

Greybull

WYOMING

- \*Edwards, Kathleen Margaret 18 Greybull H.S. P. O. Box 35, Emblem  
Determination of pH Values With Natural Indicators 82422  
\*Temme, Charlotte Ada 18 Greybull H.S. Emblem Rt. 82426  
Effects of Changing the Physical Environment of Plants  
and Seeds

\* \* \* \* \*

## HONORS GROUP

IN

# THE 28th ANNUAL

## *Science Talent Search<sup>®</sup>*

for the  
**Westinghouse Science Scholarships  
and Awards**

1969



**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 8, 1969, 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 81 girls and 219 boys. The girls determine their own chances in the Science Talent Search in accordance with the number that enter. Of the Honors Group, 68.0% of the boys and 65.4% 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 22, 1969

## Honors Group

### in the Twenty-eighth Annual Science Talent Search<sup>®</sup>

\* Indicates girls  
H. S. indicates High School  
Title of project report submitted is on next line

#### ALABAMA

Decatur \*Yates, Andrea Jane 18 Austin H.S. 1708 Vinca St., S.W. 35601  
Occurrence of Haptoglobin in Cord Blood Serum and Its Quantitation of Immunodiffusion and Typing by Disc Electrophoresis  
Moulton Waters, Johnny Arlton 17 Lawrence County H.S. 512 Coffey St. 35650  
Growth and Functional Morphology of Mississippian Blastoid Genus Pentrenites

#### ARIZONA

Phoenix Manoil, Colin Christy 17 Central H.S. 5655 N. 4th St. 85012  
Comparison of Immunofluorescence Between Parent Cultures and Progeny Clones in Burkitt Lymphoma Cell Lines

#### CALIFORNIA

Albany Ganong, William Francis III 17 Albany H.S. 710 Hillside Ave. 94706  
Generalized Langford Problem  
Atherton Beach, Robert Ernest 17 Menlo-Atherton H.S. 796 6th Ave., Redwood City 94063  
Search for Pt(III) as an Intermediate in Redox Reactions  
Berkeley \*McCreery, Alice 17 Menlo-Atherton H.S. 99 De Bell Dr. 94025  
Effect of Acute Stress on Blood Cholesterol  
\*Catonico, Lynne Dianne 17 Presentation H.S. 22 Lenox Rd. 94707  
Effects of Nicotinamide Derivative on Tumor Regression in Mice  
\*Lopez, Veronica 17 Presentation H.S. 601 Spruce St. 94707  
Regular Homotopies of Spheres and Tori

Danville Phillips, Robert Alan 17 Monte Vista H.S. 263 Via Cima Ct. 94526  
Development of Procedure for Qualitative Analysis of Vanadium  
Los Angeles Brodie, Howard Robert 17 Hamilton H.S. 1657 S. Bedford St. 90035  
Phage Site Competition in B. subtilis  
Grenzeback, Ian McLaren 17 Hamilton H.S. 2716 Manning Ave. 90064  
Growth of Stimulatory Hormones as Related to Tumor Inducing Principle in Crown Gall

Hattori, Vernon Takao 17 Hamilton H.S. 3605 Glendon Ave. 90034  
Trans-Alpha-Glucosylase: A Possible New Sequence in Haemostatic Cascade  
Pasadena Schlueter, Paul Scott 17 Pasadena H.S. 449 Theresa La., Sierra Madre 91024  
Reciprocating, Variable Stroke and Frequency Pneumatic Engine

Richmond Jackson, Edward J. III 16 John F. Kennedy H.S. 2339 Alva, El Cerrito 94530  
Cholesterol in Chicken Eggs: Effects of Age, Fertility and Refrigeration

San Diego Gjerset, George Frank 16 Point Loma H.S. 4322 Hill St. 92107  
Axiomatic System for a Geometry Describing Motion  
San Francisco Zeligs, Joseph Harvey 16 Lowell H.S. 3941 Washington St. 94118  
Aerodynamics of Insect Flight

Santa Monica \*Fourre, Kathleen Mary 17 St. John's Ursuline H.S. 729 Edinburgh St. 94112  
Weight Perception

Torrance Pekary, Allan Dale 18 Santa Monica H.S. 838 Pacific St. 90405  
Ontogeny of Protein Synthesis Activation at Fertilization

Watsonville Matthews, William Charles 17 South H.S. 5102 Mindora Dr. 90505  
Growth of Yeast Cells on Crude Oil Fractions: A Possible Source of Protein

Nitao, John Jun 18 Watsonville H.S. 137 Lawrence Ave. 95076  
Research in Theory of Finite Differences

Woodland Hills	Linthicum, D. Scott 17 W. H. Taft H.S. <u>4765 Queen Victoria Rd.</u> 91364 Occurrence and Production of Serum Antibodies in <u>Eptatretus stoutii</u>	Shippey, Michael Allen 17 Radford H.S. <u>1490 Lehla St.</u> 96818 Incidence of Anti-Gamma Globulin Factor in Japanese Male Population of Honolulu
	COLORADO	*Nakamura, Joyce Kazuko 17 University Laboratory School Effects of Humidity and Temperature <u>3330 Monsarrat Ave.</u> 96815 on Ecolysis of Eggs of the Southern Green Stink Bug
La Junta	McGinnis, Woody Ron 18 La Junta H.S. <u>26 Yucca Rd.</u> 81050 Antibacterial Agents From Mollusks	Lim, John Soo Wan 17 W. R. Farrington H.S. <u>2028 Alewa Dr.</u> 96817 Effect of Environment on Sanitary Conditions of Marine Waters
Montrose	Hauser, Neil Ray 17 Montrose H.S. <u>Rt. 3, Box 152</u> 81401 Exploring Weak Interactions and Particles in a Periodic System Based on the Fourth Dimension	
	CONNECTICUT	IDAHO
Branford	Angeloff, Peter Theodore 17 Branford H.S. <u>DeForest Dr.</u> 06405 Ability of Azathymine, an Analogue of Thymine, to Serve as a Growth Factor for <u>Escherichia coli</u> Bacteriophage T4 <u>td 8</u>	*Orr, Jennie Marie 16 Coeur D'Alene Sr. H.S. <u>1321 Montana Ave.</u> 83814 Toward the Least Upper Bound on $P_4$ in Four Realizable Sequences
Pawcatuck	Camp, David Duane 16 Stonington H.S. <u>Cove Rd.</u> , Stonington 06378 Polyomino Generation - An Indirect Approach	ILLINOIS
Thompsonville	Janirgowicz, Charles Kenneth 18 Enfield H.S. <u>20 Longview</u> , Hazardville Design and Construction of a Single Sideband Generator <u>06036</u>	Weinberg, Richard Norman 17 Bowen H.S. <u>8949 Phillips</u> 60617 Alteration of Host Specificity of Bacteriophage DNA
Willimantic	Beck, Henry Manville 17 Windham H.S. <u>Columbia Lake, Columbia</u> 06237	Nichols, George 16 Lane Technical H.S. <u>1540 N. Menard</u> 60651 Geometric Series With Multiple Ratios
	FLORIDA	*Keilitz, Alice Arshaloos 17 Roger C. Sullivan H.S. <u>6921 N. Ridge Ave.</u> Immunochemical Study of Microsomal Subfractions <u>60645</u>
Coral Gables	Mitter, Donald Lee 17 Coral Gables Sr. H.S. <u>325 Ridgewood Rd.</u> , Key Preliminary Analysis of Morphology and <u>Biscayne</u> 33149 Speciation in the Carangid Fish Genus Vomer	Lederman, Howard Mark 16 Roger C. Sullivan H.S. <u>1324 W. Sherwin</u> Relative Resistance of Streptococci to X-Rays <u>60626</u>
Fort Lauderdale	Whittaker, John Douglas 18 Nova H.S. <u>7201 N.W. Ninth St.</u> , Plantation Area of Euler Graphs <u>33313</u>	Block, Martin Lee 17 Roosevelt H.S. <u>4935 N. Hamlin Ave.</u> 60625 Pythagorean Theorem in Other Dimensions
Hialeah	Ellis, Arthur Baron 17 Hialeah H.S. <u>1300 W. 82nd St.</u> 33014 Mathematical Interpretation of Chess	Laiderman, Richard Alan 18 Deerfield H.S. <u>221 Pine St.</u> 60015 Effect of Osmolarity on Rumen Cellulose Fermentation in Sheep
Jacksonville	Mason, William Thomas III 17 Terry Parker H.S. <u>6712 Buttontree Ct.</u> Radiochemical Studies on the Subcellular Effector Site <u>32211</u> of the Toxin Isolated From the Sea Anemone, <u>Metridium senile</u>	Reinhart, Gregory Duncan 17 Maine Twp. H.S. <u>2450 Dale St.</u> 60018 Investigation of the Lead (II) Nitrate-Potassium Chromate Water System
	Messer, Philip Russell 17 Terry Parker H.S. <u>4128 Ferber Rd.</u> 32211 Relationship of Ionizing Radiation to Chromosomal Aberrations	Curnutt, John Tolliver III 17 Dixon H.S. <u>810 S. Galena Ave.</u> 61021 Tetrazolium Test for the Diagnosis of Significant Bacteruria
Miami	Patrinley, Christopher Dean 17 Terry Parker H.S. <u>934 Chapeau Rd.</u> Nocturnal Minimum Temperature Forecasting With <u>32211</u> Parabolic Reflector and Temperature Curves	*Lauridsen, Jan Carla 17 Thornridge H.S. <u>14844 Woodlawn</u> 60419 The Stomatat Clock
	Guterman, Andrew 17 Miami Norland Sr. H.S. <u>1710 N.W. 179th St.</u> , Opa- Study of the Conversion of Estradiol-17 $\beta$ <u>Locka</u> 33054 to Estrone in Rat Skin	McGinness, James Edward 17 Thornridge H.S. <u>1233 King Circle, South</u> Chemical Origin of Life <u>Holland</u> 60473
North Miami	Guitarte, Miguel Guillermo 17 Miami Sr. H.S. <u>815 N.W. 24th Ct.</u> 33125 Teratogenic Effects of Anesthetics on Fetuses	Moeller, Martin Lee 17 Elgin Academy <u>205 S. Linden</u> , Elffingham 62401 Confirmation of the Talbot Plateau Law for Extremely Short Pluses of Light
	Jarvinen, Gordon Dennis 17 North Miami H.S. <u>301 N.E. 150th St.</u> 33161 Analysis of Bone Growth in Chicken Embryos	McGee, Harold James 17 York Community H.S. <u>602 E. Park Ave.</u> 60126 An Attempted Verification of a Stellar Polarization-Mechanism Theory
	Makela, Eugene Hendrik 17 North Miami H.S. <u>1340 N.E. 134th St.</u> 33161 Base Ratio of Mutant DNA	Chatem, Mark Lawrence 17 Evanston Twp. H.S. <u>2228 Madison Pl.</u> 60202 Complexes of Copper and Mercury With Thioacetamide
	GEORGIA	Dorfman, Marc Bernard 16 Evanston Twp. H.S. <u>1620 Monroe St.</u> 60202 Electrochemical Cell Potentials and pH
Athens	Warren, Robert Wells 17 Athens H.S. <u>115 Terrell Ct.</u> 30601 Evaluation of Speed Systems of Basic Mathematics	Fox, Steven Henry 17 Evanston Twp. H.S. <u>1103 Sheridan Rd.</u> 60202 Relative Ligand-Field Strengths of the Halides by Spectral Absorption
Brunswick	*Gardner, Laura Elyse 18 Glynn Academy <u>1151 Peachtree St.</u> , St. Simons Effects of Varied Stimuli on the Hydronic Signals of <u>Island</u> 31522 the Hemichromis fasciatus	Lavey, Elliott Bruce 17 Evanston Twp. H.S. <u>8935 N. Tamara Terrace</u> , Simulation of Fluid Transport Due to <u>Skokie</u> 60076 Segmentation in the Small Intestine
College Park	Withers, Larry Dale 17 Lakeshore H.S. <u>4277 Janice Dr.</u> 30337 Body Fluid Change and Enamel Rehardening of Saliva in the Dog	Leidig, Mark Edward 17 Evanston Twp. H.S. <u>741 Brummel</u> 60202 Geological Stream Improvement for Fishing
Glennville	Drake, Charles Edward 17 Glennville H.S. <u>707 Marietta St.</u> 30427 Effects of Albumins Exchange on the Plumage	Foerster, Charles Arthur 18 Eastridge H.S. <u>31 Strasma Dr.</u> 60901 Quantitative Analysis of the Interaction Between Human Blood Low-Sensity Lipoproteins and Terramycin
Warner Robins	Cornish, John Devin 17 Warner Robins H.S. <u>2800 - 103 Arlington Dr.</u> , Role of RNA in the Memory Process <u>Alexandria, Va.</u> 22306 of Mice	*Klein, Hilda Fritzie 17 Eastridge H.S. <u>1090 Duane Blvd.</u> 60901 pH Responses of the Magnesium-Independent Pyrophosphatase With Lipid Modification
Honolulu	Liu, Edmund Kin Sing 17 McKinley H.S. <u>2112 Mahalo St.</u> 96817 Synthesis and Characterization of Transition Metal Complexes of N-(2-mercaptoethyl)-2-(2-aminoethyl)pyridine	Bump, Thomas Eiting 17 Lyons Twp. H.S. <u>5341 Central Ave., Western</u> Computer-Aided Diagnosis <u>Springs</u> 60558

Fischer, David Michael 17 Lyons Twp. H.S. 629 Courtland Circle,  
 Sound Mapping Western Springs 60558  
 McDaniel, William Cherry 17 Lyons Twp. H.S. 321 S. Watota Ave. 60525  
 Cavitation of Submerged Marine Propulsion Devices  
 Pfendt, Glenn Niel 17 Lyons Twp. H.S. 4124 Howard Ave., Western  
 Bonding Glasses to Metals Springs 60558  
 Werner, Charles William 17 Lyons Twp. H.S. 322 Blackstone 60525  
 Experimental Electronic Graphing Apparatus  
 Libertyville Docauer, David Michael 18 Libertyville H.S. 228 E. Sunnyside Ave.  
 Effects of Detergent on Paramecium 60048  
 Oak Lawn Dykstra, Clifford Elliot 16 Oak Lawn Community H.S. 5425 W. Otto Pl.  
 Chloro Complexes of the Copper (II) Ion 60453  
 Orland Park \*Gay, Martha Lynn 17 Cart Sandburg H.S. 7905 W. 127th St., Palos  
 Breakdown of Cholesterol Into Bile Salts as Park 60464  
 Related to Saturated and Unsaturated Fats in  
 the Diets of Rats  
 Skokie Valenta, Arydas Marcellus 16 Carl Sandburg H.S. 11649 S. 83rd Ave.,  
 Pseudorabies Effect in Swine and Mice Palos Park 60464  
 Cohen, Leslie Robert 17 Niles Twp. H.S. North 4111 W. Greenwood  
 Possible Genetic Linkage for the Non - H-2 60076  
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 Lurie, David Phillip 17 Niles Twp. H.S. North 9330 N. Lockwood 60076  
 Preliminary Investigation of Charge Separation by *E. coli*  
 Quateman, Jeffrey Heller 17 Niles Twp. H.S. North 9526 N. Kedvale Ave.  
 Molecular Weight Determination of Denatured DNA 60076  
 by Column Chromatography  
 Chow, Alan Yeh Kwon 16 Niles Twp. H.S. West 8929 Mansfield Ave.,  
 Phytochrome Mediated Bioelectric Potentials Morton Grove 60053  
 in Root Tips of Dark Grown Mung Bean Seedlings  
 Shih, Willy C. 17 Niles Twp. H.S. West 9047 N. Mango Ave., Morton  
 Kinetics of an Ionic Reaction - Effects of Grove 60053  
 Varying Ionic Strength and Temperature  
 Wheeling Dentley, David Robert 18 Wheeling H.S. 101 Wolf Rd., Prospect Heights  
 Liesegang Phenomena 60070

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Clayton \*Smith, Sharon Lee 18 Cascade H.S. R.R. 2, Box 174 46118  
 Characterization of East German Fossil Chlorophyll  
 Elkhart Oliver, Richard Dennis 17 Elkhart H.S. 1015 Markle Ave. 46514  
 The Resistance of an Electrolytic System  
 Indianapolis O'Leary, Timothy Joseph 16 Brebeuf Jesuit Preparatory School  
 Effects of Cortisone Acetate on 1121 Canterbury Sq. S. 46260  
 Hemopoiesis, the Hemopoietic Organs  
 and Growth Rate of Young Rats  
 Scamahorn, James Oscar 17 Brebeuf Jesuit Preparatory School 130 E.  
 Mechanism of Puromycin Action in Main, Pittsburg 46167  
 Activation of Hepatic Glycogen Synthetase  
 Jasper Utland, Michael James 17 Jasper H.S. Box 333 47546  
 Design and Application of Fluid State Devices  
 Sellersburg \*Burton, Gayle Patrice 17 Silver Creek H.S. 16 Maple St., Speed 47172  
 Solubility Tests With Acrylic  
 Terre Haute Jersey, Thomas Arthur 17 Honey Creek H.S. 1001 Royce Ave. 47802  
 Electrocardiogram of a Daphnia

**IOWA**

Bettendorf \*Gaberdiel, Lynne Kay 18 Bettendorf H.S. 3003 Oxford Dr. 52722  
 Separation of Geometric Isomers Using a Gas  
 Chromatograph  
 Vinton Bach, Ronald Ray 17 Washington H.S. Box 156 Urbana 52345  
 Antinatriuretic Action of Growth Hormone  
 KANSAS  
 Wichita Frenstey, William Robert 18 Wichita Southeast H.S. 7333 Rockwood Rd.  
 Holography 67206

**KENTUCKY**

Glasgow Nance, William Mitchell 17 Glasgow H.S. 107 Grinstead Ct. 42141  
 Effects of Gonadal Transplantation With Hormone  
 Supplement on Secondary Sex Characteristics in Male  
 and Female Chickens  
 Lebanon \*Thompson, Suzanne Marie 17 St. Charles H.S. Rt. 2, Box 59 40033  
 Estimation of Vitamin C in Fruit Juices  
 Owensboro Bowers, Timothy John 18 Daviess County H.S. 2415 Leigh Count Dr.  
 Effects of Triiodothyronine on the Learning and 42301  
 Memory Capacity of Hamsters

**MAINE**

Biddeford Boston, Daniel Andrew 17 St. Louis H.S. 131 Pool St. 04005  
 Investigation of Controlled Oscillation of Ion Enriched  
 Flame

**MARYLAND**

Baltimore Jaslow, Lee 17 Baltimore Polytechnic Institute 3608 Clark's La. 21215  
 Random Numbers  
 Silverstein, Charles Edward 17 Milford Mill H.S. 3831 Kitburn Rd.,  
 In vitro Study of the Factors Determining Randallstown 21133  
 Protein Production in Mouse Spleen Cells  
 Bethesda Schutzman, Howard Bruce 17 Bethesda-Chevy Chase H.S. 5110 Edgemoor  
 An Arithmetic of Base Negative Two La. 20014  
 Oxon Hill Anderson, Harry Robert 17 Potomac Sr. H.S. 5019 26th Ave., Hillcrest  
 Effects of a Magnetic Field on Cytoplasmic Heights 20031  
 Streaming  
 Hansen, Thor Arthur 17 Potomac Sr. H.S. 5405 Wheeler Rd. Washington  
 Fossils of the Strasburg Area D.C. 20021  
 Silver Spring \*Goldberg, Lise Adele 17 John F. Kennedy H.S. 707 Stonington Rd. 20902  
 A Technique for the Detection and Quantitative Determination  
 of Deoxyribonucleic Acid in Plasma  
 Fenstermacher, Thomas Edward 17 Springbrook H.S. 906 Winhall Way  
 Model Rocket Altitude Calculations 20904  
 Fowler, Lee Alten 17 Springbrook H.S. 1700 Priscilla Dr. 20904  
 Determination of Age of Mica With Fossil Fission  
 Tracks  
 Schaffert, Justin Craig 17 Springbrook H.S. 1039 Cresthaven Dr. 20903  
 Pascal Numbers: An Extended Pascal's Triangle  
 Timonium De Marchena, Octavio Jose 17 Dulaney H.S. 426 Wake Robin Dr.,  
 Response of the Plasmodial Slime Mold, Baltimore 21030  
 Physarum polycephalum, to Sensory Stimulation  
 Towson Younger, Stephen Michael 17 Calvert Hall College H.S. 1664 Myambay Rd.  
 Molecular Beam Maser 21204

**MASSACHUSETTS**

Chestnut Hill \*Goldstein, Estelle Toby 15 Beaver Country Day School 93 Jefferson Ave.,  
 Histological Study of the Shay Chloroma Tumor Chelsea 02150  
 Danvers Straney, Donald Orral 17 Danvers H.S. 118 Conant St. 01923  
 Operant Conditioning and Scheduled Reinforcement  
 in the Mongolian Gerbil  
 Dorchester \*Cole, Ruth Elise 17 Girl's Latin School 37 Egremont Rd., Brighton  
 Bacteriology of Inhalation Therapy Equipment 02135  
 Reservoirs at the Peter Bent Brigham Hospital  
 North Quincy Maloney, Paul Whiting 18 North Quincy H.S. 311 Safford St., Quincy  
 Radiolotope Dilution Analysis 02170  
 Randolph Brass, Stephen Gary 17 Randolph H.S. 2 Bruce Circle 02368  
 Desalination (by Reverse Osmosis) Through Membranes  
 Composed of Acrylic and Methacrylic Esters  
 Revere \*Hamel, Lisa 17 Revere H.S. 84 Walnut Ave. 02151  
 Low Temperature Electronic Emission Spectral Studies  
 Concerning Some Transition Metal Complexes  
 Stoughton Blake, Norman Bixby 17 Stoughton H.S. 23 Oriole Rd. 02072  
 Experimentation With Narrow Band Frequency Modulation

## MICHIGAN

- Ann Arbor Early, Robert Eric 17 Ann Arbor Pioneer H.S. 2039 Miller Ave. 48103  
Laboratory Simulation of Powered Space-Flight Dynamics
- Birmingham Jones, Douglas Warren 17 Ann Arbor Pioneer H.S. 2666 Park Ridge Dr.  
Water, A Proton Semiconductor 48103
- \*Hoover, Laurette Lynn 18 Wythe E. Groves H.S. 30500 Nadora,  
Effects of Cigarette Smoke on Ciliary Southfield 48075  
Transport System of Rana pipiens
- Detroit Jakubowski, Thomas Michael 17 Catholic Central H.S. 14500 Grandville  
Effects of an Altered Magnetic Field on the Growth 48223  
of the Radish Plant
- Lahey, James Anthony 17 Catholic Central H.S. 4115 Grindley, Dearborn  
Derivations of Automorphic Number Theories Heights 48125
- Chisholm, Rex Leslie 17 Henry Ford H.S. 19926 Blackstone 48219  
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- Oak Park Swerdlow, Paul Steven 17 Oak Park H.S. 15330 Joan 48237  
Computer Solution of Elementary Physics Problems
- Warren Butler, Martin Scott 17 Cousino Sr. H.S. 30205 Lund 48093  
Effects of Thyroxin, Tritiodothyronine, and Various  
Thyroid Inhibitors on the Larva of Phormita regina
- Witmer, Gary William 17 Cousino Sr. H.S. 31738 Wellston 48093  
Testing Compounds for Growth-Regulatory Effects and  
Inter-Reacting Ratios on Isolated Leaf Tissue

## MINNESOTA

- Roseville Shiue, Ming Sen 18 Alexander Ramsey H.S. 1960 Hamline Ave., N. 55113  
Electrical Resistivity of Anthracene and Bimolecular  
Lipid Membranes
- St. Cloud Youngner, Daniel Wayne 17 Technical H.S. 919 18th St., S.E. 56301  
Special Theory of Relativity
- Wilmett \*Moser, Mary Elizabeth 17 Our Lady of Good Counsel H.S. Wilmett  
A Three Phase Study of Mitochondrial Determination 56185  
and Fatty Acid Oxidation

## MISSISSIPPI

- Biloxi \*Curet, Honoré Leela 17 Biloxi Sr. H.S. 1006 Lameuse St. 39530  
High-Intensity Light: A New Form of Insecticide

## MISSOURI

- Independence Wheeler, James Dale 17 William Chrisman H.S. 1408 N. Holder 64050  
Effect of Caffeine on Total Serum Cholesterol
- Washington \*Swoboda, Alexis Cecilia 17 St. Francis Borgia H.S. 501 W. 5th St.  
Electroluminescence 63090

## MONTANA

- Laurel \*Weathermon, Marjorie Jean 17 Laurel H.S. 406 W. 9th St. 59044  
Application of a Quantitative Sem-Micro Hemagglutination  
Test to Mouse Erythrocytes
- Missoula Hamel, Daniel Arthur 19 Hellgate H.S. 530 Minnesota Ave. 59801  
Temperature Effects on the Toxicity of Insecticides

## NEBRASKA

- Auburn Bohling, Joel Ivan 17 Auburn H.S. R.F.D. 3 68305  
Estimating Star's Distances by Spectroanalysis
- Omaha Kaptan, David Jeffrey 17 Omaha Central H.S. 5535 Mason 68106  
Functions Defined by Unusual Limits

## NEW HAMPSHIRE

- Exeter Tumpson, Daniel Bruce 17 Phillips Exeter Academy 429 W. National Pike,  
Effect of Secretin and Cholecystokinin Uniontown, Pa. 15401  
on the Response of the Chronic Gastric  
Fistula Rat to Pentagastrin

## NEW JERSEY

- Englewood Wing, Peter Stanworth 17 Dwight Morrow H.S. 180 Maple St. 07631  
Environmental Effects on Genetic Processes in  
*Drosophila melanogaster*
- Hillsdale Wright, David Allan 17 Pascack Valley H.S. 18 Clinton Pl., Woodcliff  
Studies of Saturninae Lake 07675
- Plainfield Bloom, David 16 Plainfield H.S. 1048 Kenyon Ave. 07060  
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- Princeton Lapedes, Alan Scott 17 Princeton H.S. 361 Franklin Ave. 08540  
General Relativistic Theory Concerning the Relations  
Between Time and Macro and Microscopic Physics

## NEW MEXICO

- Albuquerque Cook, Ryan David 17 Manzano H.S. Box 176, Escabosa Rte., Tijeras  
Investigation of Semi-Regular and Irregular 87059  
Variable Stars
- Las Vegas Schwede, Gary Walter 17 L. V. Robertson H.S. 728 Lee Dr. 87701  
Research on the Suitability of the Conical Configuration  
for Subsonic Astrodynamic Vehicles

## NEW YORK

- Bayside Raifalzen, Claude A. 17 Bayside H.S. 18-40 211th St. 11360  
On Fermat's Last Theorem and Related Ideas
- Brooklyn Ratner, Lee 16 Bayside H.S. 166-03 35th Ave., Flushing 11358  
Determination of Mechanisms for Chemiluminescent  
Reactions Involving Luminol and Sodium Hypochlorite
- Goldberg, Jeffrey Lawrence 16 Brooklyn Technical H.S. 1614 Ave. T.  
A Search for Better Impedance Pneumograph 11229  
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- \*Slivka, Rosalind Barbara 16 Erasmus Hall H.S. 322 E. 7th St. 11218  
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- Levine, Leonard Martin 16 James Madison H.S. 1651 E. 23rd St. 11229  
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- Baum, Israel 17 Mirrer Yeshiva H.S. 295 E. 94th St. 11212  
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- Mitter, Gary Howard 16 Polytechnic Preparatory Country Day School  
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- Mena, Demetrio, Jr. 17 Thomas Jefferson H.S. 182 Atkins Ave. 11208  
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- Ravetch, Jeffrey Victor 17 Yeshiva of Flatbush H.S. 623 Ave. T 11223  
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of Carcinoma Tumor in Mice

- Cambria Heights \*Wolinsky, Fran Robin 17 Andrew Jackson H.S. 120-40 229th St. 11411  
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Its Effect on the Reproduction of the Albino Rat

- Far Rockaway Davis, Barry Robert 16 Far Rockaway H.S. 3003 Dwight Ave. 11691  
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- Moss, Lawrence Craig 16 Far Rockaway H.S. 138-05 Cronston Ave.  
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- Tannenbaum, Allen Robert 17 Far Rockaway H.S. 306 B. 58th St.,  
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- Flushing Mayersohn, Jeffrey 17 John Bowne H.S. 67-11 Parsons Blvd. 11365  
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- Reisfeld, Peter Larry 16 John Bowne H.S. 137-30 70th Rd. 11367  
Study of a Berthollide

- Forest Hills Hsu, Jason 18 Forest Hills H.S. 97-05 Horace Harding Expressway 18L  
Spice of Life - the Triangle Corona 11368

- Littman, Burt Allan 16 Forest Hills H.S. 61-20 Grand Central Pkwy.  
Isolation and Crystallization of Proteolytic Enzymes 11375  
From Beef Pancreas

Jamaica	Stonehill, Brian Allan 15 Forest Hills H.S. <u>110-42</u> 64th Rd. <u>11375</u> The Use of Microwaves in Quantitative Determination of Water Content of Soil	*Gersten, Merrit Joy 17 Ramaz School <u>86-66</u> 188th St., Jamaica <u>11423</u> Four-Color Map Problem		
	Bikates, William George 16 Jamaica H.S. <u>170-26</u> 84th Ave. <u>11432</u> Properties of a Negative-Based Number System	Ozick, Hershel 17 Ramaz School <u>2</u> Parkview Ave., New Rochelle <u>10805</u> Effect of Different Salivas on Growth of Lactobacilli Cultured		
	*Gold, Judith Jo 17 Jamaica H.S. <u>147-41</u> 78th Ave. <u>11367</u> Perception of Shapes and Colors	From Carious Lesions of Teeth		
	Harnick, Paul Elliot 16 Jamaica H.S. <u>73-07</u> 185th St., Flushing <u>11366</u> Effects of Various Stimulants and Depressants on Heartbeat of Daphnia	*Winter, Jane Norma 16 Oceanside H.S. <u>509</u> Carpenter Ave. <u>11572</u> Linguistical Survey and Analysis of the 1968 Mount Hermon Summer School		
	Hawruk, Jeffrey Lawrence 16 Jamaica H.S. <u>171-08</u> 84th Rd. <u>11432</u> Effects of Pre-sectioning the Corpus Callosum on the Tonal Discrimination Ability of <u>Mus musculus</u>	Ferrandino, Francis John 17 Corning-Painted Post West H.S. R.D. <u>1</u> , Study of Solar Phenomena at Various <u>10 Bollen Dr.</u> <u>14870</u> Wavelengths		
	Marinelli, Robert Joseph 16 Jamaica H.S. <u>81-10</u> 135th St. <u>11435</u> Development of Computer Programs for the Analysis of English Literature	Brleger, Randall James 17 Martin Van Buren H.S. <u>80-30</u> 209th St. <u>11427</u> Electronic Properties of Lead Tellurium		
Kenmore	Kunze, Richard Keith 17 Kenmore West Sr. H.S. <u>135</u> Orchard Dr. <u>14223</u> Characterization of Growth Requirements and the Isolation of Dextranucrase From Cariogenic Streptococci	Cava, Robert Joseph 17 Martin Van Buren H.S. <u>83-12</u> 242nd St. <u>11426</u> Investigation Into the Land Color Theory		
Mount Vernon	Monaghan, Robert Michael 17 Mount Vernon H.S. <u>318</u> Hutchinson Blvd., Effects of Pitressin Upon the Blood and Urine Glucose <u>10552</u> Levels in the White Rat	Klevan, Leonard 17 Martin Van Buren H.S. <u>226-50</u> 77th Ave., Bayside <u>11364</u> Correlated Study of Hall Coefficient and Magnetoresistance in Metals		
New York	Berner, Bret 16 Bronx H.S. of Science <u>68-21</u> Bell Blvd., Bayside <u>11364</u> Radioprotective Effect of Polyploidy in <u>Physarum polyccephalum</u>	Rosenfeld, Jeffrey Frank 16 Martin Van Buren H.S. <u>74-15</u> 220th St., Determination of Threshold Frequency of Photochemical Reaction		
	*Buchstein, Sara Rebecca 16 Bronx H.S. of Science <u>2160</u> Bronx Park Comparison of Substances Used in the Elimination East <u>10462</u> of Tetracycline Resistance From Klebsiella	Sobin, Harley 16 Martin Van Buren H.S. <u>221-53</u> Manor Rd. <u>11427</u> Effect of Temperature on the Circulation of an Earthworm		
	*Choist, Ina Naomi 17 Bronx H.S. of Science <u>1435</u> Lexington Ave. <u>10028</u> A Single Symbol Logic System	*Bakowski, Susanne Frances 17 Notre Dame H.S. <u>342</u> B Sacandaga Rd., Thermodynamics of Orthophosphoric Acid <u>Scotia</u> <u>12302</u> and Its Sodium Salts		
	*Flynn, Maureen 17 Bronx H.S. of Science <u>16</u> Crowell Ave., Staten Revising Classification of the Australopithecinae Island <u>10314</u>	*Gorzynski, Janice Dorothy 17 Notre Dame H.S. <u>1323</u> Stanford St. <u>12308</u> Separation and Determination of Various Metals in an Alloy By Means of Anion Exchange		
	Frommer, Raphael 17 Bronx H.S. of Science <u>1533</u> Townsend Ave. <u>10452</u> Tang-Int Equations of Conic Sections	*Perretta, Lorraine Teresa 18 Notre Dame H.S. <u>1216</u> Helderberg Ave. <u>12306</u> EDTA-Magnesium Complex		
	Gutmann, Samuel Chaim 16 Bronx H.S. of Science <u>45</u> Fairview Ave. Infinitely Iterated Exponentials <u>10040</u>	Leider, Andrew Burt 16 Curtis H.S. <u>41</u> Coughlan Ave. <u>10310</u> Efficiency of a Hydrogen-Oxygen Fuel Cell		
	Lau, Peter 18 Bronx H.S. of Science <u>124</u> Sherman Ave. <u>10034</u> Modulus Vector System	Urbach, John Richard 16 Curtis H.S. <u>787</u> Davis Ave. <u>10310</u> Chemotactic Response - Use of Oxygen by <u>E. coli</u>		
	Lehmann, Michael H. 16 Bronx H.S. of Science <u>473</u> W. End Ave. <u>10024</u> Investigation Into the Use of the Turing Machine as a Model of Analog Computation	*Cummings, Mary Ellen 17 St. Anthony of Padua H.S. <u>218</u> W. Lafayette Ave. <u>13205</u> Development of the Peripheral Blood of the <u>Cheydra serpentina</u>		
	Ouiflian, Gregory Phillip 16 Bronx H.S. of Science <u>2421</u> Webb Ave., Patterns in Powers of Numbers <u>10468</u>	Hilton, John Bainbridge 17 Tully Central School <u>Song Lake Crossing</u> Practical Method for Making and Separating <u>13159</u> Protoplasts Made From <u>Bacillus megaterium</u> Cell		
	*Rosenberg, Barbara Jean 16 Bronx H.S. of Science <u>2955</u> White Plains Investigation of Causes of Cold Inactivation of a Bacteriophage <u>Rd.</u> <u>10467</u>	Westbury	Mirzoeff, Joseph Henry 17 Westbury H.S. <u>523</u> Queen St. <u>11590</u> Summation of Algebraic Series	
	Scheer, David I. 16 Bronx H.S. of Science <u>691</u> Gerard Ave. <u>10451</u> Immunological Enhancement of Murine Sarcoma 1	*Torres, Roxanne Theresa 17 Academy of Our Lady of Good Counsel Effects of Diuretics <u>240</u> E. Lincoln Ave. <u>10604</u>		
	Shahrabany, Ariel Aziz 17 Bronx H.S. of Science <u>42-65</u> Kissena Blvd., Investigation Into Properties of a Card Trick <u>Flushing</u> <u>11355</u> Which Involves Transformation of 2-Dimensional Matrices	NORTH CAROLINA		
	Stern, Eric Howard 16 Bronx H.S. of Science <u>64-11</u> Cloverdale Blvd., Five-valued Logic <u>Bayside</u> <u>11364</u>	McCombs, Steven Kelly 18 East Rowan Sr. H.S. <u>110</u> Miller St., Faith Factors Affecting Diffusion Rates in an Agar System <u>28041</u>		
	Wouiff, Gordon 16 Bronx H.S. of Science <u>2753</u> Paudling Ave. <u>10469</u> Investigation of Size Ratio Between Polygons and Several Classes of Their Interior Figures	NORTH DAKOTA		
	*Einson, Amy Lauren 16 Hunter College H.S. <u>568</u> Grand St. <u>10002</u> Sensitization Dependent Audiogenic Seizures	Dickinson	*Montgomery, Jolene Ann 16 Trinity H.S. <u>1020</u> W. Fifth St. <u>58601</u> Discriminated Avoidance Conditioning in the Goldfish	
	*Morawetz, Lida Joan 16 Hunter College H.S. <u>246</u> W. 12th St. <u>10014</u> A Study of Nth Degree Equations in Module 3	Bryan	OHIO	
	*Bross, Eileen Pamela 17 Mother Cabrini H.S. <u>5420</u> Post Rd., Bronx Radioprotective Cytological Studies on <u>Tradescantia</u> <u>10471</u> <u>patulosa</u>	Canton	Cutts, Cass Miller II 17 Bryan H.S. <u>529</u> Sunny Dr. <u>43508</u> Effect of Temperature Changes on the Current Response of P-N Type Silicon Solar Cells	
	*Finn, Marilyn Ann 17 Mother Cabrini H.S. <u>231</u> W. 230th St. <u>10463</u> Investigations in the Suppression of the Rejection Phenomenon in Skin Transplants	Centerville	*Manos, Michelle Lisa 17 Glenwood H.S. <u>4622</u> Logan Ave., N.W. <u>44709</u> Experimental Teratology	
			Benjamin, Richard Bruce 16 Centerville H.S. <u>1000</u> Brittany Hills Dr., Measuring the Surface Temperature of the Sun With Liquid Crystals <u>Dayton</u> <u>45459</u>	

Cincinnati	*Munz, Constance Carolyn 17 Regina H.S. 3816 Lansdowne Ave., Deer Park 45236 What are the Effects of a Nitrogen Mustard and a Crude Yeast Extract on Normal and Malignant Cells Grown <i>in vitro</i> ?
	Howard, Dowell Jennings III 17 Walnut Hills H.S. 2990 Losantridge Ave. Mineralogy of Big Horn Dolomite (Dolostone) of Wyoming 45213
	*Lowenhaupt, Anna Tsing 16 Walnut Hills H.S. 1040 Avondale Ave. 45229 The Utilization of Fructose in the Small Intestine of Young Rats
Cleveland	*Pestel, Lea Frances 17 John F. Kennedy H.S. 3989 Strandhill Rd. 44128 Specific Effects on Solution Conductivity
Columbus	Pattee, Francis Michael 17 Bishop Watterson H.S. 2660 Montcalm Rd. Motion of Beach Particles as Effected by Wave Action 43221
Dayton	Gessel, Ira Martin 17 Colonel White H.S. 1326 Amherst Pl. 45406 Roots of Unity
Lancaster	*Markwood, Jill Ann 17 Lancaster H.S. 1123 Olds Ave. 43130 Factors Influencing Plant Tumor Growth
Mansfield	*Rose, Cynthia Ann 17 Lancaster H.S. 932 Madison Ave. 43130 Investigation of Bicarbonate Ion Utilization in Spermatozoan Metabolism
	Miller, Kenneth William 17 Matabar H.S. 525 Chevy Chase 44907 An Experimental Study of Microwave Noise From a Gas Discharge
Marion	*Dunn, Mary Kathleen 17 Marion Catholic H.S. 1491 Leeland Dr. 43302 Oxygen Permeability of Plastic Films
North Canton	Gustin, Carl Edward, Jr. 17 Marion Catholic H.S. 1052 Edison Ave. 43302 Proteolytic Enzyme Activity
Steubenville	Stanceu, Timothy Charles 17 Hoover H.S. 404 Chappel Hill Dr., N.E. Chemical Messengers and Environmental Factors 44720 Regulating Leaf Abscission
Toledo	*Grabaskas, Kathleen Ann 17 Catholic Central H.S. 1109 N. 4th St., Drosophila: Acclimatization and Adaptation Toronto 43964
Warren	*Sosor, Kathryn Anne 17 St. Ursula Academy 715 Phillips, Maumee 43537 Importance of Phytochrome in the Regulation of Three Plant Processes
	Moritz, Michael Craig 17 John F. Kennedy H.S. 925 N. Main St., Niles Analysis of a Functional Equation 44446
	<b>OKLAHOMA</b>
Enid	Kopp, Marvin Hugh 17 Enid H.S. 1609 E. Cypress St. 73701 Frequency Limits of Neuromuscular Transmission in Extraocular Muscles
Muskogee	Wiley, Clarence Laperte 18 Manual H.S. 516 Market St. 74401 Morphology of Chromosomes From Asynchronous and Synchronous HeLa Chessen Cultures
Oklahoma City	*Denton, Deborah Lynn 18 U. S. Grant H.S. 1107 S.W. 42nd St. 73109 Effects of Various Drugs and Surgical Procedures on Circadian Rhythm of Plasma Cortisol in Rats
	Bradford, William C., Jr. 17 John Marshall H.S. 2925 Charing Cross Rd. Helium-Neon Laser Construction and Experimentation 73120
	Lucas, Scott K. 17 John Marshall H.S. 3222 Wilshire Terrace 73116 Determination of Regional Blood Circulation From Body Surface by Monitoring Injected Radioisotope Tracer
	*Roby, Kathleen Louise 17 John Marshall H.S. 2436 Huntleigh Dr. 73120 Investigations Into the Mechanism of Cardiodepression Induced by Ephedrine During the Development of Tachyphylaxis
	*Bivins, Sharon Lynn 17 Putnam City H.S. 5713 Lawson La. 73132 Influence of Level of Vitamin E on Metabolism of a Cancer-Causing Dye in Rats
	<b>OREGON</b>
Salem	Hook, John William III 17 McNary H.S. 1320 Arrow St., N.W. 97304 Investigation of Lead Chloride in Solution
	<b>PENNSYLVANIA</b>
Allentown	*Miller, Maryanne Agnes 17 Central Catholic H.S. 1734 W. Congress St. 18104 The Mechanochemical Engine
Altoona	Stitt, Jeffry Michael 17 Altoona Area H.S. 125 Fifth Ave. 16802 Isomerization of Carotenoid Compounds
Ardmore	Foster, Michael John 17 Lower Merion H.S. 508 Revere Rd., Merion Mechanical Proof-Checker Station 19066
Bloomsburg	*Eshleman, Margaret Ann 17 Central Columbia H.S. R.D. 5 17815 Effects of Certain Chemicals on the Rooting of Kelsey Yew and Japanese Holly Cuttings
Bridgeville	Katlic, Mark Richard 17 Upper St. Clair H.S. 131 Boxfield Rd., Pittsburgh Effects of Hypophysectomy and Human Chorionic Gonadotropin Administration on the <i>In vitro</i> Metabolism of Progesterone by the Rat Testis
Bryn Mawr	*Fay, Jan Elizabeth 17 The Baldwin School 606 Broad Acres Rd., Narberth Control of Perlite's Expansion Characteristics 19072
Carlisle	*Close, Carol Jean 17 Carlisle Area Sr. H.S. 40 Conway St. 17013 Learning Sets in Rodents
Connellsburg	Moser, Charles William 17 Geibel H.S. P. O. Box 608 15425 Planetary Angular Motion and Secondary Satellite Phenomena
Coraopolis	*Mastro, Roberta Ann 17 Our Lady of the Sacred Heart Academy Gonad Pituitary Relationship 1706 Ridge Ave. 15108
Greensburg	*Rencheck, Judith Cecelia 17 Our Lady of the Sacred Heart Acacemy Virgin Birth in <i>Drosophila polymorpha</i> 2425 Stratford Ave. 15108
Havertown	*Paulone, Mary Elizabeth 17 Greensburg Central Catholic H.S. 804 Michigan Ave., Jeannette 15644 Effects of pH on Seed Germination and Development
Levittown	*Baron, Barbara Ann 17 Haverford Twp. H.S. 404 Devon Rd. 19083 Complexes of Dicyclohexyl - 18 - Crown - 6 With Oxidizing Agents
McKeesport	Edighoffer, John Addison 17 Woodrow Wilson H.S. 45 Daffodil La. 19055 Universal Gas Equation
	Lee, Kenneth Richard 16 Woodrow Wilson H.S. 78 Wildflower Rd. 19057 Electronic Learning Circuit
Milton	Novak, John Edward 17 Serra Catholic H.S. 538 Washington Rd., North Building and Operating a Linear Particle Accelerator Versailles 15137
Newtown Square	Meadows, Robert Claude 17 Milton Area Sr. H.S. Mahoning Manor, Characteristics of Cuprous Oxide Photovoltaic Cells R.D. 1 17847
Philadelphia	Zarutskie, Paul Walter 17 Marple-Newtown H.S. 501 Ellis Ave. 19073 Effects of Cryptorchidism on Steroid Biosynthesis
	Berman, Philip Saphir 16 Central H.S. 6209 Trotter St. 19111 Isolated Hypoxic Frog Heart as a Myocardial Test System
	Chernoff, Donald Alan 16 Central H.S. 7 Surrey Rd., Metrose Park 19126 Biosynthesis of the Pyrrotopyrimidine Nucleoside Toyocamycin by <i>Streptomyces rimosus</i>
	Cottman, Harold Fletcher 17 Central H.S. 5557 Pemberton St. 19143 Detecting Glucose Molecules in the Urine by Means of Carbon-14
Pittsburgh	Glass, Mitchell 17 Central H.S. 8001 Gilbert St. 19150 Correlation Between the Mechanical Effect and "Piezoelectric" Effect in Bone as a Function of Orientation
Plymouth Meeting	GORIN, Joseph Michael 17 Mt. Lebanon H.S. 439 Austin Ave. 15243 Computed Pictorial Representations of Atoms and Bonds
Reading	Isenberg, James Allen 17 Plymouth-Whitemarsh H.S. 610 Apache La., Effect of Temperature on the Absorption Edge of Cadmium Sulfide
Topton	*Dynda, Victoria Rose 17 Central Catholic H.S. 1528 Perkiomen Ave. 19802 Prenatal Auditory Imprinting in Chickens and Ducks
Townville	Rummel, Bruce Robert 17 Brandywine Heights H.S. R.D. 1, Box 281-B, Fleetwood 19522 Investigation of Amino Acid - Sugar Reactions
Turbotville	*Post, June Eileen 17 Townville H.S. R.D. 3, Centerville 16404 Field Study in Ecology
	Teufel, Lawrence William 18 Warrior Run H.S. R.D. 1 17772 Biostratigraphic Investigation of Ostracodes of the Bloomsburg Formation in the Allenwood Quadrangle of Pennsylvania

Washington	Kearney, Michael Avery 17 Washington H.S. 60 Fairmont Ave. 15301 Fission of Charged Droplets	Fairfax	Woodside, Jack Richard, Jr. 17 W. T. Woodson H.S. 9125 Christopher St. Determination of Lunar Orbital Radius 22030
Mullins	SOUTH CAROLINA  *Hodge, Cheryl Charlestyne 17 Palmetto H.S. Route 2, Box 63 29574 Time of Most Active Cell Division in Root Tips of Plants	Herndon	Lysy, Frank John 17 Herndon H.S. 2955 W. Ox Rd. 22070 Interaction of Sulfur Dioxide With Oxides and Hydroxides
Memphis	TENNESSEE  *Baker, Beverly Ann 17 Hamilton H.S. 1498 Merlin Ave. 38106 Experiment With Zone Electrophoresis	McLean	of Calcium and Magnesium Bailey, Kent Roberts 17 McLean H.S. 2000 Lorraine Ave. 22101 Derivation of the General Formula for the Four-Hat Problem
Oak Ridge	*Cawthon, Mary Lawrence 17 St. Mary's Episcopal School 112 Goodwyn Effects of Glucose on <u>Serratia marcescens</u> Pt. 38111 Stafford, Richard Andrew 17 White Station H.S. 5480 Valleybrook Cove Generation of and Experimentation With a Plasma 38117 *Handley, Mary Catherine 17 Oak Ridge H.S. 103 Delaware Ave. 37830 Plant History Determined by Pollen Analysis	Bruck, William Anthony 17 McLean H.S. 1500 Audmar Dr. 22101 Infra-Red Spectroscopic Study of the Gas-Solid Interactions of Sulfur Dioxide and a Duolite Strong Base Anion Exchanger	Bruck, William Anthony 17 McLean H.S. 1500 Audmar Dr. 22101 Infra-Red Spectroscopic Study of the Gas-Solid Interactions of Sulfur Dioxide and a Duolite Strong Base Anion Exchanger
Austin	TEXAS  Rylander, Gary Ray 17 Stephen Austin H.S. 3409 Foothills Terrace 78731 Characteristics of Field-Effect Transistors and Related Amplifier Circuitry When Subjected to Liquid Nitrogen Temperature	Jordan, Joseph Bell, Jr. 18 McLean H.S. 6426 Noble Dr. 22101 Investigation of the Nature of Two Different Kinds of Variable Stars by Observation and Interpretation of Their Light Variations	Jordan, Joseph Bell, Jr. 18 McLean H.S. 6426 Noble Dr. 22101 Investigation of the Nature of Two Different Kinds of Variable Stars by Observation and Interpretation of Their Light Variations
Clifton	Muhlbauer, Jan Eric 17 McCallum H.S. 6709 Shoal Creek 78731 Effect of Spermidine on RNA Synthesis in Irradiated <u>Escherichia coli</u> B/r	McLaughlin, Douglas Kevin 17 McLean H.S. 6510 Ivy Hill Dr. 22101 Resolution of Racemic Mixture of d, l-2-Methylbutanoic Acid to 1-2-Methylbutanoic Acid	McLaughlin, Douglas Kevin 17 McLean H.S. 6510 Ivy Hill Dr. 22101 Resolution of Racemic Mixture of d, l-2-Methylbutanoic Acid to 1-2-Methylbutanoic Acid
Dallas	Petricich, James Albert 18 Clifton H.S. Rt. 2 76634 A Process for Extraction of Aluminum From Aluminum-Bearing Soils	*Rojko, Phyllis Ann 17 McLean H.S. 1717 Macon St. 22101 Thermodynamics: The Ionization of Acetic and Chloroacetic Acids	*Rojko, Phyllis Ann 17 McLean H.S. 1717 Macon St. 22101 Thermodynamics: The Ionization of Acetic and Chloroacetic Acids
Fort Worth	Hughston, Lane Palmer 17 Hillcrest H.S. 5314 Palomar La. 75229 Superposition Principles of Fluid-Filled Cosmology	Newport News	*Swenson, Betty Ann 17 Denbigh H.S. 133 Tazewell Rd. 23602 Induced Gastric Ulcers in the Goat
Port Arthur	Freeman, Gordon James 17 Arlington Heights H.S. 4408 Oakton Dr. 76116 Variations in Sesquiterpene Lactone Content of Southwestern Collections of <u>Ambrosia confertiflora</u> DC. and Evolutionary Significance	Portsmouth	*Bromberg, Susan Irene 18 Churchland H.S. 3401 Shoreline Dr. 23703 Phototropotaxis and Extra-Retinal Photoreception in <u>Passer domesticus</u>
San Antonio	Fusilier, Lane Allen 18 Stephen F. Austin H.S. 2796 63rd St. 77640 Synthesis and Control of Tryptophan Synthetase in Partial Diploids of <u>Escherichia coli</u>	Richmond	Ford, Paul Mathew 17 Cradock H.S. 3501 Deep Creek Blvd. 23702 Data Determined Relative to Solar Synchrotron Radiations at 432 Megacycles
Roy	Graham, Joe Mark 18 MacArthur H.S. 2823 Old Ranch Rd. 78217 Development of a Heterologous Anti-Lymphocyte Serum	Vienna	Kirtland, Grayson Monroe, Jr. 17 Douglas S. Freeman H.S. 15 Glenbrooke A Correlation Between Sunspots and Faculae Circle W. 23229
South Burlington	GRAHAM, Joe Mark 18 MacArthur H.S. 2823 Old Ranch Rd. 78217 Development of a Heterologous Anti-Lymphocyte Serum	Waynesboro	Bott, Ross Alan 17 James Madison H.S. 106 Kingsley Rd., S.W. 22180 Application of the Electrostatic Crystal Field Theory to Copper (II) Ion
Arlington	Jolley, Stephen G. 17 Roy H.S. 2036 W. 5125 S. 84067 Humoral Resistance Mechanisms in the Rat to <u>Trypanosoma lewisi</u> Infections	Washinton	Marton, Kenneth Lawrence 17 Oakton H.S. 11119 Byrd Dr., Fairfax 22030 Reconstitution of TMV Protein With TRSV RNA to Form Active Pseudoviruses
Bedford	Sundberg, John Paul 18 South Burlington H.S. Georgetown Apts. #4, Kennedy Dr. 05401 Effects of X-Radiation on White Blood Cell Production and Serum Proteins Under the Influence of 6 Propyl 2 Thiouracil and Thyrotropin	Lakewood Center	McNair, Jeffry Lee 17 Waynesboro H.S. 1805 W. Main St. 22980 Piezoelectric Laboratory Balance
Colonial Heights	VIRGINIA  Ticket, Gary Arnold 17 Wakefield H.S. 4812 23rd Rd. South 22206 Modification of the Electron Transfer System of <u>Saccharomyces cerevisiae</u>	Richland	WASHINGTON Kramer, Clarence Michael, Jr. 18 Clover Park H.S. 3821 101 St., S.W. 98499 Effect of Lignosulfonates Acidity and Titanium Dioxide on Coagulation of Kaolin Clay
Dublin	*Darden, Nancy Wingfield 18 Liberty H.S. Vistarama La. 24523 Response in Chicken Embryos to a Peafowl-Embryo-Adapted Infectious Bronchitis Virus	Spokane	Riches, Wayne Gary 18 Columbia H.S. 102 Jadwin Ave. 99352 Effect of Colored Light on the Population and Amino Acids of Fruit Flies
	Jones, Michael Harold 18 Liberty H.S. 911 Peaksview St. 24523 Capacitor Breakdown Characteristics	Tacoma	*Cardwell, Bonnie Gale 17 Joel E. Ferris H.S. E. 3806 Fourth Ave. 99202 Leukocyte Culture Adaptation
	Gates, Stephen Anthony 15 Colonial Heights H.S. 210 Norwood Dr. 23834 Comparison of <u>In vitro</u> Techniques for Cellulose Digestion by Rumen Microorganisms	Wenatchee	Chestnut, Robert Ward 17 Lakes H.S. 10225 108th S.W. 98498 Alpha Percentage Time in the Human Electroencephalogram During the Onset of Sleep
	*Archer, Rita Diane 18 Dublin H.S. Rt. 1, Box 218-B Draper 24324 Uptake and Translocation of Two Benzimidazole Derivatives in American Elm Trees	Clendenin	Collyer, David Logan 18 Wenatchee H.S. 109 S. Elliott 98801 Biometric Analysis of <u>Sisymbrium officinale</u>
		Parkersburg	WEST VIRGINIA *Stonestreet, Vickie Lynn 17 Herbert Hoover H.S. Rt. 3, Box 286, Elkview Ecological Significance of Enterococcal Bacteriocines 25071
		Brookfield	*Justice, Penfond Louise 17 Parkersburg H.S. 2812 16th Ave., Vienna Survey of Genetic Traits in a High School Population 26101
			WISCONSIN *Stommer, Kristen Karyl 18 Brookfield East H.S. 2365 N. 130th St. 53005 Comparative Study of the LDH Enzyme in Frog and Rat Tissue Through Agar-Gel Electrophoresis

WYOMING

Greybull

- \*Edwards, Kathleen Margaret 18 Greybull H.S. P. O. Box 35, Emblem  
Determination of pH Values With Natural Indicators 82422
- \*Temme, Charlotte Ada 18 Greybull H.S. Emblem Rt. 82426  
Effects of Changing the Physical Environment of Plants  
and Seeds

\* \* \* \*

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*Washington Trip Winners*  
**FILE COPY**  
*of the*

*Twenty-eighth Annual Science Talent Search<sup>®</sup>*  
*for the Westinghouse Science Scholarships and Awards*

**OKLAHOMA**

Muskogee Wiley, Clarence Lapierre 18 Manual H.S. 516 Market St. 74401

**PENNSYLVANIA**

Havertown \*Baron, Barbara Ann 17 Havertown Twp. H.S. 404 Devon Rd. 19083  
Plymouth Meeting Isenberg, James Allen 17 Plymouth Whitemarsh H.S. 610 Apache Ln.,  
Norristown 19401  
Washington Kearney, Michael Avery 17 Washington H.S. 60 Fairmont Ave. 15301

**TEXAS**

Austin Rylander, Gary Ray 17 Stephen Austin H.S. 3409 Foothills Terrace 78731  
Dallas Hughston, Lane Palmer 17 Hillcrest H.S. 5314 Palomar La. 75229  
Fort Worth Freeman, Gordon James 17 Arlington Heights H.S. 4408 Oakton Dr. 76116  
Port Arthur Fusilier, Lane Allen 18 Stephen F. Austin H.S. 2796 63rd St. 77640

**VIRGINIA**

Fairfax WoodSide, Jack Richard, Jr. 17 W. T. Woodson H.S. 9125 Christopher St.  
22030  
McLean Jordan, Joseph Bell, Jr. 16 McLean H.S. 6426 Noble Dr. 22101  
Portsmouth \*Bromberg, Susan Irene 18 Churchnand H.S. 3401 Shoreline Dr. 23703

**WASHINGTON**

Spokane Cardwell, Bonnie Gate 17 Joel E. Ferris H.S. E. 3806 Fourth Ave. 99202



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

The forty Washington trip winners of the 28th Annual Science Talent Search, among whom \$67,500 of Westinghouse Science Scholarships and Awards will be distributed, represent about 1.7% 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 26 through March 3, 1969, 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 \$6,000 (\$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 16 to 18 years of age and come from 33 cities in 16 states. They were picked by the judges from among 21,951 contestants of whom 2,361 completed their entries by taking a science aptitude examination, obtaining recommendations and writing a report on their science project. Completed entries were received from 49 states and the District of Columbia.

Of the 40 Twenty-eighth Annual Science Talent Search Winners, 31 ranked in the top 5% of their graduating class and 22 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 27.2% 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

### ALABAMA

Decatur	*Yates, Andrea Jane 18 Austin H.S. 1708 Vinca St., S.W. 35601
CALIFORNIA	
Albany	Ganong, William Francis III 17 Albany H.S. 710 Hillside Ave. 94706
Berkeley	*Calonico, Lynne Dianne 17 Presentation H.S. 22 Lenox Rd. 94707
Richmond	Jackson, J. Edward III 16 John F. Kennedy H.S. 2339 Alva, El Cerrito 94530
Santa Monica	Pekary, Allan Dale 18 Santa Monica H.S. 838 Pacific St. 90405

### FLORIDA

Fort Lauderdale	Whittaker, John Douglas 18 Nova H.S. 7201 N.W. Ninth St., Plantation 33313
Jacksonville	Mason, William Thomas III 17 Terry Parker H.S. 6712 Buttontree Ct. 32211
	Patrinety, Christopher Dean 17 Terry Parker H.S. 934 Chapeau Rd. 32211

### IDAHO

Coeur D'Alene	*Orr, Jennie Marie 16 Coeur D'Alene Sr. H.S. 1321 Montana Ave. 83814
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### ILLINOIS

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