>
Marshall	*Vivona, Louise Frances 17 Lyons Twp. H.S. 1013 Homestead Rd. 60525 Investigation Into Light Transmission	Baltimore	Rees, Douglas Charles 17 Bates Creek H.S. 3405 Belvoir Dr. 40502 Some Chemical and Biological Aspects of the Bacterial Pigment Prodigiosin
Normal	*Marvin, Melody Louise 17 Marshall H.S. 604 Chestnut St. 62441 Educated Worms		MARYLAND
Oak Lawn	*Bellas, Christine Marie 17 University H.S. 915 Broadway 61761 A Study of a Virus Inhibitor in <i>Chenopodium capitatum</i> and Related Investigations of the Saguaro Virus	Bethesda	Rogers, Philip Louis 17 Baltimore Polytechnic Institute 6309 Pearce Ave. 21215 Effects of Space Environment on Material Mechanics
	Litton, James Robert, Jr. 17 Oak Lawn Community H.S. 8785 S. Corcoran Rd., Hometown 60456 Amino Acid Content and Regenerative Properties of Planaria <i>Dugesia dorotocephala</i> and <i>dactyliogera</i>	Potomac	Miller, Lawrence Goodall 16 Milford Mill H.S. 3617 Latham Rd. 21207 Relationship Between Intracellular Nucleoside Triphosphates and Ribonucleic Acid Synthesis in <i>Escherichia coli</i>
Skokie	Moffler, Mark Douglas 17 Oak Lawn Community H.S. 9301 S. Sproat 60453 Hydronic Electromagnetic Radiation Emissions From Species of Teleost and Elasmobranch Fishes	Silver Spring	*DeVries, Elizabeth 17 Patapsco Sr. H.S. 8171 Midhaven Rd. 21222 Impact Damper: A Mechanical and Analytical Study
	Garland, Merrick Brian 17 Niles Twp. H.S. West 4456 Lunt, Lincolnwood 60646 Peroxidase Enzyme System Control of Hormonal Concentration		*Warsinger, Lisa Renée 17 Bethesda-Chevy Chase H.S. 8426 Donnybrook Dr., Chevy Chase 20015 Statistical Analysis of Temperature Variations With Distance
	McLeod, Dennis James 17 Niles Twp. H.S. West 8931 N. Marmora Ave., Morton Grove 60053 Occultation Observation and Reduction		Merewitz, Glenn Steven 17 Winston Churchill H.S. 11806 Tilton Dr. 20854 Methods of Measurement of DNA Levels in Blood Plasma
	Zeman, Robert Kenneth 17 Niles Twp. H.S. West 6620 N. St. Louis, Lincolnwood 60645 Repair of Bacterial DNA Through Photoreactivation		King, Peter James 16 Springbrook H.S. 810 Bradford Ave. 20904 Automatic Determination of Heavy Metal Water Pollutants
			Lande, Robert Harold 17 Springbrook H.S. 10410 Royal Rd. 20903 Photochemical and Radiation Response Characteristics of Pararosaniline Cyanide Solution
			Radcliffe, Mark Fiohn 17 Springbrook H.S. 13205 Clifton Rd. 20904 Reactions of Fresh Water Algae to Salinity Changes

Wheaton	Fritz, Lawrence Charles 17 Wheaton H.S. 2904 Radius Rd. 20902 Ternary System of Benzoic Acid, Fumaric Acid and Tributyl Phosphate		
Boxford		MASSACHUSETTS	
Braintree	*Campbell, Nancy Lee 17 Masconomet Regional H.S. 56 Ipswich Rd., Topsfield 01983 Effects of Patterns of Feeding on the Pigeon		
Dedham	Satmeta, Gordon Oliver 17 Braintree H.S. 29 Colby Rd. 02184 Design and Construction of a Precoated Joule-Thomson Nitrogen Liquifier		
Granby	Harcourt, Stephen James 17 Dedham H.S. 57 Orchard St. 02026 Precipitation of Polyacrylonitrile		
New Bedford	Charette, Michael Paul 17 Granby Jr.-Sr. H.S. 12 High St. 01033 Observing Artificial Earth Satellites		
Newton Centre	Weinshet, Alan Jeffrey 17 New Bedford H.S. 99 E. Clinton St. 02740 Enzymatic Attack of Ethylenediamine		
Ann Arbor	Eastaugh, Steven Richard 17 Newton South H.S. 15 Frances St., Newton Highlands 02161 Formation of Ammonia in Interstellar Space	MICHIGAN	
Detroit	*Hinderer, Marilyn Jean 17 Ann Arbor Pioneer H.S. 2865 Esch Ave. 48104 Effects of Varying Conditions on Artificial Callus Production		
Lansing	Ultman, William John 17 Ann Arbor Pioneer H.S. 1430 Granger Ave. 48104 Trends and Variations in Climatic Parameters and Their Implication on Glacier Growth and Shrinkage		
Portage	Harden, Roger Arthur 17 Catholic Central H.S. 14008 Marion 48239 Synthesis and Reduction of 2-Phenylacetone		
Trenton	Smythe, Robert Allen 17 Osborn H.S. 20106 Strasburg 48205 Photometric, Spectrographic Examination of the Cepheid Variable Alpha Ursae Minor		
Warren	Gallck, Gary Edward 17 Eastern H.S. 220 E. Randolph 48906 Purification of an Unknown Antibiotic by Column Chromatography		
Saint Cloud	Wiessner, Charles Allen 17 Portage Central H.S. 10613 S. Westnedge X-Ray Diffraction Analysis of Strontium Formate 49081	MISSOURI	
Clarksdale	*Morrison, Diane Rebecca 17 Trenton H.S. 2645 Dunlap 48183 Measurement of Hydroxyproline-Rich Glycopeptides in Primary Plant Cell Walls	MISSISSIPPI	
Shaw	Francis, Gene Leonard 17 Paul K. Cousino Sr. H.S. 11175 Gerald 48093 Solid Phase Synthesis of the Peptide Hormone Bradikinin		
O'Fallon	*Sell, Jenann Catherine 17 Technical H.S. 45 Woodhill Rd. 56301 Erosion: How It Happens and What It Does		
Patmyra	Myers, Ransom Aldrich, Jr. 17 Coahoma County H.S. Box 415, Lula Interactions of X-Rays and Neutrons With Crystalline Structure 38644	MISSOURI	
Saint Louis	Haas, Arthur Louis III 17 Shaw H.S. RFD 2, Box 231-A 38773 Growth Inhibition of Hydrogen-Oxidizing Bacteria Under Homogeneous Fields of Low Paramagnetic Strength		
			MONTANA
			Hensley, Franklin Charles 18 Choteau H.S. 30 - 7th Ave., S.W. 59422 Nature of the Origin of Replication of DNA
			NEW JERSEY
			Creswick, Richard John 17 Cresskill H.S. 18 Burns Pl. 07626 Effects of Temperature and Concentration on the Conductivity of Electrolytic Solutions
			*Nicas, Iphigenia Sophia 17 Long Branch H.S. 340 Hollywood Ave. 07740 Chromatographic Pigment Patterns for Leaf Species of the Genus Acer
			Korf, Bruce Richard 17 Matawan Regional H.S. 16 Donna Pl. 07747 Toxic and Mutagenic Effects of 20-Methylcholanthrene Introduced Into Cultures of Normal Human Leukocytes
			Lehman, John T. 17 New Brunswick Sr. H.S. 20 Hill St., Milltown 08850 Phytoplankton Periodicity in a Small Oligotrophic Pond
			*Shoback, Barbara Rose 17 New Brunswick Sr. H.S. 78 Louis St. 08901 Chitinase Activity in Soils
			NEW YORK
			*Gross, Janet Lynn 17 Baldwin Sr. H.S. 1631 Oak St. 11510 Effects of Ethylene on Plant Photosynthesis and Respiration
			Salit, Herbert Warren 16 Bayside H.S. 160-47 17th Ave., Whitestone Visual Magnitudes of Extended Nebulous Objects 11357
			*Carmickle, Lynne Joanne 17 Academy of St. Joseph 71 Keane La., East Northport 11731 Effect of Colchicine on the Physiology of the Planarium Dugesia dorotocephala
			Beitel, Joseph Michael 18 Bellport Sr. H.S. 41 Fuoco St., Bellport 11713 Analysis of Owl Pellets for Determining Owl Diet and Mammal Distribution
			Burns, Martin Joseph 17 Brooklyn Technical H.S. 81-23 156th Ave., Howard Beach 11414 Synthesis and Rearrangements of 1-Picolinoyl Aziridine
			*Jacobowitz, Helene Joy 16 Canarsie H.S. 1031 E. 101st St. 11236 Application of Computer Techniques to Game Theory
			Kruger, Albert Aaron 17 Erasmus Hall H.S. 35 Tennis Ct. 11226 Quantitative Method of Determination of Titanium Dioxide in the Air
			*Acosta, Mary Angela 17 Bishop R. A. Kearney H.S. 1209 82nd St. 11228 Study of Tumors Induced in Plants With Agrobacterium tumefaciens
			Gitter, Leonard 17 James Madison H.S. 2618 E. 29th St. 11235 Function of Time on a Monkey's Capacity to Follow Frequencies of Photic and Auditory Stimuli
			*Trakhtman, Pauta 17 Midwood H.S. 1043 E. 9th St. 11230 Synthesis and Solution Characterization of Transition Metal Complexes of Divalent Cobalt
			*Skwerer, Lori Alissa 16 Packer Collegiate Institute 50 Plaza St. 11238 Effect of Radiation on the Stability of Cortisol- <sup>14</sup> C
			Saal, Andrew Kim 17 Polytechnic Preparatory Country Day School Teaching the Mentally Retarded 786 E. 19th St. 11230 to Teach the Mentally Retarded
			Bernstein, Charles William 16 Yeshiva University H.S. 2166 Bronx Park E., Bronx 10462 Flip Side of Fibonacci
			Dubin, Alan Jay 16 Yeshiva University H.S. 140-50 Ash Ave., Flushing Fibonacci-Type Sequences With Continued Fractions 11355
			Frenkel, William Leo 16 Yeshiva University H.S. 1384 Grand Concourse Vector Applications to Ratios in the Triangle 10456
			*Gates, Diane Frances 17 Maryvale Sr. H.S. 20 Isabelle Rd. 14225 Investigation of Parameters in a Solid State Laser
			Buff, Joseph Jonathan 15 Far Rockaway H.S. 257 Fernside Pl. 11691 Extension of the Cauchy-Reimann and LaPlace Equations to Functions of Quaternion Variables

- Eimer, Bruce Norbert 16 Far Rockaway H.S. 20-21 Seagirt Blvd. 11691  
Compounds Implicated in the Disease Resistance of the Parsnip and Potato Tuber
- Gottomp, Stephen Michael 17 Far Rockaway H.S. 723 Almont Rd. 11691  
Sex and Strain Differences in the Adaptation of Two Strains of Mice to a Reversal of Their Normal Light Cycles
- \*Hopenwasser, Karen 16 Far Rockaway H.S. 461 Beach 67th St., Arverne Use of Behavior Modification to Instruct a Mentally Retarded Child in the Playing of a Simple Wind Instrument 11692
- Forest Hills**  
Ansour, Manoug 15 Forest Hills H.S. 64-09 102nd St. 11375  
Inequalities Related to Fibonacci Numbers
- Getwan, Elliot Marc 17 Forest Hills H.S. 67-69 Alderton St., Rego Park The Equitic Quadrilateral 11374
- Glick, William Nathan 16 Forest Hills H.S. 98-09 64th Rd. 11375  
Effects of Manipulation Techniques on the Verbal Behavior of Psychotic Patients
- Levine, Abby Paul 16 Forest Hills H.S. 110-11 72nd Ave. 11375  
Consecutive Integral Triangles
- Schleifer, Leonard Steven 17 Forest Hills H.S. 89-11 63rd Dr., Rego Park Constructing Squares 11374
- \*White, Marjorie Sara 16 Forest Hills H.S. 7337 Austin St. 11375  
Relation of Handedness to Verbal and Mathematical Aptitudes
- Jamaica**  
Chang, Ludwig Chih 17 Jamaica H.S. 79-25 150th St., Flushing 11367  
Divisibility
- \*Cooper, Wendy Louise 16 Jamaica H.S. 82-08 165th St. 11432  
Correlation of Physical and Emotional Stimuli to Intelligence
- Falcone, Roger Wirth 17 Jamaica H.S. 147-64 Village Rd. 11435  
Magnetic Deflection of Ions in Solution
- Inagaki, Tsutomu 17 Jamaica H.S. 147-50 77th Rd., Flushing 11367  
Precision of Shape Recovery and the Maximum Amount of Work Accomplished Via Memory Effect
- \*Leitman, Susan Flora 16 Jamaica H.S. 193-60 Salerno Ave., Hollis 11423  
Scientific Validity and Psychological Significance of Graphology
- \*Marantz, Robin Sue 16 Jamaica H.S. 73-18 174th St., Flushing 11366  
Correlation Between a Student's Grade, Sex and Career Goals and His Attitudes Toward Marks
- Menchel, David Lewis 16 Jamaica H.S. 75-50 177th St., Flushing 11366  
Effects of the Introduction of an Auxiliary Metric on Conic Sections
- \*Norton, Stefanie Hope 16 Jamaica H.S. 73-50 179th St., Flushing 11366  
Conceptual Learning and Rote Learning in Children
- \*Schwartz, Barbara Ann 16 Jamaica H.S. 81-09 190th St. 11423  
Effect of Manual Dominance on the Speed and Direction of Hand Motion
- Kenmore**  
\*McIntosh, Mary Elizabeth 17 Kenmore West Sr. H.S. 156 W. Hazeltine Ave. 14217  
Bacterial Resistance to Mouthwashes and Toothpastes
- Levittown**  
Doherty, Richard Francis 17 Division Avenue H.S. 89 Wantagh Ave. 11756  
Experimental Pulsed Ion Laser for Use in Determining Optimum Pulse Amplitude and Duration of an Applied Axial Magnetic Field
- Cohen, Ira Mark 17 Gen. Douglas MacArthur H.S. 3962 Wolkow Ave., Seaford 11783  
Neutron Structure
- Leinweber, David J. 17 Gen. Douglas MacArthur H.S. 3814 Dunhill Rd., Wantagh 11793  
Postulational Systems
- Little Falls**  
Polinski, Joseph Walter 17 Little Falls H.S. Top Notch Rd. 13365  
Investigation of Eclipsing Binaries Through Spectral Analysis
- Merrick**  
Tangredi, Michael Peter 17 Sanford H. Cathoun H.S. 1407 Van Nostrand Unification of the Various Fields Pl., North Merrick 11566  
of Physics Through a Law of Relative Motion
- New York**  
Begeleman, Mitchell Craig 16 Bronx H.S. of Science 1295 Grand Concourse Solvent Vapor-Induced Phase Transition in Cholesteric Liquid Crystals 10452  
Bernstein, David Mark 16 Bronx H.S. of Science 98-51 Queens Blvd., Rego Park 11374  
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## Washington Trip Winners FILE COPY of the

### 10 Twenty-ninth Annual Science Talent Search® for the Westinghouse Science Scholarships and Awards

The forty Washington trip winners of the 29th Annual Science Talent Search, among whom \$67,500 of Westinghouse Science Scholarships and Awards will be distributed, represent about 1.9% of those who completed entries in this scientific and educational competition.

Designed to discover and develop scientific ability among high school seniors, the Science Talent Search is conducted annually for the Westinghouse Science Scholarships and Awards by Science Clubs of America, a Science Service activity, 1719 N Street, N.W., Washington, D.C. 20036.

Eleven girls and 29 boys (proportion determined by ratio of boys and girls completing entries) are being invited to Washington, D.C., for an all-expense trip February 25 through March 2, 1970, 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 \$10,000 (\$2,500 per year), two \$8,000 (\$2,000 per year), three \$6,000 (\$1,500 per year), four \$4,000 (\$1,000 per year). The remaining 30 contestants will be given Westinghouse Science Awards of \$250 each.

The trip winners are 15 to 18 years of age and come from 28 cities in 15 states and the District of Columbia. They were picked by the judges from among 19,952 contestants of whom 2,075 completed their entries by taking a science aptitude examination, obtaining recommendations and writing a report on their science project. Completed entries were received from 50 states and the District of Columbia.

Of the 40 Twenty-ninth Annual Science Talent Search Winners, 33 ranked in the top 5% of their graduating class and 15 were first, second or third. Most of the winners are members of science clubs and many of them are club presidents or other officers. Most of their clubs are affiliated with Science Clubs of America. Girls accounted for 28.4% of the entries this year.

## Washington Trip Winners

\*indicates girls  
H.S. indicates High School

HOME ADDRESS follows name of school  
AGE of winner follows name

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