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## HONORS GROUP

IN

THE 24th ANNUAL

*Science Talent Search®*

for the  
**Westinghouse Science Scholarships  
and Awards**

1965



**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, 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 the list of 300 honor awards, 40 are being chosen as winners of the Washington trip. Among these \$34,250 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 the Science News Letter of February 6, 1965, 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 77 girls and 223 boys. The girls determine their own chances in the Science Talent Search in accordance with the number that enter. Of the Honors Group, 72% of the boys and 86% of the girls rank in the upper 5% in their high school classes. Among the 300 who won Honors, 245 belong to science clubs of which 123 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-four 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 20,000 science groups and more than 700,000 members affiliated with Science Clubs of America.

FOR RELEASE: WEDNESDAY AFTERNOON, JANUARY 20, 1965

## Honors Group in the Twenty-fourth Annual Science Talent Search<sup>®</sup>

		* indicates girls H. S. indicates High School	HOME ADDRESS is underlined AGE of winner follows name Title of project report submitted is on next line
ALABAMA			
Birmingham	Frost, Charles Alan 17	Ramsay H.S. <u>2901 10th Ct. S.</u> 35205 Change in Attention Span with Respect to High or Low Motivation to an Unrelated Central Stimulus	
Fort Payne	Kidd, Billy DeWayne 18	Fort Payne H.S. Kershaw Rd., Box 390, Rt. 1 An Application of Monte Carlo Mathematics <u>35967</u>	
Huntsville	Swift, Wesley Robert, Jr. 17	Huntsville H.S. <u>704 Dellwood Rd.</u> 35802 Effects of Mineral Matter on Origin of Life	
ALASKA			
Anchorage	Ader, Patricia Lynn 17	West Anchorage H.S. <u>30-360-G Cherry Dr.</u> , EAFB Growth and Developmental Adaption of <i>Microtus oeconomus</i> to the Arctic Environment as Compared to <i>Mus musculus</i>	
ARIZONA			
Phoenix	Hitsinger, Richard Nelson 17	Camelback H.S. <u>2517 E. Indianola</u> 85016 Electrochemical Phenomena During a Low-Pressure Glow Discharge	
	Harris, Karen Lynne 17	North Phoenix H.S. <u>4728 E. Vernon</u> 85008 Cytological Study of Homograft and Heterograft Reactions Using Skin Windows	
	Kinsman, Michael David 18	North Phoenix H.S. <u>3015 N. 18th Ave.</u> 85015 The Eminent Collision?	
CALIFORNIA			
Anaheim	Wewer, William Paul 17	Anaheim H.S. <u>638 Buttonwood St.</u> 92805 Collection and Analysis of Meteoritic Dust	
Barstow	Bell, Michael Walter 17	Barstow Union H.S. <u>1513 Church St.</u> 92311 Free Amino Acids in Normal and Regenerating Tissue	
Berkeley	*Behounek, Anne Christine 17	Presentation H.S. <u>2115 Roosevelt Ave.</u> 94703 Effects of an Electromagnetic Field on <i>Daphnia pulex</i>	
Bishop	*Moffitt, Mary Frances 17	Presentation H.S. <u>951 Ventura, Albany</u> 94707 Extraction and Identification of Carotenoids Present in two Strains of Bacteria	
	Kurtak, Daniel Charles 17	Bishop Union H.S. <u>Rt. 2, Box 74R</u> 93514 Effects of Certain Mammalian Hormones on the Metamorphosis of <i>Tenebrio molitor</i>	
Campbell	LeVitt, Richard Merton 17	Bishop Union H.S. <u>Rt. 2, Box 154</u> 93514 Electrical Effects in Freezing Saline Solutions	
Fairfield	Faust, Douglas Alan 17	Westmont H.S. <u>11891 Brookridge Dr., Saratoga</u> An Automatic Tic-Tac-Toe Computer <u>95070</u>	
Grossmont	Pelzmann, Robert Frank 17	Armijo Union H.S. <u>1106 Roosevelt</u> 94533 Effects of Electric Current on a Growing Sodium Chloride Crystal	
Long Beach	Smith, Albert Turner, Jr. 18	Grossmont H.S. <u>9654 Candy Lane, La Mesa</u> Photoelectric Photometry of BV 267 Auriga <u>92041</u>	
Manhattan Beach	Clough, Gene Atan 17	Long Beach Polytechnic H.S. <u>2990 Fashion Av.</u> 90810 Design and Construction of a Simple Game Playing Machine	
Oakland	Edmondson, Dermot Barclay 17	Mira Costa H.S. <u>1007 Dianthus St.</u> 90266 Possible Interaction Between Organic Radicals Upon Irradiation of Amino Acids	
Oceanside	*Fitzgerald, Laurel Jacqueline 17	Oakland H.S. <u>1715 Clemens Rd.</u> 94602 Investigation of <i>Saprolegnia ferax</i>	
	Cowen, Steven James 17	Oceanside H.S. <u>2026 S. Freeman</u> 92054 Carbon Monoxide Detector	

- Palos Verdes Estates \*Crampton, Terri Teresa 17 Marymount H.S. 630 S. Gertrude, Redondo Beach 90277  
Inquiry Into the Physical and Biological Properties of Color Perception
- \*Sallo, Mary Elizabeth 16 Marymount H.S. 1 Crest Rd., E., Rolling Hills  
Isolation, Cell Specificity and Immunological 90274  
Characteristics of Isozymes in Lactate Dehydrogenase
- Bailey, Steven Walter 17 Palos Verdes H.S. 700 Cloyden Rd. 90275  
Variations in Polysomal Distribution in the Growth Stages of *Tetrahymen pyriformis*
- Riverside \*Stanfield, Sharon Walker 17 Ramona H.S. 10058 Magnolia Ave., Arlington  
Determination of a New Strain of Tobacco Rattle Virus 92503  
by Attempted Transmission With *Trichoderma christi*
- San Gabriel Crandall, Richard Eugene 17 San Gabriel H.S. 5224 Young Ave. 91776  
Lattice Points in Dimensions
- McCammon, James Andrew 17 San Gabriel H.S. 1032 W. Roses Rd. 91775  
Photochemical Oxidation of Marine Ammonia
- San Francisco Hassid, Edwin Joseph 17 Lowell H.S. 2075 9th Ave. 94116  
Stability of the Messenger RNA Template of Ferritin in Rat Liver
- Saratoga Smith, Gene Ward 17 Saratoga H.S. 13408 Christie Dr. 95070  
An Extension of the Concept of the Derivative of a Function
- Sunnyvale \*McNew, Sandra Lee 16 Sunnyvale H.S. 758 Carolina Ave. 94086  
An Investigation of Mechanisms Facilitating Bacterial Resistance to Ultraviolet Light
- Woodland Hills Gering, Merte Ross 16 William H. Taft H.S. 18100 Karen Dr., Tarzana  
Bacterial Metabolism of Trigoneiline 91356
- Howard, Larry Dean 17 William H. Taft H.S. 20271 Mobile St., Canoga Park  
Differential Correction of Satellite Orbits 91306
- COLORADO
- Denver Rosenberg, James Edward 17 George Washington H.S. 1960 Locust St.  
Theory of Triangle Numbers 80220
- CONNECTICUT
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Analysis of Two Independent Methods of Arresting Mental Illness
- West Hartford Nathanson, James Andrew 17 William H. Hall H.S. 4 Brookfield Rd. 06107  
Deoxyribonucleic Acid-Induced Reduction of Virulence in *Staphylococcus aureus*
- DELAWARE
- Wilmington \*Lindsey, Carol Susan 18 Brandywine H.S. 1207 Graylyn Rd. 19803  
Nucleotide Chain Length and Interferon Production
- Willing, Joseph Charles 17 Brandywine H.S. 110 Canterbury Dr. 19803  
Growth and Properties of Metallic "Whiskers"
- DISTRICT OF COLUMBIA
- Washington \*Chin, Carolyn Sue 17 Eastern H.S. 414 17th St., S.E. 20003  
Effects of Radiation on Specific Plants
- Ross, Peter Stephen 17 Woodrow Wilson H.S. 3540 Van Ness St., N.W.  
Blood Glucose Levels in Inbred Rabbits 20008
- FLORIDA
- Coral Gables \*Budner, Sharon Joy 17 Coral Gables Sr. H.S. 2040 S.W. 20th St., Miami  
Comparative Evaluation of Clinical Tests for 33145  
Pregnancy Among Humans
- Kramer, Michael Stuart 16 Coral Gables Sr. H.S. 6321 S.W. 63rd Ct.,  
Effect of Gamma Radiation on Mold S. Miami 33143  
Populations in *Litchi chinensis*
- Radomski, Mark Stephen 16 Coral Gables Sr. H.S. 5350 S.W. 84th St., Miami  
Three-Dimensional Matrices
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Calcium Absorption as a Diagnostic Test Key Biscayne 33149
- \*Wirkus, Winifred Lydia 16 Coral Gables Sr. H.S. 8501 S.W. 53rd Ave.  
Understanding of Children's Misarticulated Miami 33143  
Speech by Children and Adults
- Hialeah \*Gorek, Judy Kathleen 16 Hialeah H.S. 765 E. 20th St. 33013  
Effect of Acid Strength and Concentration on Crystal Growth
- Jacksonville Page, William Steven 17 Hialeah H.S. 5701 N.W. 117th St.  
ALTRAN Compiler Language
- Kolitz, Stephan Edward 17 Terry Parker H.S. 2626 Blueberry Lane 32211  
Graphing of Complex Numbers
- Norman, Josephus Gaston, Jr. 17 Terry Parker H.S. 2731 Pine Summit Dr.,  
Ketone Derivatives of Heteropoly Acids East 32211
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Myxosporidian Parasite of the Pinfish
- Stahl, Glenn Michael 16 Southwest Miami H.S. 1230 S.W. 99th Ave. 33144  
Carotenoids of *Pseudoplexaura crassa*
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Determination of Linkage Between Two Genetic Markers
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Electrophoretic Pattern in Induced Autoimmune Thyroiditis
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- Truitt, James Pennington, Jr. 18 Oak Ridge Jr.-Sr. H.S. 901 Iron Oak Dr.  
Cellular Localization of Rabbit Gamma-G Globulin 32809  
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Gaseous Ions and Plant Growth
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Lemma: Its Cultivation for Possible Use as Food
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Properties of the Tannic Acid-Cerous Nitrate System
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Extracellular L-Lysine Synthesis by *Ustilago maydis* 30305
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Alkaloid Studies of Selected Fungi
- \*Farnsworth, Florence Louise 18 D'Youville Academy 176 Bolling Rd., N.E.  
Hyperbolic Functions: Some Original Observations Atlanta 30305
- HAWAII
- Honolulu Miyashiro, Ralph Tadao 17 Punahoa School 467 Lanae Way, Kailua 96734  
Determination of Body Densities and Swimming Capabilities of Scombrid Fish
- Wailuku Perry, Richard Michael 17 Baldwin H.S. 366 Papa St., Kahului 96793  
Difference Equations and Associated Functions
- ILLINOIS
- Arlington Heights Bartlow, Bruce Gene 17 Arlington H.S. 1722 Hickory Ave., Prospect Hts.  
Absolute Value as Related to Second Degree Equations
- Bagnuolo, William George 16 St. Viator H.S. 272 Plymouth Dr., Inverness  
Method for Determining the "Roughness" of Lunar Areas
- Chicago Mellick, Paul Joseph 16 Amundsen H.S. 5234 N. Virginia Ave. 60625  
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- Weinstein, Mark Ira 16 Bowen H.S. 1651 E. 86th St. 60617  
Mathematical Derivation for a Sequential Switching Circuit
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Effects of Radiation on the Sex Ratio of *Drosophila melanogaster*
- Warner, Dale James 18 Kelly H.S. 5240 S. McVicker 60638  
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- Losoff, Alan Robert 16 Lane Technical H.S. 4926 N. Springfield 60625  
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Separation of Amino Acids by Paper Chromatography
- \*Kiupelis, Antoinette Eileen 17 Washington H.S. 3434 E. 114th St. 60617  
Ciphering by the Use of Matrix Algebra

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		*Wright, Barbara Ann 17 Northwestern Sr. H.S. <u>4212 28th St., Mount Rainier</u> <u>20822</u> Red and Far-Red Light; Their Effect on Germination	
			<b>MASSACHUSETTS</b>
		Madison, Michael Timothy 17 Phillips Academy <u>915 Oak Ave., Davis, Calif.</u> Excretion of an Iron Reducing Agent by Corn and Beans <u>95616</u>	
		Flashman, Stuart Milton 16 Boston Latin School <u>45 Lyndhurst St., Dorchester</u> <u>02124</u> Sequence of the Carbohydrate Moley of Fibrinogen	
		Kennedy, Joseph William 17 Boston Latin School <u>176 Corey St., West Roxbury</u> <u>02132</u> Investigation of the Galactic Structure in the Solar Neighborhood by Means of Galactic Clusters	

Cambridge Egidio, Dino Anthony 16 Cambridge High and Latin School 100 Gore St. 02141  
 Cis-Trans Isomerism in Complexes of Diethylenetriamine

Fall River Walczyk, Frederick Walter 17 B.M.C. Durfee H.S. 542 Smith St. 02721  
 Study of Cryptogams in an Extraterrestrial Environment

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 Analysis of an n-Dimensional Euclidean Space by the  
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 Relationship Between Shifts in Visual and Proprioceptive  
 Localization Caused by Prism-Induced Reorientation

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 Synthesis of a New Vinyl Monomer

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 Extraction and Identification of Nucleic Acid

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St. Cloud Luker, Mark Albert 17 Technical H.S. 801 5th Ave., S. 56301  
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Minnesota: Minnesota Academy of Science  
Dr. Arthur F. Nelson, Chm., Dept. of Chemistry, St. Cloud State College, St. Cloud

Mississippi: Mississippi Academy of Sciences, Inc.  
Dr. Clyde Q. Sheely, Prof., Chemistry Dept., Box 574, Mississippi State University, State College

Missouri: Missouri Science Talent Search  
Dr. David Neff, Head, Chemistry Dept., School of the Ozarks, Point Lookout

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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  
Dr. Fred H. Sands, Assoc. Prof. of Chemistry, North Dakota State University, Fargo

Oklahoma: Oklahoma Science Talent Search  
Dr. Horace H. Bliss, Dept. of Chemistry, University of Oklahoma, Norman

Oregon: Oregon Museum of Science and Industry  
Dr. Raymond E. Barrett, Education Dir., Oregon Museum of Science and Industry,  
4015 S.W. Canyon Rd., Portland

Pennsylvania: Pennsylvania Academy of Science  
Dr. William A. Uricchio, Head, Dept. of Biology, Mount Mercy College, Pittsburgh

Rhode Island: Rhode Island Schools' Science Fair Committee  
Mr. George W. Gallipeau, Jr., Physics Instructor, Barrington High School, Barrington

South Carolina: South Carolina Academy of Science  
Dr. Donald G. Kubler, Dept. of Chemistry, Furman University, Greenville

South Dakota: South Dakota State College  
Dr. Elmer R. Johnson, Prof., Chemistry Dept., South Dakota State College, Brookings

Tennessee: Tennessee Academy of Science  
Mr. James L. Major, Physics Teacher, Clarksville High School, Clarksville

Texas: Texas State Science Talent Search  
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Vermont: University of Vermont  
Dr. George Chapman Crooks, Assoc. Prof. of Chemistry, University of Vermont, Burlington

Virginia: Virginia Academy of Science  
Prof. Edgar V. Russell, Jr., Assoc. Prof. of Chemistry, Virginia Polytechnic Institute, Blacksburg

Washington: Washington State Science Talent Search Committee  
Dr. Hugh W. Johnston, Assoc. Prof. of Chemistry, Whitworth College, Spokane

West Virginia: West Virginia Academy of Science  
Prof. Douglas B. Williamson, Assoc. Prof. of Physics, West Virginia University, Morgantown

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\*Indicates girls  
H.S. indicates High School

HOME ADDRESS follows name of school  
AGE of winner follows name



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

*Washington Trip Winners*

*of the*

*Twenty-fourth Annual Science Talent Search®  
for the Westinghouse Science Scholarships and Awards*

The forty Washington trip winners of the 24th 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, D.C. 20036.

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 February 24 through March 1, 1965, 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 34 cities in 21 states. They were picked by the judges from among 22,692 contestants of whom 2,939 completed their entries by taking a science aptitude examination, obtaining recommendations and writing a report on their science project. Completed entries were received from 50 states and the District of Columbia.

Of the 40 Twenty-fourth Annual Science Talent Search Winners, 36 ranked in the top 5% of their graduating class and 15 were first, second or third. Most of the winners are members of science clubs and many of them are club presidents or other officers. Most of their clubs are affiliated with Science Clubs of America. Girls accounted for 25% of the entries this year.

## *Washington Trip Winners*

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San Francisco Hassid, Edwin Joseph 17 Lowell H.S. 2075 9th Ave. 94116  
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