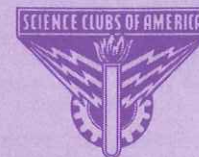


**HONORS GROUP**  
**IN**  
**THE 21<sup>st</sup> ANNUAL**  
*Science Talent Search<sup>®</sup>*  
**for the**  
**Westinghouse Science Scholarships**  
**and Awards**  
**1962**



**SCIENCE CLUBS OF AMERICA**

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**1719 N STREET N. W. ★ WASHINGTON 6, D. C.**



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## The Meaning of Honors in the Science Talent Search

The achieving of Honors in the Science Talent Search, earned by the top 10% of those who complete entries 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 the 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 this list of 356 honor awards, 40 are being chosen as winners of the Washington trip. Among these \$34,250 in scholarships and awards will be distributed. This list of winners is being announced subsequently to the distribution of this list and will be published in the Science News Letter of February 3, 1962, 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 89 girls and 267 boys. The girls determine their own chances in the Science Talent Search in accordance with the number that enter. Of the Honors Group, 71% of the boys and 83% of the girls rank in the upper 5% in their high school classes. Among the 356 who won Honors, 284 belong to science clubs of which 231 are affiliated with Science Clubs of America.

## 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-one 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 600,000 members affiliated with Science Clubs of America.

FOR RELEASE: WEDNESDAY AFTERNOON, JANUARY 24, 1962

## Honors Group in the Twenty-first Annual Science Talent Search®

\* 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 \*Dishner, Gayla Marie 17 Shades Valley H. S. 308 Mecca Ave., 9  
Resistance of Corn and Barley Varieties to the Corn Leaf Aphid  
Decatur \*Chenault, Alice Adele 17 Decatur H. S. 1504 Cherokee Lane  
Stress - Mentor and Tormentor  
\*Yarborough, Linda Kay 16 Decatur H. S. 1517 Buena Vista Circle  
Measurement of the Charge of an Electron

### ALASKA

Anchorage Scott, Harold Edward 17 West Anchorage H. S. 3901 Greenland Dr.,  
Lowest Common Denominator Computer Spenard

### ARIZONA

Mesa Cassady, Patrick David 17 Mesa H. S. 2134 N. Country Club Dr.  
Effect of Temperature on Magnetism  
Phoenix Byers, William Sherburne 17 Camelback H. S. 1002 E. Orangewood Ave.  
Construction and Use of a .5 Million Electron 20  
Volt Particle Accelerator  
\*Stallings, Barbara Booth 17 North H. S. 922 E. Cambridge 6  
Destruction of Red Blood Cells by Non-Complement  
Binding Antibodies  
\*Barron, Mary Frances 17 West H. S. 3622 W. Rancho Dr. 19  
Measurement of the Electronic Charge-to-Mass Ratio  
Blazer, Richard Montross 17 West H. S. 3322 N. 17th Ave. 15  
Determination of Thermal Conductivity of Various  
Metals by Use of a Heat Bridge  
Spangler, David Marshall 17 West H. S. 3049 N. 19th Ave., Apt. 94 15  
Effect of Magnetism on Protoplasmic Streaming  
in Physarum polycephalum  
\*Wildesen, Leslie Elizabeth 17 West H. S. 302 W. Encanto Blvd. 3  
A Method for Determining the Extent of Exhaustion  
of Developer by Photometrics  
Williams, Harold Addison, Jr. 16 West H. S. 514 W. Coronado Rd. 3  
Observation of Magnetic Domains by the Faraday Effect  
Tucson \*Donaldson, Patricia Annette 17 Rincon H. S. 342 N. Jefferson  
Design of a Tubeless Television  
Treille, Alain Louis 18 Salpointe H. S. 4748 E. Lee St.  
Furthering Pappus's Extension  
Grauman, David Samuel 16 Tucson H. S. 250 S. Country Club Rd.  
Effects of External Magnetohydrodynamic Forces  
on Temperature of a Plasma

### ARKANSAS

Little Rock Besser, Jan Lance 17 Little Rock Central H. S. 5200 Asher Ave.  
Effects of Ribonucleic Acid on Ehrlich's Ascites Cells in Mice

### CALIFORNIA

Anaheim Parkyn, William Arthur, Jr. 17 Servite H. S. 1810 Diana Ave.  
Existence of Terrene Biological Systems in the Solar Neighborhood  
Bakersfield Brown, George Albert, Jr. 17 Bakersfield H. S. 6604 Mt. Hood  
Relationship of Lines and Planes in Space to Various  
Two-Dimensional and Three-Dimensional Compartments  
Downey \*Miller, Elinor Judith 17 Earl Warren H. S. 8650 Lowman Ave.  
Stereoisomerism of Dichlorotetramminecobalt III Chloride  
Fallbrook \*Knoche, Jayne Marie 16 Fallbrook Union H. S. 1104 Riverview Dr.  
Measuring the Energy of Light



Glendale Carlin, Steven Charles 17 Herbert Hoover H.S. 1630 Allen Ave. 1  
Metabolism of Facultatively Autotrophic Ammonia-Oxidizing Bacteria

Harbor City Myers, Charles Joseph, Jr. 16 Nathaniel Narbonne H.S. 4104 Via  
Equivalence of Imaginary Largavista, Palos Verdes Estates  
Expression in Modulo Systems

Williams, Ronald James 17 Nathaniel Narbonne H.S. 2043 W. 255th St.,  
Investigation of the Learning Mechanism Lomita  
Involved in Generalizing on Visual Patterns

Livermore McMillin, Kenneth Dale 17 Livermore H.S. 1758 3rd St.  
Effects of a Magnetic Field on Optical Activity of  
Cupric Sulfate in Crystalline and Soluble States

Long Beach McConnell, Michael James 18 Polytechnic H.S. 1012 Amelia Dr. 7  
Empirical Study of Multi-Valued Logic

Los Angeles Emmel, John Frederick 17 Dorsey H.S. 5341 West Blvd. 43  
Amount of Light Required for Setting the  
"Biological Clock" of Hamsters

Tager, Howard Steven 16 University H.S. 1482 1/2 S. Wooster St. 35  
New Calorimetric Method for Determination of Urea Nitrogen

Los Altos Baer, Theodore Daniel 18 Los Altos H.S. 12100 Hilltop Dr., Los Altos  
Effects of Radio-Sensitizing Drugs on Chick Embryo Hills

Oakdale Allen, Perry Stanley 16 Oakdale Union H.S. Star Route, La Grange  
Ecology and Distribution of Plant Life in the La Grange,  
California, Area

Oakland Holloway, Charles Kenneth 17 Castlemont H.S. U.S. Naval Hospital 14  
Production of Polypeptides from Inorganic Matter

\*Porter, Jane Emily 16 Castlemont H.S. 6115 Buena Ventura Ave. 5  
Rate of Reversion in Irradiated Neurospora

Palm Springs Harnage, Philip Lee 17 Palm Springs H.S. 66-719 Hatch Cactus Dr.,  
Free Enzyme Activity of the (Box 834), Desert Hot Springs  
Deaminase Enzyme of Flavobacteria piscicida Bein

Palos Verdes \*Monroe, Phyllis Robinson 17 Marymount H.S. 2508 Paseo del Mar  
Estates An Experimental Analysis of the Euglena

Richmond \*Marvin, Betty Joanne 16 DeAnza H.S. 5769 Friar Ct., El Sobrante  
Experiments in Vision and Glare

San Bernardino \*Jaime, Judith Marie 17 Pacific H.S. 6531 Merito Pl.  
Danger of Radioactive Contamination of Kelp

San Francisco Lawry, Stephen Slade 17 Lowell H.S. 2731 Green St. 23  
Development of a New System for Predicting  
Results of Polyhybrid Genetic Crosses

Spring Valley Coleman, Philip Lynn 17 Mount Miguel H.S. 2905 Apricot Lane  
Investigation of Nuclear Electric Quadrupole Mount

Tranquillity Hill, Martin John 18 Tranquillity Union H.S. P.O. Box 233  
Investigation of Wave Properties of Light

#### COLORADO

Denver Ault, Kenneth Ashley 17 South Denver H.S. 2013 S. Corona 10  
Effects of Acute Induced Hypothermia on Blood Sugar Levels in Rats

Englewood \*Haberland, Margaret Elizabeth 17 Cherry Creek H.S. 5300 S. Colorado  
Effects of Erythrocytic Injection Upon Begonias Blvd., Littleton

Sigman, Kenneth Jay 17 Cherry Creek H.S. 4751 S. University Blvd.  
Tensile and Shear Strengths of Epoxide Adhesives as  
Related to Their Molecular Structures and Methods of Cure

Greeley Winograd, Terry Allen 15 Greeley H.S. 1828 14th St.  
Computer to Determine Functions in Calculus of Finite Differences

#### CONNECTICUT

New London Sullivan, Michael Jeffrey 17 St. Bernard's H.S. Box 64 - Buddington Rd.,  
Echo Location Device Groton

Norwich \*Seidman, Esther Rachelle 16 Norwich Free Academy Plainfield St.,  
A Spectrophotometric Study of Effects of Ultra-  
violet Light on Deoxyribonucleic Acid Plainfield

Stamford Kochansky, Jan Peter 17 King School 60 Greenfield Rd.  
Absorption and Fluorescence Properties of 9-Substituted  
6-Hydroxy-3-Isoxanthones

Ash, Peter Franklin 17 Stamford H.S. 214 High Ridge Rd.  
A Hydrostatic Equation Solver

Wilton Wolcott, Barry Whitcomb 17 Wilton H.S. 36 Clover Dr.  
Rate of Transformation of a Cis Isomer to the Trans Isomer  
as a Function of Temperature

#### DISTRICT OF COLUMBIA

Washington \*Loosbrock, Mary Virginia 17 Immaculata H.S. 3123 Brooklawn Terrace,  
NO<sub>2</sub> in Pond Habitats of Chevy Chase 15, Maryland  
Peritrich Protozoa

Walker, Christopher Wetmore 16 St. Albans School 7101 Glenbrook Rd.,  
General Astronomical Photography Bethesda 14, Maryland

Rogers, Jeffrey Langston 17 Sidwell Friends School 7007 Glenbrook Rd.,  
Tissue Specificity in Hydra Bethesda 14, Maryland

#### FLORIDA

Coral Gables Bachelor, Herbert James 17 Coral Gables Sr. H.S. 1662 S.W. 18th Ave.,  
An Improved Medium for Culturing Miami 45  
Paramecium aurelia

Catlin, Jack Steven 17 Coral Gables Sr. H.S. 8120 S.W. 62nd Ave.,  
Inhibitory Effect of Calf Sera on Rous Miami 43  
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Cohen, Martin Joel 17 Coral Gables Sr. H.S. 2335 S.W. 26th Terrace,  
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Fruitstone, Mitchell Jay 17 Coral Gables Sr. H.S. 1512 Robbia Ave. 46  
An Interferon Highly Effective Against Herpes Simplex Virus

Goodman, Neil Franklin 16 Coral Gables Sr. H.S. 6236 S.W. 10th Terrace,  
Alkaline Phosphatase Activity of Kidney Miami 44  
Cells in vitro During Lag Phase of Growth

\*Johnson, Jane Carol 17 Coral Gables Sr. H.S. 457 S.W. 19th Rd.,  
An Original Key to Nineteen Genera of Western Miami 36  
Atlantic Myctophid Fishes

Joyce, James Michael 17 Coral Gables Sr. H.S. 822 Venetia Ave. 34  
Cellular Accretion of Calcium with Subsequent Membrane  
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\*Kurtz, Katherine Irene 17 Coral Gables Sr. H.S. 4375 S.W. 10th St.,  
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a Deep Sea Core

Machtey, Michael Axel 17 Coral Gables Sr. H.S. 4435 S.W. 13th St.,  
New Analytical Techniques of Microelectro-  
phoresis Applied to Interaction of Antibodies with Human Erythrocytes Miami 34

Mass, Myron Frank 16 Coral Gables Sr. H.S. 2560 S.W. 19th Terrace,  
X-Ray Studies of Mixed Oxide Systems Miami 45

Mensch, James Richard 17 Coral Gables Sr. H.S. 910 Douglas Rd. 34  
Theoretical Research on Effects of Accelerated  
Expansion of Four Dimensions

Prado, Gervasio 16 Coral Gables Sr. H.S. 41 N.W. 38th Ct., Miami 44  
Finite Coordinate Systems on Surface of a Sphere

\*Scally, Ruth Patricia 17 Coral Gables Sr. H.S. 1421 S.W. 17th St.,  
Relationship of Environmental Cupric Ions Miami 45  
and Respiratory Rate of *Balanus amphitrite* niveus

Gainesville Howard, Bob Allen III 17 Gainesville Sr. H.S. 410 N.W. 13th St.  
Reduction of Certain Inorganic Ions by Trimethylamineborane,  
Dimethylamineborane and Sodium Borohydride

Melbourne Cherniak, Christopher George 16 Melbourne H.S. 711 1st Ave., Sea Park,  
Tissue Culture of Functioning Single Neurons Eau Gallie

Miami Wertz, James Richard 17 Miami Edison Sr. H.S. 1039 N.E. 104th St. 38  
Tychonic Square Root Map of the Solar System

\*Allmaras, Marie Theresa 17 Miami Sr. H.S. 610 S.W. 25th Rd. 36  
Observations on Growth of Certain Cellulolytic Marine Fungi

\*Bass, Elaine Rae 17 Miami Sr. H.S. 1627 S.W. 10th St. 35  
An in vivo Test for Cyclic Photophosphorylation

North Miami Kesden, Daniel 17 North Miami Sr. H.S. 1717 N.E. 158th St., North  
Chemical Factors Affecting Electrical Miami Beach  
Properties of Nerve Impulse

Tallahassee Loucks, Donald Lamar 16 Leon H.S. 1449 Lee Ave.  
Refraction of Light Through Crystalline Media

Tampa Ricker, George Rollins, Jr. 17 Chamberlain Sr. H.S. 9602 North Blvd.,  
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Measurements of Ovalbumin



# GEORGIA

- Atlanta \*Means, Mary Catherine 17 Northside H. S. 3074 Margaret Mitchell Dr.,  
Possible Relationship Between Muscle Glycogen and Localization of *Trichinella spiralis* N. W. 5
- Augusta \*Gatz, Margaret Jean 17 Academy of Richmond County 2440 Apricot Lane  
Mitosis in Planaria
- Gainesville Strickland, Daniel Michael 17 South Hall H. S. 1518 Roysten St.  
Relation of Conductivity of Various Compositions of Glass to Temperature
- ILLINOIS
- Charleston Baker, John Harvey 16 Charleston H. S. 880 7th St.  
Pythagorean Numbers
- Chicago Grofman, Bernard Norman 17 Amundsen H. S. 2633 W. Farragut Ave. 25  
Game Theory Analyses
- \*Benson, Joan Therese 17 Aquinas Dominican H. S. 8220 S. Morgan St. 20  
The Spin-Echo Effect
- \*Donovan, Joan Marie 18 Aquinas Dominican H. S. 1537 E. 83rd Pl. 19  
The Climate of Chicago
- Des Plaines Gartner, Todd Henry 17 Maine Twp. H. S. West 1818 Maple St.  
Near Infrared Absorption Spectroscopy
- Evanston Barnes, Richard Allen 16 Evanston Twp. H. S. 825 Gray Ave.  
Investigation of Bis (2, 6-Dimethyl - 4-Thiopyrone) Dibromocobalt (II)
- \*George, Kathleen Nancy 17 Evanston Twp. H. S. 2404 Isabella St.  
Harmful Effects of Normal Protein Metabolites
- Godfrey, Paul Gannon 17 Evanston Twp. H. S. 825 Forest Ave.  
A Study of the Fermat Equation
- Karlin, David Alan 18 Evanston Twp. H. S. 1719 South Blvd.  
Correlation of Diet to Egg Yolk Cholesterol Concentration
- \*Powers, Julie Ann 18 Evanston Twp. H. S. 913 Hamlin St.  
Calcium Distribution in Correlation to Molting Cycle of *Orconectes virilis*
- \*Domeny, Margaret Josephine 17 Marywood School 7159 Moody Ave.,  
Use of the Photosynthetic Gas Exchanger Chicago 46  
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- Greenville Smith, Gerald Ralph 17 Greenville H. S. 324 Eastern Ave.  
Effects of Vacuum on Bacteria
- La Grange Bornzin, Gary Lee 17 Lyons Twp. H. S. 98 N. Peck Ave.  
Investigation of Mathematical Properties of a Sequence Derived from Finite Differences
- Hazelbauer, Gerald Lee 17 Lyons Twp. H. S. 4836 Lawn Ave., Western  
An Investigation of a New Method of Yeast Taxonomy Springs
- Moore, Kenneth Bouton 18 Lyons Twp. H. S. 4016 Central Ave., Western  
Infinite Differences Springs
- Oak Park \*Schauss, Martha Catherine 17 Oak Park-River Forest H. S. 633 Park Ave.,  
Relationship of Mouse Life Span to River Forest  
Survival in Stress Experiments
- Orland Park Rice, David Parker 17 Carl Sandburg H. S. 12322 Elm St., Palos Park  
Column Chromatography
- Park Forest Dinerstein, Robert Joseph 17 Rich Twp. H. S. 345 Oakwood St.  
Electronic Analog Computer
- Simmons, Douglas Frank 17 Rich Twp. H. S. 9 Elm St.  
Electronic Measurement of Sonic Velocities
- Park Ridge Calkowski, Joseph Adam 17 Maine Twp. H. S. East 8057 Prospect Ave.,  
Linear Electron Accelerator Niles 48
- Frey, Robert Everett 17 Maine Twp. H. S. East 126 Stolling Rd., Niles 48  
Qualitative Determination of Ozone
- Johnson, Michael Allan 17 Maine Twp. H. S. East 1145 Hoffman Ave.  
Hydro-Electrostatic Generator
- Marrone, Robert Eugene 17 Maine Twp. H. S. East 217 Washington St.,  
Fuel Cells Glenview
- Tobin, Harold Bernard 17 Maine Twp. H. S. East 2315 Dempster St.  
Precipitation in the Gelatin State
- Wiesenthal, Jack Alan 17 Maine Twp. H. S. East 8100 Elmore, Niles 48  
Aluminum from Clay
- Rockford Nelson, Douglas Lloyd 17 East Sr. H. S. 135 N. Rockford Ave.  
Culturing Antibiotic Producing Organisms from Soil

- Skokie \*Kazanow, Ann Joyce 16 Niles Twp. H. S. West 5312 Conrad  
Value of Hemagglutination for Quantitative Diagnosis of Allergy

# INDIANA

- Columbus Burt, Michael Robert 17 Columbus Sr. H. S. 3225 Central St.  
Differentiation Between *Microtus pennsylvanicus* and *Microtus ochrogaster* by a Red Blood Cell Agglutination Test
- Evansville Brown, Stephen Kent 17 Benjamin Bosse H. S. 2901 Chestnut St. 14  
Determination of Breakdown of Deoxyribonucleic Acid Bases in Bacteriophage T<sub>2</sub> Due to Ultraviolet Light Irradiation
- Conklin, Kenneth Austin, Jr. 17 Central H. S. 1917 Carol Dr. 15  
Gastrointestinal Reactions to a Periodic Noise Avoidance Task
- Summers, Richard Irvin 17 Central H. S. 7214 E. Blackford Ave. 15  
Correlation of Age and Calcium Content of Compact Bone and Its Application to Anthropological Specimens
- Georgetown Mosier, Donald Edward 17 Georgetown H. S. R. R. 3  
Pathological Defense Mechanisms of the Thymus
- Hammond Hohalek, Robert Dean 17 Oliver P. Morton H. S. 6818 Delaware Ave.  
Electrical Device for Data Interpretation and Deducted Response
- Pilot, Mitchell 17 Oliver P. Morton H. S. 7137 Knickerbocker Pkwy.  
Morse Code Translator
- Indianapolis Waltz, Ronald Edward 18 Warren Central H. S. 8249 E. 11th St. 19  
Study of Miniature Cells with Oscillographic Polarography
- Marion Carnes, Gary Wayne 17 Marion H. S. 523 E. Swayzee St.  
Stratigraphy and Paleontology of the Mid-Saluria
- Liston Creek Limestone near Marion, Indiana
- Mishawaka \*Stellingwerf, Sandra Kay 17 Penn H. S. 11671 Adams Rd., Granger  
Absolute Mobility of the H<sup>+</sup> Ion in Ice
- Rochester Bartlett, John Thane 17 Rochester H. S. R. R. #2, Macy  
Effects of *Equisetum hyemale* on Diabetes Mellitus
- Vincennes \*McMullen, Mary Annette 17 St. Rose Academy 1721 N. 14th St.  
Effects of Nutrition and Light on Euglena
- West Lafayette Herrick, Robert William 17 West Lafayette H. S. 1825 Sheridan Rd.  
Some Definitions about Curves and Proof by these Definitions

# IOWA

- Cedar Rapids Mineck, David William 17 Thomas Jefferson Sr. H. S. 133 21st St. S. W.  
Construction and Experimentation in Binary Digital Computers
- Wulfsberg, Gary Paul 17 Washington H. S. 2348 Linden Dr., S. E.  
Coordination Compounds of Chromium and Hydroxylamine  
Prepared in Alcohol
- Charles City Morehouse, David Frank 18 Charles City Community H. S. 300 Blunt St.  
Efficiency of Low Performance Rocket Nozzles Designed with Conventional Design Relations and Theory
- Des Moines \*Birney, Betty Olga 17 Roosevelt H. S. 429 51st St. 12  
A Study of Sutures Under Stress
- \*Wallace, Joan Brooks 17 Roosevelt H. S. 147 Tonawanda Dr. 12  
Hatchability by Germinal Disc Observation
- Marion Burns, Clarence Ray 17 Linn-Mar H. S. R. R. 3  
Visualizing Aerodynamics

# KANSAS

- Independence Hills, Jack Gilbert 18 Independence Community College (H. S. Division)  
Atmospheric Currents of Jupiter 119 S. 12th St.
- Pittsburg Colborn, William Robert 17 Pittsburg H. S. 708 W. Kansas St.  
Immediate Effects of Rabbit Anti-Sheep Hemolysin on Reticulocytosis in X-Irradiated BUB Mice
- Topeka \*Barry, Ann Jeannine 17 Topeka H. S. 1233 Webster  
Land's Theory of Light
- Wichita Bauman, Stevan Jasper 17 Wichita H. S. West 1629 University St.  
Experiments with Magnetism and Its Effect on Subatomic Particles
- KENTUCKY
- Fort Knox Hustvedt, Richard Irvin 15 Fort Knox H. S. 5723-A Brown Ave.  
Effects of Temperature Changes on Nuclear Magnetic Resonance
- Frankfort Cook, Thomas Jefferson 17 Franklin County H. S. Payne St.  
Geometry of N Dimensions with Emphasis on Topological Properties of Polytopes



# LOUISIANA

- Lafayette Johnson, Lynn Douglas 17 Lafayette H. S. 213 Kim Dr.  
An Experiment with Cloud Chambers
- Tioga Carlton, Alan Wayne 17 Tioga H. S. Rt. 1, Box 297, Pineville  
Splash Patterns

# MARYLAND

- Beltsville \*Dickson, Mona Margaret 17 High Point Sr. H. S. 9120 49th Ave.,  
Effect of Colored Light on Leaf Sugars College Park
- \*Pogorelskin, Alexis Esther 17 High Point Sr. H. S. 9-C Ridge Rd.,  
Disc Sensitivity of Antibiotics to a Greenbelt  
Bacterial Growth
- Bethesda Hake, Jonathan Cleveland 17 Bethesda-Chevy Chase H. S. 5504 Glenwood  
Immunologic Considerations in Modification Rd. 14  
of Radiation Injury by Tissue Transplant
- Hyattsville \*von Limbach, Gretchen 17 Northwestern H. S. 6800 Dartmouth Ave.,  
Geraniums from Seeds College Park
- Sandy Spring Smith, David Richard 17 Sherwood H. S. 14307 Great Oak Lane, Silver  
Photolysis of Nitrosyl Chloride Spring
- Silver Spring Ackerson, Jeffrey Townsend 17 Montgomery Blair H. S. 9823 Cahart Pl.  
AMO-1618 - A Plant Growth-Inhibiting Chemical
- Barnhart, Carl Frederick 18 Montgomery Blair H. S. 2117 Ellis St.  
An Idea for a New Composite Transistor
- Weston, Thomas Spengler 17 Northwood H. S. 2703 Plyers Mill Rd.  
High Temperature Chemical Reactions with R. F. Plasma Torch

# MASSACHUSETTS

- Arlington Howell, John Arthur 17 Arlington H. S. 12 Lincoln St. 74  
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- Cambridge Isen, Eric Michael 17 Cambridge High and Latin School 7 Maple Ave. 39  
Studies in the Naphthalic Anhydride Series
- Concord Newsom, William Wheeler III 17 Concord-Carlisle H. S. 20 Elsinore St.  
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- Fall River Wojcik, Michael Marcel 16 B. M. C. Durfee H. S. 890 Dwelly St.  
Calorimetric Study of Phase Equilibrium in Three Component Systems
- Holden Mason, Richard Wesley 17 Wachusett Regional H. S. Gates Rd., Sterling  
Zone Refining Polyethylene Glycol Junction
- Natick Connelly, Timothy Richard 17 Natick H. S. 8 Halsey Way  
Projects in Gas Chromatography
- Revere Cook, Barry Paul 16 Revere H. S. 26 Arlington Ave. 51  
Programmed Robot
- Spitzer, Stuart Marshall 17 Revere H. S. 159 Gore Rd. 51  
Temperature Rise in a Solid Exposed to Thermal Radiation
- Springfield Daugherty, Gerry Robert 17 Technical H. S. 253 Forest Hills Rd. 8  
Functions of Rocket Engines
- Nicoli, David Frank 17 Technical H. S. 137 Whittum Ave. 8  
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- Waltham \*Madden, Sarah Keating 17 Waltham Sr. H. S. 382 Crescent St. 54  
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# MICHIGAN

- Ann Arbor \*Tiffany, Mary Ann 17 Ann Arbor H. S. 1828 Vinewood  
Solubilization of Feather Keratin
- Detroit \*Pokornicki, Helena 17 Felician Academy 18843 Maine 34  
Comparative Study of Some Theories of Dental Caries Prevention
- Grand Blanc Hill, David Charles 17 Grand Blanc H. S. 11723 Saginaw  
Discovery of an Original Series of Titanium Polymers
- Milan Mendenhall, George David 16 Milan H. S. 7730 Crane Rd., Ypsilanti  
Investigations of an Azide Rearrangement and the  
Reactions of Its Products
- Royal Oak \*Kaye, Claris Ann 17 R. O. Dondero H. S. 938 N. Washington  
Effects of a Metabolic Poison on Foliar Absorption of P-32  
and Its Distribution in Bean Seedlings

# MINNESOTA

- Mound \*Gustafson, Bonnie Veryl 17 Mound Sr. H. S. Rt. 2, Box 96, Maple Plain  
Riboflavin Deficiency as It Affects Rats and Their Offspring

- St. Cloud Johnson, Lee Milford 17 Technical H. S. 720 S. 13th Ave.  
Optical Pumping - Pressure Shifts

# MISSISSIPPI

- Greenville Baskind, David Lee 17 Greenville H. S. 424 S. Eureka  
Studies with a 500,000 Volt Electron Accelerator
- Greenwood Womack, Charles Theodore III 17 Greenwood H. S. 307 E. Monroe Ave.  
Effect of Splenic Extracts on Sarcoma in Two Animal Species

# MISSOURI

- Kansas City McCourt, James Edward 17 Saint Pius X H. S. 5042 N. Brighton 19  
An Investigation of Magnetohydrodynamic Rocket
- Springfield Young, John Harley 17 Central H. S. 658 S. Hampton Ave. 4  
Design of an Analog Computer
- Willard \*Beam, Romona Louise 17 Willard H. S. Willard  
Color and Its Causes

# MONTANA

- Choteau Drummond, Julius Leland 17 Choteau H. S. Box 285  
Composition of Symbolic Logic
- Eureka \*Tripp, Merrilyn Jo 18 Lincoln County H. S. Box 254  
Applications of Peltier's Effect
- Great Falls \*Fanyak, Rochelle Marie 18 Central Catholic H. S. 2514 1st Ave. N.  
Blood Urea Nitrogen

# NEBRASKA

- Omaha \*Gordon, Marian Jane 17 Benson H. S. 5009 Bedford Ave. 4  
Characteristics and Growth of Crystals
- Syracuse Lawton, Everett Ronald 17 Syracuse H. S. 645 7th St.  
Determining Linear Absorption Coefficient of Polystyrene

# NEW HAMPSHIRE

- Rochester \*Cooper, Candace Wentworth 17 Spaulding H. S. 1 Dartmouth Lane  
Alcohol Preference in Mice with Simultaneous and  
Sequential Presentation of Alcohol and Water

# NEW JERSEY

- Westfield \*Schlesinger, Joy Ellen 17 Westfield Sr. H. S. 1 Lambert Circle  
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# NEW MEXICO

- Las Vegas Ewing, Martin Sipple 16 Robertson H. S. 1209 Eighth St.  
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- Soderblom, Laurence Albert 17 Robertson H. S. 1315 4th St.  
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- Almond Simpson, Harold Allan 17 Alfred-Almond H. S. 105 N. Main St.  
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Brooklyn \*Chess, Leslie 16 Erasmus Hall H. S. 1625 Ditmas Ave. 26  
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Milstein, Joseph Beril 17 Yeshiva of Flatbush H. S. 1356 New York Ave. 3  
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Rubin, Leo 17 Yeshiva of Flatbush H. S. 885 Lincoln Pl. 13  
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Clyde Millspaw, Wayne Allen 18 Clyde Central School 171 Caroline St.  
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Farmingdale Sanders, Kenneth Leigh 17 Farmingdale H. S. 232 N. Syracuse Ave.,  
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Far Rockaway Gold, Richard Alan 15 Far Rockaway H. S. 236 Watjean Ct. 91  
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Floral Park Skinner, Thomas Paul 17 Sewanhaka H. S. 644 S. 12th St., New Hyde Park  
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Grahamsville Rubenzahl, Ira Henry 17 Tri Valley H. S. Neversink  
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Hampton Bays \*Anderson, Kerry Jean 17 Hampton Bays H. S. Lynn Ave. P. O. #349  
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Levittown \*Tatz, Vicki Laura 16 Division Ave. H. S. 27 Grouse Lane  
Effect of Chemical Agents on Bacterial Growth

Long Island City \*Kaplowitz, Karen Mae 16 Long Island City H. S. 35-06 24th St. 6  
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Tweed, David George 17 Herricks Sr. H. S. 43 Park Ave., Williston Park  
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New Rochelle \*Greibach, Judy Ann 16 New Rochelle H. S. 80 Pryer Terrace  
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\*Grinnell, Sheila Lynne 16 Bronx H. S. of Science 2802 Claflin Ave. 68  
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Mesibov, Robert Evan 15 Bronx H. S. of Science 240 Cabrini Blvd. 33  
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\*Rosen, Roberta Marcia 17 Bronx H. S. of Science 300 Central Park West  
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\*Osband, Beverly Ann 17 Monroe H. S. 86 Rosedale St. 20  
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\*Turner, Mary Anne 17 Nazareth Academy 133 Pleasant St., Canandaigua  
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Rome Gordy, Leonard Howard 17 Rome Free Academy 1122 Laurel St.  
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Schroon Lake Haberly, Lewis Binoth 17 Schroon Lake Central School Severance  
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Snyder Chapman, Clark Russell 16 Amherst Central Sr. H. S. 2343 Kensington  
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Staten Island Ross, Elliott Daniel 16 Curtis H. S. 550 Bard Ave. 10  
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Yonkers Lester, Howard Elliot 17 Roosevelt H. S. 150 Chittenden Ave.  
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Rosner, Anthony Leopold 18 Roosevelt H. S. 300 Hollywood Ave., Tuckahoe  
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\*Trefzger, Judith Ann 17 Saint Mary H. S. 6715 Merwin 27  
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Schmidt, Stanley Albert 17 Western Hills H. S. 4121 Harding Ave. 11  
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Elyria \*Gates, Katherine Mary 17 Elyria Catholic H. S. 30 Sandy Lane Dr.  
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Lorain Hotchkiss, Douglas Berry 17 Lorain H. S. 406 Root Rd.  
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- Maumee \*Hayes, Donna Gene 18 Maumee Valley Country Day School 3141 Oak Grove  
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- Newark \*Matesich, Martha Mary 17 Newark Catholic H. S. 509 Granville St.  
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- Midwest City Thomasson, John James 18 Midwest City H. S. 10211 LaJean Dr. 10  
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- Norman McGrew, William Clement 17 University H. S. 827 College  
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- Ponca City Letzring, Samuel Arthur 17 Ponca City Sr. H. S. 400 N. Eighth St.  
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- Tulsa \*Jacobsen, Ingrid Ann 17 Edison Sr. H. S. 1540 E. 54th Pl. 5  
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#### OREGON

- Grants Pass Calvert, James Lee 17 Grants Pass H. S. 1066 N. E. Savage  
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#### PENNSYLVANIA

- Allentown Bernini, Richard Louis 16 Central Catholic H. S. 1151 Ridge Ave.  
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- Coraopolis \*Mastro, Andrea Marie 17 Our Lady of the Sacred Heart H. S. 1706 Ridge  
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- Fleetville \*Foley, Carol Lee 17 Benton Twp. H. S. Star Route, Waverly  
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- Kennett Square Pevar, Marc David 17 Kennett Consolidated School 602 Ridge Ave.  
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- Philadelphia Eyer, Joseph 17 Central H. S. 1606 N. 52nd St. 31  
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- State College \*Cheng, Meimei Chung 17 State College Sr. H. S. 430 Martin Terrace  
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#### RHODE ISLAND

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- Woonsocket \*Aizsils, Inta 17 Woonsocket H. S. 706 Harris Ave.  
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- Brown, Alfred Winsor, Jr. 18 Woonsocket H. S. 324 Harris Ave.  
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#### SOUTH CAROLINA

- Columbia House, Waylon Velt, Jr. 17 A. C. Flora H. S. 4409 Devereaux Rd.  
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#### TENNESSEE

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- Knoxville Pigg, Jay Cee, Jr. 17 Knoxville Catholic H. S. 130 Euclid Circle, Oak  
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- Memphis \*Shoemaker, Rheada Michele 17 Sacred Heart H. S. 326 Hawthorne St. 12  
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- Nashville \*Stults, Carol Lorena 16 Hillsboro H. S. 1092 Lynwood Blvd. 5  
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#### TEXAS

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- San Antonio Vetter, David Charles 17 Highlands H. S. 1843 Schley Ave. 10  
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#### UTAH

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#### VIRGINIA

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- McLean Creutz, Alan 18 McLean H. S. Route 2, Box 480  
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- Vienna \*Ziegler, Ruth Ann 17 James Madison H. S. P. O. Box 114, Oakton  
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#### WASHINGTON

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- Edmonds Wright, Leigh Craig 17 Edmonds Sr. H. S. 709 Sixth Ave. N., P. O. Box 392  
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Kirkland \*Lebens, Karen Ann 17 Lake Washington H. S. 10218 N. E. 65th St.  
Thermometric Titration-Methods and Uses  
Spokane Jones, Frederick Douglas 17 Shadle Park H. S. W. 3229 Grace 12  
The Plasma Torch  
Vancouver Kepner, Robert Norman 17 Fort Vancouver H. S. 4310 Lincoln Ave.  
Paper Chromatography of Amino Acids  
Rogers, Charles Frederick 17 Fort Vancouver H. S. 805 N. W. 78th St. ,  
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Veradale \*Forsberg, Pamela Susan 16 Central Valley H. S. E. 10421 Broadway,  
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#### WEST VIRGINIA

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#### WISCONSIN

Eau Claire Rossman, George Robert 17 Regis H. S. 318 Gilbert Ave.  
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Marshfield \*Felker, Ann Margaret 17 Columbus H. S. 810 W. 8th St.  
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Milwaukee \*Hager, Sandra Lee 17 Milwaukee Lutheran H. S. 3159 N. 38th St. 16  
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#### WYOMING

Cheyenne Whitney, Alan Robert 17 Cheyenne East H. S. Route 2, Box 875  
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Dr. Leo Paulissen, Asst. Prof., Dept. of Bacteriology, University of Arkansas,  
Fayetteville  
Colorado-Wyoming: Colorado-Wyoming Academy of Science  
To be announced  
Connecticut: Connecticut Academy of Arts and Sciences, Connecticut Science Teachers  
Association and University of Connecticut  
Dr. David J. Blick, Assoc. Prof., Dept. of Science Education, University of Connecticut,  
Storrs  
District of Columbia: Washington, D. C. Academy of Sciences  
Dr. Abner Brenner, Electrodeposition Section, National Bureau of Standards, Washington  
Florida: Florida Foundation for Future Scientists  
Dr. Luther Arnold, College of Education, University of Florida, Gainesville  
Georgia: Georgia Junior Academy of Science  
Mrs. Emily Simmons, Science Teacher, McEachern H. S., Rt. 1, Powder Springs  
Hawaii: Hawaiian Academy of Science  
Mr. Edwin Y. H. Chinn, Field Asst., Secondary Educ., 1037 S. Beretania St., Honolulu  
Idaho: Idaho Academy of Science  
To be announced  
Illinois: Illinois Academy of Science  
Dr. G. J. Froehlich, Dir., Bureau Inst. Research, 1011 W. Springfield, Urbana  
Indiana: Indiana Academy of Science  
Dr. Sears Crowell, Dept. of Zoology, Indiana University, Bloomington  
Iowa: Iowa Academy of Science  
Prof. Joe D. Woods, Assoc. Prof., Dept. of Chemistry, Drake University, Des Moines  
Kansas: Kansas Academy of Sciences  
Dr. S. Winston Cram, Chm., Physical Sciences Div., Kansas State Teachers College,  
Emporia  
Kentucky: Kentucky Academy of Science  
Dr. H. H. LaFuze, Head, Dept. of Biology, Eastern Kentucky State College, Richmond  
Louisiana: University of Southwestern Louisiana  
Dr. James R. Oliver, Dean, Graduate School, University of Southwestern Louisiana,  
Lafayette  
Maine: University of Maine  
Dr. George T. Davis, Prof. of Education, University of Maine, Orono  
Maryland: Maryland Academy of Sciences  
Dr. Thomson King, Exec. Vice President, Maryland Academy of Sciences, 400 Cathedral  
St., Baltimore  
Michigan: Michigan Junior Academy of Sciences, Arts and Letters  
Prof. C. L. Schloemer, 146 Natural Science Bldg., Michigan State University, E. Lansing  
Minnesota: Minnesota Academy of Science  
Dr. Arthur F. Nelson, Prof. of Chemistry, St. Cloud State College, St. Cloud  
Mississippi: Mississippi Academy of Sciences  
Dr. Clyde Q. Sheely, Chemistry Dept., Mississippi State University, State College  
Montana: Montana State College  
Dr. Adrien L. Hess, Assoc. Prof. of Mathematics, Montana State College, Bozeman  
Nebraska: Nebraska Academy of Sciences  
Dr. James A. Rutledge, Prof. of Secondary Education, University of Nebraska, Lincoln  
New Hampshire: Northern New England Academy of Science  
Dr. R. L. Blickle, Prof. of Entomology, University of New Hampshire, Durham  
New Mexico: New Mexico Institute of Mining and Technology  
Dr. John D. Hopperton, Prof. of Chemistry, New Mexico Institute of Mining and Technology,  
Socorro  
North Carolina: North Carolina Academy of Science  
Dr. Herbert Speece, Dept. of Mathematics, North Carolina State College, Raleigh  
North Dakota: North Dakota Academy of Science  
Prof. Fred Sands, School of Chem. Tech., North Dakota State University, Fargo  
Oklahoma: Oklahoma Science Service  
Dr. Horace E. Hoffman, Oklahoma Science Service, University of Oklahoma, Box 1120,  
Norman  
Oregon: Oregon Museum of Science and Industry  
Mr. Raymond E. Barrett, Educ. Dir., Oregon Museum of Science and Industry, 4015 S. W.  
Canyon Rd., Portland



Zucker, Robert Stephen 16 Central H. S. 1918 Delancey Pl. 3

TEXAS

Mercedes Morava, Jack Johnson 17 Mercedes H. S. 1542 S. Virginia Ave.

WASHINGTON

Vancouver Rogers, Charles Frederick 17 Fort Vancouver H. S. 805 N. W. 78th St.,  
P. O. Box 544

WISCONSIN

Marshfield \*Felker, Ann Margaret 17 Columbus H. S. 810 W. 8th St.

\* indicates girls  
H.S. indicates High School

HOME ADDRESS follows name of school  
AGE of winner follows name



SCIENCE SERVICE - 1719 N Street, N.W. - Washington 6, D. C.

*Washington Trip Winners  
of the  
Twenty-first Annual Science Talent Search®  
for the Westinghouse Science Scholarships and Awards*

The forty Washington trip winners of the 21st Annual Science Talent Search, among whom \$34,250 of Westinghouse Science Scholarships and Awards will be distributed, represent about 1% 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, administered by Science Service, 1719 N Street, N. W., Washington 6, D. C.

Ten girls and 30 boys (proportion determined by ratio of boys and girls completing entries) are being invited to Washington, D. C., for an all-expense trip March 1 through March 5, 1962, to attend the Science Talent Institute. Here five winners will be selected by the board of judges to receive one of the following Westinghouse Science Scholarships: \$7,500 (\$1,875 a year), \$6,000 (\$1,500 a year), \$5,000 (\$1,250 a year), \$4,000 (\$1,000 a year), \$3,000 (\$750 a year). The remaining 35 contestants will be given Westinghouse Science Awards of \$250 each.

The trip winners are 15 to 18 years of age and come from 29 cities in 12 states. They were picked by the judges from among 23,768 contestants of whom 3,559 completed their entries by taking a science aptitude examination, obtaining recommendations and writing a report on "My Scientific Project." Examinations were received from every state and the District of Columbia.

Of the 40 Twenty-first Annual Science Talent Search Winners, 35 ranked in the top 5% of their graduating class and 18 of these 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 25% of the entries this year.



## *Washington Trip Winners*

### ARIZONA

Phoenix      \*Barron, Mary Frances 17 West H. S. 3622 W. Rancho Dr. 19  
Williams, Harold Addison, Jr. 16 West H. S. 514 W. Coronado Rd. 3

### CALIFORNIA

Harbor City      Williams, Ronald James 17 Nathaniel Narbonne H. S. 2043 W. 255th St.,  
Lomita  
Los Angeles      Emmel, John Frederick 17 Dorsey H. S. 5341 West Blvd. 43  
Palm Springs      Harnage, Philip Lee 17 Palm Springs H. S. 66-719 Hatcht Cactus Dr.,  
Box 834, Desert Hot Springs  
Richmond      \*Marvin, Betty Joanne 16 DeAnza H. S. 5769 Friar Ct., El Sobrante  
San Bernardino      \*Jaime, Judith Marie 17 Pacific H. S. 6531 Merito Pl.

### FLORIDA

Coral Gables      Catlin, Jack Steven 17 Coral Gables Sr. H. S. 8120 S. W. 62nd Ave.,  
Miami 43  
Fruitstone, Mitchell Jay 17 Coral Gables Sr. H. S. 1512 Robbia Ave. 46  
\*Johnson, Jane Carol 17 Coral Gables Sr. H. S. 457 S. W. 19th Rd.,  
Miami 36  
Machtey, Michael Axel 17 Coral Gables Sr. H. S. 4435 S. W. 13th St.,  
Miami 34  
Melbourne      Cherniak, Christopher George 16 Melbourne H. S. 711 1st Ave., Sea  
Park, Eau Gallie

### ILLINOIS

Evanston      Barnes, Richard Allen 16 Evanston Twp. H. S. 825 Grey Ave.  
Greenville      Smith, Gerald Ralph 17 Greenville H. S. 324 Eastern Ave.

### KANSAS

Independence      Hills, Jack Gilbert 18 Independence Community College (H. S. Division)  
119 S. 12th St.

### MASSACHUSETTS

Fall River      Wojcik, Michael Marcel 16 B. M. C. Durfee H. S. 890 Dwelly St.  
Revere      Cook, Barry Paul 16 Revere H. S. 26 Arlington Ave. 51

### NEW YORK

Bayside      Zahler, Raphael William 16 Bayside H. S. 252-50 Brattle Ave., Little  
Neck 62  
Brooklyn      Felt, Carl 16 Erasmus Hall H. S. 18 Maple St. 25  
Fried, Herbert Ira 15 Erasmus Hall H. S. 1792 E. 22nd St. 29  
Grafstein, Peter Eric 16 Erasmus Hall H. S. 921 Washington Ave. 25  
\*Herzfeld, Miriam 16 Erasmus Hall H. S. 80 Woodruff Ave. 26  
Zuckerman, Ralph 16 Erasmus Hall H. S. 711 Ocean Ave. 26  
Katz, Charles Noel 16 Thomas Jefferson H. S. 495 Wyona St. 7  
Connery, Colin Alder 17 Jamaica H. S. 187-06 87th Dr. 32  
Jamaica      \*Grinell, Sheila Lynne 16 Bronx H. S. of Science 2802 Claflin Ave. 68  
New York      Strom, Robert Evan 15 Bronx H. S. of Science 1950 Andrews Ave. 53  
Queens Village      Magley, Paul Stanford 16 Martin Van Buren H. S. 84-24 248th St.,  
Bellerose 26  
Rome      Gordy, Leonard Howard 17 Rome Free Academy 1122 Laurel St.  
Schroon Lake      Haberly, Lewis Blinoh 17 Schroon Lake Central School Severance  
Snyder      Chapman, Clark Russell 16 Amherst Central Sr. H. S. 2343 Kensington  
Ave., Buffalo 26

### OHIO

Cincinnati      Walton, Robert Lee 17 Mariemont H. S. 3824 Homewood Rd. 27  
Elyria      \*Gates, Katherine Mary 17 Elyria Catholic H. S. 30 Sandy Lane Dr.  
Maumee      \*Hayes, Donna Gene 18 Maumee Valley Country Day School 3141 Oak  
Grove Pl., Toledo 13

### PENNSYLVANIA

Fleetville      \*Foley, Carol Lee 17 Benton Twp. H. S. Star Route, Waverly  
Philadelphia      Eyer, Joseph 17 Central H. S. 1606 N. 52nd St. 31