

1968

**HONORS GROUP**

**IN**

**THE 27th ANNUAL**

*Science Talent Search<sup>®</sup>*

**for the**

**Westinghouse Science Scholarships  
and Awards**

**1968**



**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 February 10, 1968, 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 82 girls and 218 boys. The girls determine their own chances in the Science Talent Search in accordance with the number that enter. Of the Honors Group, 78.9% of the boys and 84.1% 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-six 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 28,000 science groups and more than 750,000 members affiliated with Science Clubs of America.

## Honors Group

### in the Twenty-seventh Annual Science Talent Search®

\* indicates girls HOME ADDRESS is underlined  
H. S. indicates High School AGE of winner follows name  
Title of project report submitted is on next line

#### ALABAMA

- Birmingham \*Banks, Ellen Prince 17 W. A. Berry H.S. 1524 Shades Crest Rd. 35226  
Theories of a Negatively Based Number System
- Semmes Gossett, Glenn Augustus 17 M. G. Montgomery H.S. 68 Charmingdale,  
A Modified Vapor Growth Process for the Mobile 36608  
Crystallization of Zinc Sulfide

#### CALIFORNIA

- Atherton Bush, William Read 17 Menlo-Atherton H.S. 64 Placitas Ave. 94025  
Determination of the Identity of Elements Through Analysis of  
Their Radioactive Isotopes
- Belmont Pettengill, Robert Claude, Jr. 17 Carlmont H.S. 17 Cottage Lane, San  
Properties of Generalized Arithmetic Triangles Carlos 94070
- Berkeley \*Monger, Teresa Grace 17 Presentation H.S. 1504 Elm St., El Cerrito  
Chloroplast Maturation and Pigment Study in Tobacco Callus 94530
- Granada Hills Roy, Richard Harvey 16 Granada Hills H.S. 10152 Wish Ave., Northridge  
Quantitative Analysis of Certain Taxes in 91324  
Paramecium caudatum
- Vleck, David Joseph Alan 17 Granada Hills H.S. 17056 Rinaldi St. 91344  
Maximum Temperature Tolerances of High-Altitude Anurans
- La Mesa Chapman, David Edwin 17 Helix H.S. 4315 Olive Ave. 92041  
Effects of Dietetic Variations on the Growth Rate of *Xiphophorus hellerii*
- Root, William August 16 Helix H.S. 5935 Lake Murray Blvd. 92041  
A Report on Project EASIER, Phase Three
- Long Beach Waddington, Bruce Alan 17 Robert A. Millikan H.S. 5471 E. Hill St. 90815  
A Visual Survey of the Long Term Atmospheric Changes of the  
Planet Saturn
- Los Angeles Montalbano, Foster Richard 17 Daniel Murphy H.S. 5924 Graciosa Dr.,  
Application of Latex Particles to Identify Influenza Hollywood 90028
- Aaronson, Marc Arnold 17 Fairfax H.S. 657 N. Crescent Hgts. Blvd. 90048  
Nuclear Magnetic Resonance Applied to Melting Point Studies
- Bernstein, Paul Evan 17 Hamilton H.S. 2433 S. Beverly Dr. 90034  
Practical Physiological Aspects of Energy From ATP - The  
Adenosine Triphosphate Energy Converter
- Kaufman, Jeffrey Lawrence 17 Hamilton H.S. 3009 Beverly Dr. 90034  
Mitochondrial Swelling and Contraction
- Newark Johnson, Burton Louis 17 Newark H.S. 7512 Birkdale Dr. 94560  
Description of a Theory and Plans for Construction of  
Proton Accelerator to Prove Value of Theory
- Oakland Burke, Daniel Robert 17 Castlemont H.S. 9234 Bancroft Ave. 94603  
Systems Isomorphic to the Real Number System With  
Subsets of the Real Numbers as Elements
- Fong, George 17 Oakland H.S. 938 E. 28th St. 94610  
The Effects of Electron Radiation on Semiconductor Devices
- Palos Verdes \*Brennan, Anne Philomena 18 Marymount H.S. 407 N. Prospect Ave.,  
Estates Sodium Transfer Under Hormonal Redondo Beach 90277  
Influence in the Chromatophores of *Rana catesbiana*
- \*Genez, Andrée Lawnsworth 17 Marymount H.S. 2041 Galerita Dr., San  
Isolation and Electrophoretic Characterization of Pedro 90732  
Human Triose Phosphate Isomerase
- Redwood City Scheve, Larry Gerard 17 Sequoia H.S. 2443 Washington Ave. 94061  
Lactic Acid Dehydrogenase: The Existence of an  
Enzyme-Coenzyme Linkage at the Disulfide Bond Site?

- San Bernardino \*Lowry, Linda Jenette 17 San Gorgonio H.S. 6799 Serena St. 92404  
Influence of *Staphylococcus aureus* on the Functions  
of Liver Mitochondria in Mice
- San Diego \*Hansen, Elin Kristin 17 Clairemont Sr. H.S. 3326 Cowley Way 92117  
An Explanatory Theory for Dermo-Optical Perception
- \*Wolf, Ann Louise 17 Kearny H.S. 3511 Pomeroy St. 92123  
Determination of Divisibility
- \*Parsons, Penelope Jo 17 Point Loma H.S. 625 Rosecrans 92106  
Algebraic Properties of the Power Set of an N-Element Set
- Greensite, Fred Samuel 17 Will C. Crawford H.S. 5926 Baja Dr. 92115  
A Method for the Solution of Goldbach's Conjecture
- San Jose Zody, Douglas Brian 17 Blackford H.S. 772 Hibiscus Lane 95117  
A Qualitative and Quantitative Study of the Cuticle Wax of Citrus Fruits
- Sunnyvale \*Larson, Jeanne Nanette 17 Lynbrook H.S. 11259 Monterey Ct.,  
Experiments on Environmental Nature of Cupertino 95014  
Crown Gall Disease
- Miller, John Pratt 17 Lynbrook H.S. 11248 Catalina Ct., Cupertino 95014  
Extraction and Identification of Steroid Hormones From Coconut Oil
- Sorensen, Larry Brice 17 M. A. Peterson H.S. 1081 Waterbird Way,  
Correlating Geoelectrostatic Geomagnetic and Santa Clara 95051  
Solar Radiation Fields
- Woodside Legg, Douglas James 17 Woodside H.S. 171 N. Castanya Way, Menlo Park  
A Study of *Alicaligenes viscolactis* 94025

#### COLORADO

- Fort Collins Rudolph, Daniel Jay 18 Fort Collins H.S. Rt. 4, Box 215 80521  
Pressure of Light as a Function of Its Foot Candle Intensity
- Wheat Ridge Fox, David Lee 17 Wheat Ridge H.S. 2140 Braun Dr., Golden 80401  
Oxidation of Tartrate Ion by Hydrogen Peroxide  
in the Presence of Cobalt (II)

#### CONNECTICUT

- Avon \*Sherman, Kathleen Ann 17 Avon H.S. 37 Cider Brook Rd. 06001  
Nature of the Biological Clock
- Windsor LeWitt, Peter Alfred 17 Loomis School 41 Selden Hill Dr., W. Hartford  
An Analysis of the Mechanism of Physostigmine and 06107  
Veratrine Action on Frog Nerve Function

#### DELAWARE

- Wilmington Haden, Keith Wightman 17 Henry C. Conrad H.S. 1 Lynbrook Rd., 19804  
Spatial Relationship of the Retinal Oil Globules  
Found in the Sea Turtle (*Chelonia mydas mydas*) and the  
Swamp Turtle (*Pseudomys scripta elegans*)

#### DISTRICT OF COLUMBIA

- Washington Beach, Hubert Schenck 18 Sidwell Friends School 1622 29th St. 20007  
Why Do Skin Transplants Take More Readily in Cancerous  
Than in Normal Mice?

#### FLORIDA

- Daytona Beach \*Sanderson, Pamela Suzanne 18 Mainland Sr. H.S. 160 S. Ridgewood Ave.,  
Effect of Vibrato on Perceived Pitch Ormond Beach 32074
- Fort Hanni, Richard Squier 17 Nova H.S. 1112 Wyoming Ave. 33312  
Two Systems of 2x2 Matrices
- Jacksonville Stepp, Joseph Thomas 17 Englewood H.S. 2660 Forest Blvd. 32216  
Acoustic Signals for Constituent Sentence Structure
- \*Giles, Deborah Leigh 18 Terry Parker H.S. 1144 Townsend Blvd. 32211  
Salt Taste Thresholds in Hydrochlorothiazide-Treated Rats
- Mitchell, Horace Glover, Jr. 18 Terry Parker H.S. 8028 Alderman Rd.  
Operation Theory and Development of Higher 32211  
Order Operations
- Ralston, Glenn Myron 17 Terry Parker H.S. 5756 Holly Bell Dr. 32211  
An Infinite Valued Logic and a Method of Graphing  
Infinite Valued Logic Equations

- Miami Sanchez, Phillip Laurence 18 Archbishop Curley H.S. 6990 Silver Oak Dr.,  
Are the Atypical Mycobacteria Implicated in Miami Lakes 33012  
Pulmonary, Extrapulmonary or Other Disease?
- \*Whidden, Linda Dawn 17 Miami Coral Park H.S. 5931 S.W. 10th St.  
Development and Study of Electromigration Techniques in 33144  
Washing and Concentrating Cultures of *Paramecium aurelia*  
and *Paramecium caudatum*
- Ponce, Juan Francisco 18 Miami Sr. H.S. 1117 N.W. 1st St. 33128  
Comparative Study on the Phosphoglyceric Acid Cycle of  
Mammalian Erythrocytes
- Miami Beach \*Goldman, Rose Hannan 17 Miami Beach Sr. H.S. 2335 Meridian Ave.  
Immunochemical Studies on the Sera of *Ascidia niger* 33140
- Villanueva, Philip Andrew J. 17 St. Patrick H.S. 4395 Pinetree Dr. 33140  
The Venus Flytrap in Relation to Its Metabolic Activities  
and Possible Economic Therapeutic Values
- North Miami \*Gonzalez, Rita Marie 16 North Miami Sr. H.S. 1640 N.W. 121st St.,  
Effect of Nystatin on *Saccharomyces cerevisiae* Miami 33167
- Orlando Wellborn, Roger Gary 18 Oak Ridge H.S. 301 Stimson St. 32809  
Primary Production as Estimated by Four Methods
- Tallahassee Billingsley, Earl Thomas 17 Leon H.S. 1903 Chuii Nene 32301  
Digital Determination of the Maximum Latitude for a Minor Circle Turn
- \*Lensen, Karen Meng-Mei 16 Leon H.S. 2305 Amelia Circle 32304  
Effects of Tranquilizers on the Growing and Laying  
Processes of Barred Rock Chickens

#### HAWAII

- Honolulu \*Fong, Helen B. S. 17 Maryknoll H.S. 701 Panui St. 96817  
Effects of *Clostridium butyricum* Spores on  
Growth of Solid Tumors in Mice
- Brady, Scott Thomas 17 Radford H.S. 621-D Macomb Rd., Ft. Shafter  
Parity Violation in Lambda Decay APO SF 96558

#### ILLINOIS

- Belleville Davis, Stephen Lee 17 Belleville Twp. H.S. West 407 W. Mill St.,  
The Nature of Solutions Saturated in Two Millstadt 62260  
Salts Having a Common Ion
- Chicago Jablonski, Tadeusz Edward 18 Fenger H.S. 10442 Rhodes Ave. 60628  
Effects of Electric Field on Light Propagation  
Through Pure and Semi-Pure ADP Crystal
- Siama, James Theodore 17 Morgan Park Academy 10134 S. Oakley Ave.  
Potassium Analysis by Neutron Activation 60643
- Swift, Robert Michael 16 Stephen Tyng Mather H.S. 6741 N. Rockwell St.  
Biochemical Study of Prostaglandins 60645
- \*Piechocka, Sylvia 16 Wells H.S. 1801 W. Superior St. 60622  
Study of an Inhibitor on the Avian Neural Crest
- Nelson, Richard Frederick 17 William J. Bogan H.S. 2877 W. 84th St.  
Sensitivity of Sugar Taste in *Lucilia sericata* 60652
- Chicago Heights Ooms, William Jay 17 Bloom Twp. H.S. Rt. 1, Box 291-B 60411  
Digi-Code II Translator
- Des Plaines Schulz, Frank Kurt 17 Maine Twp. H.S. West 2045 Pine St. 60018  
Number of Wins in n-Dimensional Tic-Tac-Toe
- Dolton \*McCurdy, Karyl Ann 17 Thornridge H.S. 15645 Drexel 60419  
Streptomycin's Inhibitory Effect on Chlorophyll Formation
- Evanston Becker, Stephen Allan 17 Evanston Twp. H.S. 1324 Monroe St. 60202  
Color Indexes of Stars
- Cain, Christopher Bentley 17 Evanston Twp. H.S. 2325 Forestview 60201  
Evaluation of Procedure for Determination of Lime Content  
in an Aggregate
- Shaker, Douglas Currier 17 Evanston Twp. H.S. 2514 Harrison St. 60201  
Cuprous Halide Reactions With Iodide Compounds
- Solotke, Robert Michael 17 Evanston Twp. H.S. 8651 Springfield, Skokie  
Isolation and Investigation of Cystine 60076
- Glenview Appleyard, Philip James 17 Glenbrook South H.S. 1209 Milwaukee Ave.  
Bacterial Fuel Cells 60025
- Wiss, James Ernest 17 Glenbrook South H.S. 2006 Robincrest Lane 60025  
An Investigation Into an Energy Analogous Quantity

Highland Park Franks, Michael Stephen 17 Highland Park H.S. 903 Marion Ave. 60035  
Effects of Amino Acids on the Regeneration of  
Planaria (*Dugesia dorotocephala*)

Joliet \*Hein, Frances Jessie 17 St. Francis Academy 200 Emery St. 60436  
Color Preferences of Butterflies as Indicated by the  
Dominant Vegetative Attractors to Butterflies

La Grange Dizikes, George James 17 Lyons Twp. H.S. 5239 Central Ave., Western  
Determination of the Radial Velocity of Alpha Springs 60558  
Lyrae by the Doppler Principle

Harvey, Wayne Norman 16 Lyons Twp. H.S. 3932 Forest Ave., Western  
An Extended-Capability Algorithm for Springs 60558  
Efficient Clump Derivation

Milner, James Michael 17 Lyons Twp. H.S. 4530 Clausen Ave., Western  
Series of Computer Programs to Analyze Springs 60558  
Movement of Surface Highs and Lows Relative to the  
Five Hundred Millibar Level

Norby, Richard James 17 Lyons Twp. H.S. 337 Blackstone Ave. 60525  
Protein Decomposition in Putrefactive Meat

Soria, Steven Michael 17 Lyons Twp. H.S. 5028 Fair Elms Ave., Western  
Derivation of a General Conic Equation Springs 60558

Tiemstra, John Peter 17 Lyons Twp. H.S. 6543 Pontiac Dr. 60525  
Transmission of Moisture Through Fats

Libertyville \*Lundberg, Mary Diane 17 Libertyville H.S. Rt. 1, Box 160 60048  
Growing Plants Under Different Conditions

Marion Souza, James Herbert 17 Marion Sr. H.S. 814 N. Market St. 62959  
Investigation Into Planar Graphs

Niles Biba, Kenneth Jerome 17 Notre Dame H.S. for Boys 7725 W. Sherwin,  
Photometric Analysis of the Cepheid Chicago 60648  
Variable, *Zeta geminorum*

Skokie Goldman, Alan Neal 18 Niles Twp. H.S. East 8316 E. Prairie Rd. 60076  
Biomagnetic Phenomena in Radishes

Goodman, Corey Scott 16 Niles Twp. H.S. North 4020 Greenleaf Ave.  
Studies of Germ Cells of Male Mice 60076

Greenspan, Bennett Steven 17 Niles Twp. H.S. North 8819 Lowell Ter.  
Host Versus Skin Graft Tolerance Using Cellular and Complement Blockage 60076

Fried, David Shane 16 Niles Twp. H.S. West 7219 Keeler Ave., Lincoln-  
A Generalization of Results for Positive Integers t wood 60646

Iverson, William Oliver 17 Niles Twp. H.S. West 8840 Major Ave.,  
An Indication of a Symbiotic Relationship of Morton Grove 60053  
Zoochlorella to *Chlorohydra viridissima*

\*Karson, Evelyn Marlene 17 Niles Twp. H.S. West 3845 Jarvis Ave.,  
Light Energies in Photosynthesis Lincolnwood 60645

\*Novak, Leila 16 Niles Twp. H.S. West 6944 N. Kedvale Ave., Lincoln-  
Effects of Gamma Rays on the Growth of wood 60646  
*Phaseolus vulgaris*

Washington Guth, Robert Wayne 17 Washington Community H.S. RR 1, Box 261,  
Weather Effects on Bird Migration Eureka 61530

Waukegan \*Griggins, Cynthia Celeste 17 Holy Child H.S. 1031 Glenwood Ave. 60085  
A Kinetic Study of the Infection Process of *E. coli* by Q/Beta

#### INDIANA

Evansville Graham, Stephan Alan 17 North H.S. 215 Fernwood Dr. 47711  
Geology and Paleontology of the Alum Cave Limestone and  
Related Rocks in Warrick County, Indiana

Gibson, Robert Bradford 17 William H. Harrison H.S. 8242 Maple Lane  
Effects of Uneven Cathode Temperature on Electron Beam Characteristics 47711

Indianapolis Lamb, Bruce Elliott 17 Brebeuf Preparatory School 7324 Steinmeier Dr.  
Tissue Distribution in Rats of Intraperitoneally 46250  
Injected Radioactive Stannous Chloride

Muncie \*Baker, April Dean 17 Muncie Central H.S. 2904 N. Tillotson Ave. 47304  
Isolation of Two Native Forms of Bovine Plasminogen

Portland \*Settle, Betty Sue 18 Portland H.S. RR1, Keystone 46759  
Limnological Study of a Farm Pond

Terre Haute Dvorak, Daniel Louis 17 Schulte H.S. 2224 N. 26th St. 47804  
Simulation Translator

#### IOWA

Bettendorf \*Bandy, Beverly Ann 17 Bettendorf H.S. 2201 18th St. 52722  
Patterns of Repeating Decimals

Newton Huston, Michael Alan 17 Newton Sr. H.S. Rt. 4 50206  
Study of Mammary Tumors in Mice

Waterloo Bloomfield, Kenneth Howard 17 East H.S. 2571 Logan Ave. 50703  
General Rule for Solving a Class of Algebraic Problems

#### KENTUCKY

Bardstown \*Willett, Prudence Carlile 17 Bethlehem H.S. 120 Hillcrest Dr. 40004  
Free Radical Carbon Skeletal Rearrangements

#### LOUISIANA

Alexandria \*Moore, Katherine Lorraine 17 Holy Savior Menard Central H.S. 3216  
Estimation of Urease Activity, Skyline Dr., Pineville 71360  
Using Urea as a Substrate

Lake Charles \*Crossley, Norma Therese 17 La Grange Sr. H.S. 2706 7th Ave. 70601  
Autonomous Production of Bacteriophage in a Substrain of  
*Azotobacter vinelandii*

New Orleans Hebert, André Lane 17 Benjamin Franklin Sr. H.S. 2312 Lake Oaks  
Synthesis and Photolysis of p-N,N-Diethylamino- Parkway 70122  
benzenediazonium Fluorophosphate

#### MAINE

Mechanic Falls \*Kirk, Kathleen Ellen 16 Mechanic Falls H.S. 7 Grove St. 04256  
Kinetics of Myeloid Erythropoiesis During Pregnancy  
in Splenectomized Mice

#### MARYLAND

Bethesda \*Fitzwater, Susan Jane 17 Bethesda-Chevy Chase H.S. 8419 Lynwood Pl.,  
Growth of *Chlamydomonas* on a Mineral Chevy Chase 20015  
Nutrient Solution

Martin, Neil Fred 17 Bethesda-Chevy Chase H.S. 8814 Lanier Dr.,  
Original Research and Design Procedures Silver Spring 20910  
Resulting in a Variable Camber and Thickness Airfoil

Teixeira, Ruy Antonio 16 Bethesda-Chevy Chase H.S. 2208 Colston Dr.,  
Separation of Krebs Cycle Acids in the Silver Spring 20910  
Blood of Baboons in Snock by Partition Column Chromatography

\*Wolff, Gretchen Angela 17 Walt Whitman H.S. 5405 Albia Rd., Washington,  
Three-Value Propositional Logic D.C. 20016

Hyattsville \*Good, Catherine Ann 17 Northwestern Sr. H.S. 6908 Wells Parkway 20782  
Game Strategy

Middletown \*Falkenstein, Kathy Fay 17 Middletown H.S. Rt. 1, Myersville 21773  
Amino Acid Assay or A<sup>3</sup>

Silver Spring Schechter, Eric 17 Springbrook H.S. 1015 Robroy Dr. 20903  
Elementary Number Theory Properties of Matrices

#### MASSACHUSETTS

Braintree Martin, Steven Smalley 17 Thayer Academy 64 Union St., Rockland 02370  
Spectroscopic Analysis of Reduction Sensitization  
in Silver Bromide Emulsions

Fall River Los, Edward Joseph 16 B. M. C. Durfee H.S. 298 Tecumseh St. 02721  
Phototaxis of *Lebistes reticulatus*

Holden \*Greis, Noel Peyton 16 Wachusett Reg. H.S. 18 Lowell Ave. 01520  
Experiments With Schooling Tendencies of *Notropis*  
*atherinoides* and *Fundulus heteroclitus*

Lexington \*Margolskee, Jeanne Phyllis 17 Lexington H.S. 23 Peachtree Rd. 02173  
Mode of Action of the Brachymorphic Gene in the Mouse

Natick Flood, Roger Donald 17 Natick H.S. 38 Beacon St. 01760  
A Chemical Molecular Beam Detector

Newton \*Poplin, Elizabeth Ann 17 Newton South H.S. 30 Voss Ter. 02159  
Biochemical Changes Observed During Silk Retention  
by *Bombyx mori*

Primack, Richard Bart 18 Newton South H.S. 16 Stiles Ter. 02159  
Effect of Various Doses of Melatonin on the Weight of Reproductive  
Organs and Adrenal Glands in Two Inbred Strains of Mice

North Washington, Lawrence Clinton 16 Dartmouth H.S. 7 Longview Dr. 02747  
 Dartmouth Circular Analytic Geometry  
 Revere \*Serighelli, Ann Marie Palma 17 Revere H.S. 44 Emanuel St. 02151  
 Effect of Pteroylglutamic (Folic) Acid Analogs on Growth of Strains  
 of *Streptococcus faecalis* Sensitive and Resistant to Amethopterin  
 Salem Soo Hoo, Richard 17 Salem H.S. 21 North St. 01970  
 Some Aspects of the Synthesis of Heterocyclic Compounds  
 Springfield Crescenzo, Paul Francis 17 Technical H.S. 80 Ashland Ave. 01119  
 Experimentation With a Simple Radio Telescope  
 and Three-Meter Interferometer  
 Sudbury \*Li, Winifred I-Bin 17 Lincoln-Sudbury Reg. H.S. Huckleberry Hill,  
Lincoln 01773  
 Respiration Rate of Chicken Eggs  
 Westwood Enberg, Peter Kenneth 17 Westwood H.S. 1537 High St. 02090  
 Effects of Nearly Continuous Low-G Centrifugation  
 on Bean and Pea Plants  
 Harding, Leslie Colt 17 Westwood H.S. 154 Cobleigh St. 02090  
 Snow and Ice Crystals

#### MICHIGAN

Ann Arbor Allen, Douglas Ralph 17 Ann Arbor H.S. 365 Sumac Lane 48105  
 Culture of Excised Plant Tissue  
 Barnes, John Robert 17 Ann Arbor H.S. 2942 Verle 48104  
 A Generalization of Pascal's Triangle  
 Cohen, Joel David 17 Ann Arbor H.S. 1339 Arella 48103  
 Optimum Strategies for a Game  
 \*Cole, Jennifer Lou 18 Ann Arbor H.S. 1825 Pauline Blvd. 48103  
 Development of the Ventral Diverticulum in *Drosophila melanogaster*  
 Fajans, Peter Stefan 17 Ann Arbor H.S. 2485 Devonshire 48104  
 Effects of Varying the Training Stimulus in Learning  
 and Memory of Goldfish  
 Detroit Mahr, Christopher Leslaw 17 Catholic Central H.S. 7108 Hartwell,  
Dearborn 48126  
 Study of a Vortex  
 \*Laudenbach, Bonnie Lou 17 Dominican H.S. 10744 Somers 48224  
 Effects of Varying Types of Visible Light Exposure  
 Subsequent to Ultraviolet Radiation on *Saccharomyces cerevisiae*  
 Moss, Charles Douglas 17 Henry Ford H.S. 20271 Kentfield 48219  
 An Experimental Approach to Martian Biology  
 Farmington Spence, William Leonard 17 Farmington H.S. 31632 Marblehead 48024  
 Algebra of Baryon Fields  
 Hamtramck Dolyniuk, Myron Walter 17 Immaculate Conception H.S. 19138 Wexford,  
Detroit 48234  
 Radioautographic Determination of the  
 Intermittent Cycle in S-180 Cells Grown *in vitro*  
 Livonia \*Bruzda, Cynthia Christine 17 Ladywood H.S. 41385 Crestwood Dr.,  
Plymouth 48170  
 Effects of Benadryl and Dexedrine on the  
 Active Transport System of Microorganisms  
 Pontiac \*Plaicher, Christina Michaela 17 Waterford Twp. H.S. 355 Riviera 48054  
 Amino Acid Content and Regenerative Properties of  
*Planaria Dugesia trigrina*  
 Sturgis \*Smith, Diana Sue 17 Sturgis H.S. 620 N. Prospect 49091  
 Effect of X-Rays on the Regeneration of *Planaria*

#### MINNESOTA

Robbinsdale Deichert, Robert George 16 Robbinsdale Sr. H.S. 2365 Brookridge Ave.,  
Minneapolis 55422  
 Launching and Recovery of a Rocket  
 Which Had a Mouse for Its Payload

#### MISSOURI

Chesterfield \*Born, Eugenia Elizabeth 18 Parkway Sr. H.S. 916 Woodshire Lane, St.  
Louis 63141  
 Effects of Hippocampal Lesions on Behavior of Mice  
 Palmyra Litchfield, David Bernard 17 Palmyra H.S. 407 S. Dickerson 63461  
 Graphing in Four Dimensions

#### MONTANA

Deer Lodge Jovick, Robert Louis 17 Powell County H.S. 323 Center St. 59722  
 Conformity Behavior and Group Cohesiveness in Adolescents

Harlem \*Rowe, Cheryl Dawn 17 Harlem H.S. Ft. Belknap Agency 59526  
 Artificial Pressures Affecting Animal Populations

#### NEBRASKA

Omaha Boguchwal, Lawrence Allen 17 Omaha Central H.S. 5815 Hamilton 68132  
 Experiments in Imbedded Numerals

#### NEVADA

Las Vegas Constanten, Carl Philip 16 Edward W. Clark H.S. 1650 Michael Way  
Celestial Radio Emission in the 68 cm Region 89108

#### NEW JERSEY

Bound Brook Kaselis, Peter Vincent 17 Bound Brook H.S. 148 W. Franklin St. 08805  
 Resistance of House Flies to Various Insecticides  
 Highland Park \*Molony, Barbara Ann 17 Highland Park H.S. 464 Lincoln Ave. 08904  
 Application of Algebraic Principles to Geometry  
 Jersey City \*Pedrido, Renée Ramona 16 Henry Snyder H.S. 93 Svcamore Rd. 07305  
 Osmosis and the Ideal Gas Laws  
 Livingston Schifferes, Stephen Arthur 17 Livingston H.S. 92 Belmont Dr. 07039  
 Visual Discrimination of Numbers in Man: Some Attitude Vectors  
 Tsien, Roger Y. 15 Livingston H.S. 11 Browning Dr. 07039  
 Bridge Isomerism in Transition-Metal Thiocyanate Complexes  
 Long Branch Cooper, Stephen Douglas 17 Long Branch H.S. 592 Irving Pl. 07740  
 Effects of Insecticide on Mortality Rate of *Artemia salina*  
 New Shrewsbury Cooper, Gerald Alan 17 Monmouth Reg. H.S. 40 Cloverdale Cir. 07724  
 Metamorphic Changes in the Serum Proteins of  
*Rana pipiens* Studied by Disc Electrophoresis

#### NEW MEXICO

Las Vegas Krutzner, Otto Albert, Jr. 18 Robertson H.S. 1814 8th St. 87701  
 Relationship of Etch Pits to Crystal Symmetry

#### NEW YORK

Albany Sofia, John William 17 Colonie Central H.S. 1 Breeman St. 12205  
 Experiments With a Homemade Particle Accelerator  
 Brooklyn Cohn, Jonathan Allen 16 James Madison H.S. 80 Whitman Dr. 11234  
 A More Generalized Trigonometry Based on a Unit  
 Ellipse Rather Than a Unit Circle  
 Goldfinger, Stephen Mark 16 James Madison H.S. 3138 Kings Highway  
11234  
 Effects of Toothpaste on Oral Bacteria  
 Mann, Douglas Gordon 16 James Madison H.S. 412 Mayfair Dr. 11234  
 Determination of Concentration of Acids-Amperometry  
 Newfield, Stanley Austin 16 James Madison H.S. 1639 E. 27th St. 11229  
 Use of Resins for Separation of Closely Related Metallic Ions  
 Schiff, Jack Arthur 16 James Madison H.S. 2416 E. 64th St. 11234  
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The forty Washington trip winners of the 27th Annual Science Talent Search, among whom \$67,500 of Westinghouse Science Scholarships and Awards will be distributed, represent about 1 3/4% 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 28 through March 4, 1968, 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 35 cities in 17 states. They were picked by the judges from among 23,471 contestants of whom 2,323 completed their entries by taking a science aptitude examination, obtaining recommendations and writing a report on their science project. Completed entries were received from 48 states and the District of Columbia.

Of the 40 Twenty-seventh Annual Science Talent Search Winners, 38 ranked in the top 5% of their graduating class and 20 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 27.3% 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

### CALIFORNIA

Berkeley \*Monger, Teresa Grace 17 Presentation H.S. 1504 Elm St., El Cerrito 94530  
Granada Hills Vieck, David Joseph Alan 17 Granada Hills H.S. 17056 Rinaldi St. 91344  
Long Beach Waddington, Bruce Alan 17 Robert A. Millikan H.S. 5471 E. Hill St. 90815  
Oakland Fong, George 17 Oakland H.S. 938 E. 28th St. 94610  
San Diego \*Parsons, Penelope Jo 17 Point Loma H.S. 625 Rosecrans 92106

### CONNECTICUT

Avon \*Sherman, Kathleen Ann 17 Avon H.S. 37 Cider Brook Rd. 06001

### DELAWARE

Wilmington Haden, Keith Wightman 17 Henry C. Conrad H.S. 1 Lynbrook Rd. 19804

### FLORIDA

Fort Lauderdale Hanni, Richard Squier 17 Nova H.S. 1112 Wyoming Ave. 33312  
Jacksonville Ralston, Glenn Myron 17 Terry Parker H.S. 5756 Holly Bell Dr. 32211

### ILLINOIS

Chicago \*Piechocka, Sylvia 16 Wells H.S. 1801 W. Superior St. 60622  
Niles Biba, Kenneth Jerome 17 Notre Dame H.S. for Boys 7725 W. Sherwin, Chicago 60648  
Washington Guth, Robert Wayne 17 Washington Community H.S. RR 1 Box 261, Eureka 61530

### INDIANA

Evansville Graham, Stephan Alan 17 North H.S. 215 Fernwood Dr. 47711

### MARYLAND

Bethesda Martin, Neil Fred 17 Bethesda-Chevy Chase H.S. 8814 Lanier Dr., Silver Spring 20910

### MASSACHUSETTS

Holden \*Greis, Noel Peyton 16 Wachusett Reg. H.S. 18 Lowell Ave. 01520  
Lexington \*Margolskee, Jeanne Phyllis 17 Lexington H.S. 23 Peachtree Rd. 02173  
Newton \*Poplin, Elizabeth Ann 17 Newton South H.S. 30 Voss Ter. 02159

### MICHIGAN

Ann Arbor Fajans, Peter Stefan 17 Ann Arbor H.S. 2485 Devonshire 48104  
Detroit Moss, Charles Douglas 17 Henry Ford H.S. 20271 Kentfield 48219  
Farmington Spence, William Leonard 17 Farmington H.S. 31632 Marblehead 48024

### NEVADA

Las Vegas Constanten, Carl Philip 16 Edward W. Clark H.S. 1650 Michael Way 89108

### NEW JERSEY

Livingston Schifferes, Stephen Arthur 17 Livingston H.S. 92 Belmont Dr. 07039  
Tsien, Roger Y. 15 Livingston H.S. 11 Browning Dr. 07039

### NEW YORK

Brooklyn Kanof, Philip David 16 Midwood H.S. 125 Ocean Parkway 11218  
Forest Hills Goldsmith, John Anton 16 Forest Hills H.S. 6774 Dartmouth St. 11375  
Gomori, John 17 Forest Hills H.S. 102-25 67th Rd. 11375  
White, Perrin Charles 17 Forest Hills H.S. 73-37 Austin St. 11375  
Jamaica \*Epstein, Rochelle Lory 16 Jamaica H.S. 176-60 80th Rd. 11432  
Levittown Zeldis, Jerome Bernard 17 Division Avenue H.S. 44 Furrow Lane 11756

### OHIO

Cincinnati \*Seremetis, Stephanie Valerie 16 The College Preparatory School 6670 W. Beechlands Dr. 45237  
Rocky River \*Lad, Mary Clare 16 Magnificat H.S. 3555 Rocky River Dr., Cleveland 44111