

**HONORS GROUP**

**IN**

**THE 23rd ANNUAL**

*Science Talent Search<sup>®</sup>*

**for the**

**Westinghouse Science Scholarships  
and Awards**

**1964**



**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 314 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 8, 1964, 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 75 girls and 239 boys. The girls determine their own chances in the Science Talent Search in accordance with the number that enter. Of the Honors Group, 68% of the boys and 78% of the girls rank in the upper 5% in their high school classes. Among the 314 who won Honors, 263 belong to science clubs of which 216 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-three 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: THURSDAY AFTERNOON, JANUARY 23, 1964

## Honors Group

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

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

#### ALABAMA

Birmingham	Fieselman, William Henry II 17 West End H.S. <u>1201 15 Way S.W. 35211</u> Comparison of Four Types of Modulation to Determine Their Suitability for Space Communications
Decatur	*Marshall, Madilyn Mae 17 Decatur H.S. <u>819 8 Ave. S.E.</u> Experimentation in growth of <u>Paramecium aurelia</u>
Sylacauga	*Houston, Gail Maxine 17 Sylacauga H.S. <u>P.O. Box 205 Goodwater Rous Sarcoma - Treatment with Methotrexate and Preparation of a Vaccine</u>
Troy	Steele, John Allen 16 Charles Henderson H.S. <u>Banks 36005 Effects of Strontium and Barium on Actively Growing Roots of Empire Cotton</u>

#### ARIZONA

Phoenix	Hayward, James Lawrence 17 North Phoenix H.S. <u>2510 N. Richland St. 85006</u> Construction and Operation of an Electron Resonance Spectrometer
	Sinclair, Stephen Hayward 18 North Phoenix H.S. <u>2021 N. Alvarado Rd. 85004</u> Hypothermia as a Solution to Interstellar Travel
	Kemper, Morris Brown 16 Washington H.S. <u>3301 W. Cactus Wren Dr. 85020</u> Effects of Centrifugal G-Forces on a Rat's Discrimination
	Schoolland, John Bland 17 West H.S. <u>2744 N. 20 Dr. 85009</u> Decomposition of Ascorbic Acid Due to Ultraviolet Radiation
Tucson	Divis, Allan Francis 17 Palo Verde H.S. <u>6861 Nasumpa Dr. 85715</u> Investigation of Seebeck Effect in Elementary Thermocouples

#### ARKANSAS

Little Rock	Moore, Charles Robert 17 Central H.S. <u>1820 S. Taylor 72204</u> Effects of Cold Exposure on Frog Liver Mitochondria <u>in situ</u>
Blythe	Logan, Burl Grant 17 Palo Verde H.S. <u>780 W. California St. 92225</u> New Confinement Scheme for Thermonuclear Plasmas
Claremont	*Dart, Ruth Northrop 17 Claremont H.S. <u>421 W. 8 St. 91711</u> Flypower
Fairfield	Bowen, Robert Edward 16 Armijo Joint Union H.S. <u>721 Nevada</u> Certain Sequences of Always Composite Integers
Folsom	Garen, Eric Robert 16 Folsom Sr. H.S. <u>2533 Sarda Way, Rancho Cordova 95670</u> Summary of Experiments Concerning Regeneration of Planaria <u>Dugesia dorotocephala</u>
Glendale	Bell, Robert Lee 17 Hoover H.S. <u>460 W. Doran Apt. 317 91203</u> Study of Flame Velocities of Aikane Series of Hydrocarbons
Goleta	*Kelley, Sandra Lee 17 San Marcos H.S. <u>3001 Puesta del Sol, Santa Barbara 93105</u> Determining the Validity of the Equilibrium Constant by Tracer Method

La Mesa	Patterson, Gary David 17 Helix H.S. <u>7239 Juliette Pl. 92041</u> NMR Spectroscopy - Relation of the Ionic Character of a Chemical Bond to Proton Chemical Shifts
Los Angeles	Folb, Martin Alan 17 Fairfax H.S. <u>651 N. Kilkea Dr. 90048</u> Modulation of Optical Masers Through Application of Paramagnetic Resonance and the Faraday Rotation Effect
	Kourilsky, Gregory Nicolas 17 Fairfax H.S. <u>927 N. Wilcox Ave. 90038</u> Mathematical and Topological Analysis of Knots
Modesto	Duncan, Charles Vansant III Grace M. Davis H.S. <u>1512 Del Vista</u> Is Thermonuclear Space Propulsion Possible?

Oakland	Wray, Robert Edward 16 Fremont H.S. <u>3005 Courtland Ave.</u> 94619 Effect of Polydeoxythymidylate and Polydeoxyadenylate on the Synthesis of Polyribonucleotides
Palo Alto	Briggs, Richard Smith Jr. 17 Cubberley Sr. H.S. <u>121 Ferne</u> 94306 Extension and Proof of the Relation of Pascal's Triangle to the Binomial Expansion $(a + b)^n$ Kaku, Michael 16 Cubberley Sr. H.S. <u>750 Christine Dr.</u> 94306 Creation of Antimatter
Palos Verdes Estates	King, Jeffry Maurice 17 Palos Verdes H.S. <u>4123 Stalwart Dr.</u> , Palos Verdes Peninsula 90274 Resonance Properties of ADP Crystals
Pasadena	Elgin, Bruce Gardner 17 John Muir H.S. <u>2795 N. Holliston Ave.</u> , Altadena 91001 Population Genetics
Reseda	*Goldman, Judith Diane 17 Reseda H.S. <u>18317 Kittridge St.</u> Interactions Between the Prophage and Episomic Phage in Lysogenic Bacteria
San Diego	Maurer, Harvey Noble 17 San Diego H.S. <u>3937 1/2 Park Blvd.</u> 92103 Development of Optical Adjustment System and Studies into Various Power Input Systems for the Neon-Helium Optical Maser
San Francisco	Fisk, Stephen Thomas 17 Abraham Lincoln H.S. <u>2270 44 Ave.</u> 94116 Complete Planar Graphs and the Four-Color Theorem
San Mateo	Rose, Daniel 17 Hillsdale H.S. <u>717 Laurelwood Dr.</u> 94403 Effects of Gibberellic Acid on Plants Grown by Hydroponics
Sunnyvale	*Clark, Andora Ellen 16 Sunnyvale H.S. <u>3020 Cameron Way</u> , Santa Clara Ambidextrous Virus - TMV Causes Curly Leaf
Walnut Creek	*Collen, Roberta Joy 16 Las Lomas H.S. <u>4155 Walnut Blvd.</u> 94598 Analysis of $Hir X F^-$ Crosses and Organization of Genetic Material of <u>Escherichia coli</u> K12
<b>COLORADO</b>	
Palisade	Newton, Stanley Albert 17 Palisade H.S. <u>R.R. 1</u> 81526 Attempted Chemical Reaction of Helium and Iodine
<b>CONNECTICUT</b>	
Bloomfield	Glassman, Robert David 17 Bloomfield H.S. <u>60 Elsworth Dr.</u> 06002 Effect of DNA Treatment on Malignant Growth in Swiss Mice as Determined Through Biological Parameters
Enfield	*Krochalis, Suzanne Marie 17 Our Lady of the Angels Academy <u>1439 Enfield St.</u> 06030 Relationship of Ester Bond Linkage to the Physical Properties of the Collagen Molecule
<b>DISTRICT OF COLUMBIA</b>	
Washington	Shapiro, Stanley Jay 17 Woodrow Wilson H.S. <u>4317 Brandywine St. N.W.</u> Optimum Concentrations for Corrosion Inhibitors 20016
<b>FLORIDA</b>	
Coral Gables	Grossman, Terry Alan 16 Coral Gables Sr. H.S. <u>1350 S.W. 60 Ct.</u> , Miami S-Adenosylmethionine as the Methyl Donor in the Aberrant Catabolism of Serotonin 33144
Gainesville	Roberts, Stephen Allen 17 Coral Gables Sr. H.S. <u>9 Pinta Rd.</u> , Miami Morphogenesis of <u>Nerita fulgurans</u> 33133
Hialeah	May, Michael Love 17 Gainesville H.S. <u>1515 N.W. 7 Pl.</u> 32601 Control of Feedback Inhibition of Purine Synthesis by Methyl Purines and Pyrimidine Nucleosides
Jacksonville	Rhines, Walden Clark 17 Gainesville H.S. <u>1540 N.W. 37 Terrace</u> Determination of Solid Solubility of Zinc in Alpha Nickel at Room Temperature by Use of Electrodeposition
Largo	*Doubraiva, Gloria Jean 17 Hialeah Sr. H.S. <u>125 E. 41 St.</u> 33012 Use of the Ouchterlony Technique for the Determination of Type-Specific Antibodies in the Sera of Rheumatic Patients
Miami	*Wells, Nancy Mauldin 17 Terry Parker H.S. <u>7815 Ft. Caroline Rd.</u> 32211 Electrophoretic Comparisons of Vertebrate Bloods
	*Green, Kathleen Elizabeth 17 Largo Sr. H.S. <u>486 W. Overbrook St.</u> Measurement of the Redistribution of Xanthophyll in the Developing Chicken Egg 33540
	Richter, Ian Arthur 17 Miami Central H.S. <u>7950 Hawthorne Ave.</u> , Miami Experimental Flying-Spot Electronic Microscope Beach 33141
	*Ofswitz, Clare Harriet 17 Miami Sr. H.S. <u>1548 S.W. 3 St.</u> 33135 Studies on Potato Respiration
Miami Beach	Kaye, David Harris 16 Miami Beach Sr. H.S. <u>3400 Sheridan Ave.</u> 33140 Division by Zero
North Miami	Konering, Karsten Fredrich 17 North Miami Sr. H.S. <u>1481 N.E. 160 St.</u> , Role of Carotene in Phototropism in <u>Avena sativa</u> N. Miami Beach 33162
Palatka	Solomon, Edward Ira 17 North Miami Sr. H.S. <u>1200 N.E. 160 St.</u> , Use of Two-Dimensional Micro-Thin Layer Partition N. Miami Beach Chromatography in the Separation and Estimation of Indoles Extracted from Urine
Rockledge	Monroe, Carl Bliss 17 Central Academy <u>Rt. 1, Box 44</u> , Hawthorne 32640 Survey of Tryptophan Pyrolase Activity in Mice
St. Petersburg	Olsen, Neil Erling 17 Cocoa H.S. <u>203 Monroe St.</u> , Cape Canaveral 32920 Analysis of Liquid Oxide Solvents
Satellite Beach	*Herr, Judith Lauren 17 Northeast H.S. <u>2823 37 Ave. N.</u> 33713 Analytical Study of a Martian Phenomenon
Tallahassee	*Reap, Lucy Teresa 17 Satellite H.S. <u>145 S.E. 2 St.</u> Multiple Sclerosis Studies <i>in vitro</i> and <i>in vivo</i> Boynton, William James III 17 Leon H.S. <u>Rt. 1, Box 38-J</u> 32331 The Problem Seed - Pensacola Bahia
<b>GEORGIA</b>	
Athens	Foster, David Franklin 17 Athens H.S. <u>Whit Davis Rd.</u> 30601 Improving the Accuracy of the Numerical Integration of Differential Equations
Brunswick	Hunter, Howard Owen III 17 Glynn Academy <u>322 Reynolds St.</u> 31520 Investigation of Effects of Terpenes on Arteriosclerosis in Rabbits
Washington	Willingham, Robert Marion, Jr. 17 Washington-Wilkes H.S. <u>Lexington Rd.</u> Investigation of Tessellation in Chiaolite
<b>HAWAII</b>	
Honolulu	*Meyer, Judith Louise 16 Radford H.S. <u>1327 Anapa St.</u> 96818 Effects of Hydrogen-Ion Concentration on Sporangial Germination in <u>Phytophthora parasitica</u>
	*Porter, Trudy Ann 17 Radford H.S. <u>603 Signer Blvd.</u> , Hickam AFB Combined Effects of Chemical Mutagens and Irradiation on Cellular Death
	*Kimura, Judy Tsutae 17 Roosevelt H.S. <u>2831 Pali Hwy.</u> 96817 Color Changes of the <u>Hibiscus tiliaceus</u>
<b>ILLINOIS</b>	
Aurora	Kline, David Mathew 17 West Sr. H.S. <u>1042 Plum St.</u> 60506 Relationships of the Sides and Diagonals of Internal Parallelograms
Chicago	Starr, Berton S. 17 Wm. J. Bogan H.S. <u>8209 S. Kildare Ave.</u> 60652 Calculus in Physics
	Berry, Michael James 16 DePaul Academy <u>5843 Giddings</u> 60630 Determination of Amino Acid Composition of Proteins
	*Peters, Elaine Joan 17 Kelly H.S. <u>3018 W. 38th Pl.</u> 60632 Polarography
Edwardsville	Resnick, Lawrence Malcolm 15 S. T. Mather H.S. <u>5727 N. Washtenaw Ave.</u> Relationship of Cholesterol to the Inhibition of the ATP-ASE Enzyme System by Lecithinase D. 60645
Evanston	Lewin, Barry Alan 17 Nicholas Senn H.S. <u>6230 Kenmore Ave.</u> 60626 Preliminary Report on Oxygen Metabolism of Killer <u>P. aurelia</u> in Semi-Defined Medium
Glen Ellyn	Campbell, Gary Thomas 17 Edwardsville H.S. <u>212 W. Lake Dr.</u> Separation of Proteins by Zone Electrophoresis
Highland Park	Carhart, Raymond Edgar 17 Evanston Twp. H.S. <u>3021 Hartzell St.</u> 60201 Experimentation with the Land Two-Color Effect
LaGrange	Swibel, Steven Warren 17 Evanston Twp. H.S. <u>3839 White Cloud Dr.</u> , Skokie Potentiometric Titrations
	*Allen, Victoria Ann 15 Glenbard West H.S. <u>795 Park Blvd.</u> 60137 Designing a Scattering Chamber for a Cyclotron and Writing a Computer Program for Angular Correlation Studies
	Rosenstein, Marc Jon 17 Highland Park H.S. <u>1063 Golf Ave.</u> Investigations into the Mechanism of Plant Growth
	Ingle, James Davis, Jr. 17 Lyons Twp. H.S. <u>4021 Clausen</u> , Western Springs 60558 Gas Chromatographic Study of the Volatile Constituents Springs of Orange Oils and Their Changes During Storage

Kline, Laurence James 17 Lyons Twp. H.S. 646 N. Park Rd. 60528  
     Growth Study of Euglena Using Spectrophotometer  
 Williams, Kent Alan 17 Lyons Twp. H.S. 812 S. Kensington Ave. 60525  
     Growth of Crystals in Gels  
**LaGrange Park** \*Gloss, Mary Helen Carol 17 Nazareth Academy 1960 Curtiss, Downers  
     Study of Chelation Grove 60515  
**Normal** \*Martens, Claire Louise 17 University H.S. 1005 W. Hovey 61761  
     Albino Corn  
**Oak Park** Ross, Dennis Warren 17 Oak Park-River Forest H.S. 1125 N. Oak Park Ave.  
     Effects of Growth Control Compounds on Algae 60302  
 Schauss, Robert Peter, Jr. 17 Oak Park-River Forest H.S. 633 Park Ave.,  
     Distribution of *Distichlis stricta* in a Saline Prairie River Forest 60305  
**Park Ridge** Wilson, Lawrence Wesley 17 Maine Twp. H.S. East 617 N. Washington  
     Active Transport of Ions Across Cell Membranes - 60068  
     Specific Study of Kidney Membranes  
**Riverside** \*Scott, Marilla Doreen 17 Riverside-Brookfield H.S. 2919 Prairie Ave.,  
     Analysis of Excessive Body Weight Brookfield 60513  
**Rockford** Rowland, John Robert 17 East Rockford Sr. H.S. 404 Sunrise Lane 61107  
     Application of Sterics and Field Intensity Measurements  
     to Short Term Weather Forecasting  
  
**INDIANA**  
**Bloomington** Galser, John E. 18 University H.S. 1901 E. Hunter  
     Experimental Research in the Development of the  
     Pressure System for a Laboratory Rocket  
**Garrett** Freeze, Hudson Harry 17 Garrett H.S. 601 S. Randolph St.  
     Ecological Study of Bacteria and Lichens in a  
     Simulated Martian Environment  
**Hartford City** Dunsizer, Earl Stanley 17 Hartford City H.S. 201 Meadow Lane  
     Interhalogens and Polyhalides  
**Indianapolis** \*Gano, Deborah Ann 17 George Washington H.S. 2208 N. Kessler Blvd.  
     Microbial Enzymes that Produce Rancidity 46222  
     in Selected Fats and Oils  
**Muncie** Wiseman, Gregory Allen 17 Burris Laboratory School 309 S. Nichols Ave.  
     Study of Red Radish Pigment 47303  
**New Haven** \*Keller, Rhea Louise 18 New Haven H.S. 3232 Congress Ave.,  
     Subcutaneous Cell-Free Induction of Malignant Fort Wayne 46806  
     Melanoma in the Syrian Hamster and Mitochondrial Production  
     of Melanin on the Chorioallantoic Membrane  
  
**IOWA**  
**Bettendorf** Grieshaber, Harold Kent 17 Bettendorf H.S. 1528 Robeson Ave.  
     Effect of Exposure to a Magnetic Field on the  
     Metabolic Efficiency of Small Mammals  
**Boone** \*Healy, Rita Mary 17 Sacred Heart H.S. 1322 Union St. 50036  
     Psychological Factors Involved in the Urban Drift  
  
**KANSAS**  
**Lawrence** Merrill, Russell Blair 17 Lawrence H.S. 224 Dakota St. 66044  
     Determination of Locus of the Gene Causing  
     Baldness in *Drosophila melanogaster*  
**Merriam** Tickamer, Cecil Henry II 17 Shawnee-Mission North H.S. 5800 Reeds Rd.,  
     Effect of External pCO<sub>2</sub> Variations on the Rate of Mission 66202  
     Regeneration of *Dugesia tigrina* and *Triturus viridescens* *viridescens*  
**Topeka** Trewolla, John Charles 17 Shawnee-Mission North H.S. 5708 Roeland Dr.,  
     Coefficient of Magnetostriiction Shawnee Mission 66205  
     \*Judy, Stephanie Ann 17 Topeka H.S. 1525 MacVicar 66604  
     How Does a High Fat Diet Affect Blood Viscosity?  
**Wichita** Brand, John Henry II 17 Southeast H.S. 1039 Silverdale 67218  
     Spectral Variation of Helium Gas Discharge  
     \*Doherty, Susan Carol 17 Wichita H.S. East 724 S. Terrace Dr. 67218  
     Influence of Borate Ion on Crystalline Habit of  
     Sodium Chlorate and Sodium Bromate Crystals  
     \*Hill, Margaret Catherine 17 Wichita H.S. East 2740 Gentry Dr. 67220  
     Determining the Location of Gibberellin-Like Hormones in Higher  
     Plants and Their Effect on Growth of Bean and Cucumber Plants

**KENTUCKY**

Bein, Michael 17 J. M. Atherton H.S. 1548 Cherokee Rd. 40205  
     Investigation of the Theory of Partitions and an  
     Attempted Solution of the Partition Problem  
 Doering, Robert Reid 17 Sallie Phillips Durrett H.S. 1400 Falcon Dr.  
     Selective Excitation X-Ray Analysis  
 Batteau, Allen Wayne 17 Waggener H.S. 4012 Massie Ave. 40207  
     Electronic Effects on the Hydrolysis Rates  
     of Certain Carboxylic Esters  
  
**LOUISIANA**  
 \*Laborde, Alice Louisa 17 Marksville H.S. Rt. 2, Box 305  
     Investigating Wave Phenomena  
**New Orleans** Bennett, Samuel Eugene 17 Benjamin Franklin H.S. Apt. H, Bldg. 112  
     Isolation of Adrenalin Naval Station 40  
 Brickman, Fred Edward 17 Benjamin Franklin H.S. 4319 S. Johnson St.  
     Isolation of Glycoproteins 70125  
 Lambert, Allyn Charles 17 Benjamin Franklin H.S. 509 Fern St. 70118  
     Infrared Sensitization of Photographic Emulsions  
 Larkin, John Joseph 17 Benjamin Franklin H.S. 318 Broadway  
     Scintillation Detection of Alpha Radiation  
 Nemec, Frank Albert, Jr. 17 Benjamin Franklin H.S. 3670 Gentilly Blvd.  
     Potentiometric Titration 70122  
  
**MARYLAND**  
**Aberdeen** \*Kuhn, Margaret Wendy 17 Aberdeen H.S. 634 Burkley Ave. 21001  
     Studies of Relative Rates of Some Reactions  
     Catalyzed by Baker's Yeast  
**Baltimore** Goebel, Robert Howard 18 Baltimore Polytechnic Institute 1026 Upnor Rd.  
     Problem of Canting a Rifle 21212  
**Bethesda** Jaffin, Henry Michael 17 Bethesda-Chevy Chase H.S. 2949 Terrace Dr.,  
     Chemically Induced Mutations in *Monilia fructicola* Chevy Chase 20015  
 Polinger, Arnold Lee 17 Bethesda-Chevy Chase H.S. 3302 Shirley Lane,  
     Polarographic Analysis of Anions Chevy Chase 20015  
 \*Reines, Madeleine Susan 17 Bethesda-Chevy Chase H.S. 2206 Ross Rd.,  
     Paper Chromatography as a Method of Qualitative Silver Spring 20910  
     and Quantitative Analysis of Amino Acids  
 \*Weiss, Natalie Ann 17 Bethesda-Chevy Chase H.S. 3612 Raymond St.,  
     Effects of the Herbicide 3-Amino-1, 2, 4-Triazole Chevy Chase 20015  
     on *Escherichia coli*  
 Goldstein, Mark Allan 17 Walter Johnson H.S. 4998 Battery Lane #307  
     Iron Metabolism Studies Using Fe<sup>59</sup> as Tracer Isotope 20014  
**Boonsboro** Maiorana, James Anthony 17 Boonsboro Sr. H.S. Rt. 2 21713  
     Method of Representing Arrays of Abstract Symbols or Values  
**Hyattsville** \*Dryden, Leona Margaret 17 Northwestern Sr. H.S. 6112 43 St.  
     Study of Plant Pigments by Paper Chromatography  
 Epstein, Robert Leonard 17 Northwestern Sr. H.S. 1217 Chillum Manor Rd.,  
     Radiation Dosimeter for Neutron Flux in 20783  
     Mixed Nuclear Radiation Fields  
 \*Orellana, Tessa Denise 17 Northwestern Sr. H.S. 14001 Columbia Rd.,  
     Phenolic Compounds in the Peel and Pulp of Green Burtonsville 20730  
     and Ripe Bananas in Relation to Bacterial and Fungal Rot  
**McDonogh** Schnitzer, Thomas Jack 17 McDonogh School 3307 Terrapin Rd.,  
     Transfer of Innate Behavior in Planaria by Diet Baltimore 21208  
**Silver Spring** Hermach, William Francis 18 Montgomery Blair H.S. 2415 Eccleston St.  
     Corona Wind Loudspeaker 20902  
 Winters, Stephen Marron 17 Montgomery Blair H.S. 1608 Grace Church Rd.  
     Report on Some Original Work Concerning Goldbach's Conjecture  
 Fookson, Jeffrey Edward 17 Northwood H.S. 10809 Huntley Pl. 20902  
     Sonic Chemiluminescence  
  
**MASSACHUSETTS**  
**Amherst** Lovins, Amory Bloch 16 Amherst Regional H.S. Mill Lane 01002  
     Medium-Resolution NMR Studies  
**Andover** Skinner, Mitchell Allen 17 Andover H.S. 67 Walnut Ave.  
     Rotating Light Shutter and Its Uses

Beverly \*Kingsley, Mary Catherine 16 Beverly H.S. 277 Essex  
Determination of Fat in Collagen Preparations

Brookline Tarko, Howard Bernard 16 Brookline H.S. 18 Somerset Rd. 02146  
Research on the Zeeman Effect

Dorchester \*O'Gorman, Susan Elizabeth 17 Girls' Latin School 20 Danville St.,  
Analysis of Langmuir Probe Characteristics Boston 02132  
in a Low-Pressure Cesium Plasma

Fall River Petri, Peter Alexander 17 B.M.C. Durfee H.S. 638 High St. 02720  
NaCl Structure Analysis Through X-Ray Diffraction

Holden Hequembourg, Jerome Eastman, Jr. 17 Wachusett Regional H.S.  
Period of Variable Stars 236 Highland St. 01520

Natick McGinnis, Andrew Mosher 17 Natick H.S. 12 Barnesdale Rd. 01762  
Measuring the Glass-Transition Temperatures of Selected Polymers

Needham Cottle, Edward Charles 17 Needham Sr. H.S. 56 Kingsbury St. 02192  
Reaction Rates in Electrolysis of Salts of Acetic Acid

Eloranta, Peter James 17 Needham Sr. H.S. 42 Woodlodge Rd. 02192  
Viscosity Study of Solutions of High Molecular Weight Hydroxyethylcellulose

Revere Green, Laurence Henry 16 Needham Sr. H.S. 82 Deerfield Rd. 02192  
Analysis of Kappa-PI Systems of *Paramaecium aurelia*

Cecere, Fred Anthony, Jr. 17 Revere H.S. 300 Malden St. 02151  
Polycythemia as a Factor in Ventricular Hypertrophy of C57Bl/6J Female Mice Exposed to Chronic Hypoxia

Sturbridge Wilson, Kenneth Morley, Jr. 17 Tantasqua Regional H.S. River Rd. 01566  
Analysis of a Complex Pegmatite, the Paragenesis of the Strickland Quarry

Waltham O'Reilly, Daniel Francis 17 Waltham H.S. 13 Plympton St. 02154  
Repeating Decimals

Wellesley Hills Kay, Joseph Andrew 16 Wellesley Sr. H.S. 5 Willow St. 02181  
Intelligence in Machines

West Springfield Edwards, Richard Lewis 17 West Springfield H.S. 15 Burke Ave.  
Vanillase

#### MICHIGAN

Ann Arbor \*Larudee, Mehrene Emma 16 Ann Arbor H.S. 1123 Michigan 48104  
Logic and the Expectation Paradox

\*Meier, Karen 16 Ann Arbor H.S. 1819 Hill St.  
Experimental Geometry - Conics in Wax Paper

Detroit Laffler, Thomas Gordon 17 Cass Technical H.S. 1715 Ward 48235  
Lifespan of Rat Erythrocytes as Determined by Radioiron Turnover

Grand Rapids \*Thompson, Eileen Gall 17 Ottawa Hills H.S. 1511 Giddings S.E. 49507  
Protective Effect of Serotonin Against Gamma Radiation

Mt. Clemens Williams, Malcolm Richard 18 Mt. Clemens H.S. 25 S. Wilson 48043  
Utilization of Animal Protein by Insectivorous Plants

#### MINNESOTA

Faribault \*Schultz, Patricia Naomi 17 Faribault Sr. H.S. R.R. 55021  
Bacterial Evolution

#### MISSISSIPPI

Biloxi Blackston, Alan Mathieu 17 Biloxi Sr. H.S. 2809 St. Martha St.  
History, Analysis and Construction of Computers

#### MONTANA

Great Falls \*Reichert, Cheryl Faye 17 Great Falls H.S. 1409 4 Ave. S. 59401  
Development of the Immune Response

Victor \*Skillman, Elizabeth Ann 17 Victor H.S. Victor 59875  
Effect of *Bordetella pertussis* on Permeability

#### NEBRASKA

Lincoln McKee, Terry Allan 18 Lincoln Northeast H.S. 216 S. Cotner 68510  
Generalization of the Four-Color Conjecture to 'n' Dimensions

Coy, Stephen Lawrence 17 Lincoln Southeast H.S. 380 Bruce Dr. 68510  
Monolayer Skims in Microanalysis

Omaha Musselman, Charles Gregg 17 Omaha Central H.S. 119 S. 51 St. 68132

#### NEVADA

Boulder City Lyons, Kenneth Brent 17 Boulder City H.S. 8017 St. P.O. Box 506 89005  
Process for Extraction of Silver from Silver Chloride Ores

**NEW HAMPSHIRE**

Burr, Robert Eaton 17 Phillips Exeter Academy 15 Grove St., Winchester, Mass.  
Effects of Dietary Calcium Levels on Two Types of Bone Cells

Sproull, Robert Fletcher 16 Phillips Exeter Academy Apt. 1330  
Some Physical Properties of Electrolytically Injected F Centers in Sodium Chloride 4921 Seminary Rd., Alexandria, Va. 22311

#### NEW JERSEY

East Orange Crystal, Stephen Harris 17 East Orange H.S. 17 Warrington Pl. 07017  
Heterozygous Expression of Mouse Hemolytic Anemia Gene

Jersey City Stein, Steven Robert 17 William L. Dickinson H.S. 418 New York Ave.  
Space Ecology 07307

Long Branch \*Halpern, Gail Bondi 16 Long Branch H.S. 450 Brighton Ave. 07740  
Interferometric Microanalysis of Diffusion

\*Perlman, Janet Esther 17 Long Branch H.S. 174 Franklin Ave. 07740  
Conditioning the Caudate Spindle in Chronically Implanted Cat Using a Pavlovian Conditioning Paradigm

Montclair Blumberg, William Allen 17 Montclair H.S. 229 N. Mountain Ave.  
Separation of High Molecular Weight Polymers Using Chromatographic Techniques

Mountain Lakes Haydock, Roger 17 Mountain Lakes H.S. 190 Laurel Hill Rd. 07046  
A Function for Prime Numbers

Paramus Lancaster, Mayson Gartrell 17 Paramus H.S. 219 Denver Rd.  
Attempts to Develop an Improved Preparation of Platinoos Olefin Complexes

Pennington \*Worthington, Dorothy Ann 18 Central H.S. of Hopewell Twp. 158 E.  
Studies in Carcinogenesis - Experimental Carcinogens Delaware Ave. 08534  
and the Co-Carcinogenic Role of Atmospheric Conditions

Plainfield Linke, Richard Alan 17 Plainfield H.S. 1466 Linbarger Ave. 07060  
Detection of Ultrasonic Standing Wave Formations in a Liquid Medium

Wachtel, Alan Larry 16 Plainfield H.S. 1037 Ironbound Ave. 07060  
Theory of Liquid Behavior

Raritan Fuge, Paul Harry 17 Bridgewater-Raritan H.S. 455 Bayberry Rd.,  
Design and Construction of an Ultrasonic Generator Somerville 08876

Teaneck Fram, David Martin 16 Teaneck H.S. 1108 Belle Ave. 07666  
Investigation into Minimization of Ferromagnetic Domain Wall Energy in Microscopic Iron Cubes

Miller, Victor Saul 16 Teaneck H.S. 111 Grayson Pl. 07666  
Bi-Radial Coordinates

#### NEW MEXICO

Albuquerque Adler, Robert Eliot 17 Sandia H.S. 2416 Pennsylvania St. N.E. 87110  
Relation of Retention and Recall of Learned Material

Newell, Robert Terry 17 Sandia H.S. 3216 Madelira N.E. 87112  
Experimental Synthesis of Organic Bromides and Computation of Yields

Artesia Herbert, James Waldo 17 Artesia H.S. 812 Richardson 88210  
Sensitivity of Radiated *Paramaecia*

Las Cruces Solberg, Herbert Gordon, Jr. 17 Rt. 2 Box 361 88001  
Finding Jupiter's Diameter from Transits of Its Satellites

Raton Modrich, Paul Lawrence 17 Raton H.S. 1212 S. 6 St. 87740  
Distribution of Radioactive Fallout in the Food Chain of a Subalpine Bog

#### NEW YORK

Bayside Brusselars, Donald James 16 Bayside H.S. 32-38 Bell Blvd. 11361  
Comparison of Crystal Structures of Aluminum and Cobalt (III) Acetylacetone Using NMR Spectroscopy

Budica, Robert Joseph 18 Bayside H.S. 28-11 Bayside Lane, Flushing 58  
Combustion Instabilities in Rockets

Linker, Arthur 16 Bayside H.S. 251-11 Thebes Ave., Little Neck 11362  
Preliminary Investigation of the Reaction Between SnCl<sub>2</sub>, Meta-Dinitrobenzene and OH<sup>-</sup>

Brooklyn Axelrod, David 16 Abraham Lincoln H.S. 1546 E. 3 St. 11230  
Basic Wave Properties of Liesegang's Rings

\*Geisler, Carol Joy 15 Abraham Lincoln H.S. 3845 Neptune Ave. 11224  
Reversals of 'N' Digits in the Base 'R'

Temkin, Lawrence Paul 15 Abraham Lincoln H.S. 1130 Brighton Beach Ave.  
Effects of Biotin Deficiency on Growth of Rat Carcinosarcoma (Walker 256) 11235

Appelman, Barry Ellis 17 Brooklyn Technical H.S. 29 Falmouth St. 11235 Occulation of Sun's Radio Waves by the Moon	Mollica, Richard Francis 17 Brooklyn Technical H.S. 174 Corson Ave., Biopathological Significance of Organic Coatings Staten Island in the Oral Cavity of Golden Hamsters	Huntington	Blankinship, John Joseph 17 Half Hollow Hills H.S. R.F.D. 1 Ingold Dr. Theory of Infinite Factorials
*Ackerman, Diana Felicia 16 Erasmus Hall H.S. 225 Eastern Pkwy. 38 Attempt to Induce Noncompetitive Agonistic Behavior in	Female White Mice by Testosterone Injections	Ithaca	Thompson, Mark Smith 17 Ithaca H.S. 105 Texas Lane 14850 Modular Arithmetic as Applied to Pascal's Triangle
Chadab, Marvin 17 Erasmus Hall H.S. 1642 66 St. 11204 The Thymus and Immunological Reactions of Guinea Pigs	Chess, Jeremy 16 Erasmus Hall H.S. 1625 Ditmas Ave. 11226 Effect of Cold Environmental Temperatures on Serum Proteins of the Rat	Jamaica	Boucher, Charles Allen 16 Jamaica H.S. 153-15 78 Rd., Flushing 11367 Effect of Inhibitory Drugs on Nerve Potentials and Muscle Contractions
Fischer, Kenneth Clyde 16 Erasmus Hall H.S. 385 E. 18 St. Effects of Induced Sleeplessness on Mice	Krone, Anton Mark 17 Erasmus Hall H.S. 563 Ocean Ave. 26 Establishing the Value of Auto-Radiographic Techniques Using	Edelman, Stuart Edward 16 Jamaica H.S. 135-31 77 Ave., Flushing	Functions of the Corpora Cardiaca in the Cockroach Leucophaea maderae
*Weiss, Susan Harriet 16 Erasmus Hall H.S. 682 Ocean Ave. 11226 Similarities and Differences of <u>Sarcina flava</u> and	Micrococcus lysodeikticus	Fromm, Mitchel Lee 17 Jamaica H.S. 75-21 167 St., Flushing 11366 Inhibition of <u>Pseudomonas fragi</u> by <u>Streptococcus citrovorus</u> ,	Streptococcus diacetilactis and Other Factors
Levin, Bruce 15 Franklin K. Lane H.S. 200 Highland Blvd. 11207 Increase of a Conditioned Emotional Response	(CER) with Time in CF-1 Mice	Kessler, Bruce Edward 16 Jamalca H.S. 144-57 Charter Rd. 11435 Effect of Electronegative Substituted Benzolic Acids on	Rate of Protoplasmic Streaming in <u>Elodea densa</u>
Abel, Mark 15 Samuel J. Tilden H.S. 1399 E. 91 St. 11236 Effects of Possible Digestion and Reabsorption in the Uterus of a Rat	Gorelick, David Alan 16 Samuel J. Tilden H.S. 690 E. 57 St. 11234 Effects of Magnetic Field on Developing Chicken Embryos	Winternitz, Robert Steven 16 Jamalca H.S. 141-40 84 Dr. 11435 Theory of Diagonal Groups	Zander, David Brooks 17 Kenmore West Sr. H.S. 127 McKinley Ave. 14217 Atherosclerotic Assimilation of Artificial Thromboemboli in the Rat
Hadlock, Charles Robert 16 Xaverian H.S. 348 Eastern Pkwy. 11225 Information Retrieval by an Associative Network	Fuchs, Stuart Irwin 17 Yeshivah of Flatbush H.S. 869 Linden Blvd. 11203 Cause, Effects and Cure of Hypervitaminosis 'A' in Mice	*Menke, Teresa Mary 16 St. Mary's Diocesan H.S. 4250 S. Harris Hill Rd., Williamsville 14221 Effects of Various Spinach	Extracts on Heart of the Guinea Pig
Straus, Stephen Ezra 17 Yeshivah of Flatbush H.S. 770 Ocean Pkwy. 11230 Effect of Ozone on Growth Factor of Philodendron	Minkoff, Kenneth Mark 15 Andrew Jackson H.S. 138-06 229 St. 11413 Development of a Group of Translations in a Hyperbolic Plane	Burstein, William Jerry 17 Division Avenue H.S. 2 Saddler Lane 11756 Experimentation to Determine Immunological	Function of Thymus Gland in Mice
Rand, James Berry 16 Andrew Jackson H.S. 128-56 234 St., Rosedale 11422 Possible Correlation Between the Sex Chromatin	Bird, Gordon Terrant 17 Columbia H.S. 1 Elmwood Dr. 12061 Value of Fluorescent Staining in Determining Nucleic	Zeldis, Steven Martin 17 Division Avenue H.S. 44 Furrow Lane 11756 Effects of Surface Conditions of Mars on a Broad Spectrum of	Earth Life and on Specific Primitive Forms
Body and Homogamety in Amphibians	Koclenski, Philip Joseph 17 Columbia H.S. 20 Diamond Ave., Troy Electrophoretic Separation of Blood Proteins	Camper, Fred 16 Bronx H.S. of Science 40 W. 77 St. 10024 Self-Defining Poly-Inverse System with a Geometric Application	Carr, Daniel Barry 15 Bronx H.S. of Science 1355 Grand Concourse 10452 Modified Statistical Method for Determination of Maximum Permissible
Asimov, Daniel Alan 16 Farmingdale Sr. H.S. 16 Maynard Dr. 11737 A Quasi Calculus	Spielman, Howard Aaron 17 Far Rockaway H.S. 1231 Beach 9 St. 11691 Effects of Neutron and Gamma Radiation on the Photoperiodic	Organic Stream Loading, with a Computer Analysis	Chaitin, Gregory John 16 Bronx H.S. of Science 819 Madison Ave. 10021 Realizing the Moore Algorithm for Gedanken-Experiments
Responses of the <u>Raphanus sativus</u> Radish Plant	Furman, Daniel Selig 16 Francis Lewis H.S. 184-15 58 Ave. Gimmel Analysis	Chang, Stanley 17 Bronx H.S. of Science 3116 Arlington Ave. 10463 Effects of Antibiotics on <u>Mycoplasma laidlawii</u> -	A Species of Pleuropneumonia-Like Organisms
Kagan, Norman Eli 17 Forest Hills H.S. 68-28 Juno St. 11375 Production of Efficacious RNA by a Single Complementary	Strand of DNA in the Transforming System of <u>Bacillus subtilis</u>	Cohen, Philip Lawrence 15 Bronx H.S. of Science 1860 Grand Concourse Effect of Avidin on Growth of Walker 256 Rat Tumors	10457
Linsky, Ralph 14 Forest Hills H.S. 75-40 Austin St. 11375 Iso-Rational Number System	Rosenberg, Ralph Jay 16 Forest Hills H.S. 14 Greenway S. 11375 Study of Effects of Temperature on Skin Autografts in Mice	Faltz, Lawrence L. 16 Bronx H.S. of Science 5500 Fieldston Rd. 10471 Time Dependence in Photoreactivation of <u>Neisseria flava</u>	10471
Rothenberg, Allan Frank 16 Forest Hills H.S. 73-37 Austin St. 11375 Appearance of a Cube Moving at High Velocity	Winter, James 16 Forest Hills H.S. 98-50 67 Ave. 11374 Investigation of Myocardial Infarction in the Albino Rat	*Leiner, Rosalyn 16 Bronx H.S. of Science 2423 Matthews Ave. 10467 Nicotinic Toxicity	Pollack, Robert Andrew 16 Bronx H.S. of Science 310 E. 75 St. 10021 Further Understanding of Computing Recursive Functions
Hoffman, Curtiss Russell 17 N. Frank Carey H.S. 51 Nassau Blvd., Manufacture of Aluminum by a New Process West Hempstead 11552	Marcus, Russell Jeffrey 17 Valley Stream North H.S. 105 Gold Pl. Human Speech Patterns with Prognosis	Rubenstein, Howard Martin 17 Bronx H.S. of Science 2300 Grand Concourse Findings on Inoculation of a Medium of Lysed <u>Escherichia coli</u> ,	10458
for Psychological Correlation	*Greenberg, Rosalind Bernice 17 Freeport H.S. 243 Miller Ave. Polycythemia as a Factor in Right Ventricular Hypertrophy in Mice	Strain B, Bacteria with T <sub>2</sub> Bacteriophage	Smith, Mark Stephen 16 Bronx H.S. of Science 697 West End Ave. 25 Right- and Left-Handed Reaction Time to Light
Freeport		Among Right-Handed People	Strom, Bernard Ivan 17 Bronx H.S. of Science 1010 Sherman Ave. 10456 Fortran Mast - A New Processor for the IBM 1620
		Zaslavsky, Alan Mark 16 Bronx H.S. of Science 45 Fairview Ave. 10040 Algorithm for Minimum Numbers in Ramsey's Theorem	Levine, Johanan Sidney 16 Ramaz School 465 West End Ave. 24 Interaction Effects of Perceptual Deprivation of Vision and
		Audition on Auditory and Visual Recognitive Thresholds	Menikoff, Arthur Stanley 16 Stuyvesant H.S. 28-08 141 St. Flushing 11354 On the Cardinality of Topologies on Finite Sets
		Siderits, Mark 17 Sleepy Hollow H.S. 95 Beekman Ave. 10593 Solubility of Inorganic Salts in Non-Aqueous Solvents	Tuttle, John Root 17 Pelham H.S. 415 Highbrook Ave. 10803 Studies of Heart Muscle in vitro
		Bennett, Douglas Carleton 17 Penfield Sr. H.S. 127 Forest Hills Rd. Equilibrium Reactions Involved in the	Rochester 14625 Formation of Dolomite

Queens Village	Gabow, Harold Neil 16 Martin Van Buren H.S. 82-09 Bell Blvd. 11427 Solution of the Triangular Duel Problem and Its Generalizations Glazer, Steven Ira 16 Martin Van Buren H.S. 263-08 79 Ave., Floral Park Generally Covariant Quantum Mechanics Using Metric Tensors as Time Inversion Operators Greenberg, Richard Joseph 16 Martin Van Buren H.S. 218-07 Spencer Ave. Are Mice Capable of Communicating with Each Other? 11427 *Herzfeld, Judith 15 Martin Van Buren H.S. 82-32 211 St., Jamaica Spectropolarimetric Analysis of the Secondary Structure of Gramicidin-S and Tyrocidine-A *Kassel, Sandra 16 Martin Van Buren H.S. 82-48 229 St. 11427 Comparative Cytology of Salivary Gland Chromosomes from Normal, 3 Induced-Tumor, and a Spontaneous Tumor Strain of Drosophila Moskowitz, Harvey Steven 16 Martin Van Buren H.S. 76-48 270 St. Color Acuity of the Human Eye at Low Light Levels New Hyde Park 11043 Sultan, Robert Alan 16 Martin Van Buren H.S. 188-02 64 Ave., Fresh Ecological Study of Bacterial Populations Meadows 65 Weitz, Eric 16 Martin Van Buren H.S. 76-36 265 St., New Hyde Park 11043 Relationship of Stabilization Intrinsic Viscosity of Polyvinylpyrrolidone to Molecular Weight in Aqueous Solution Zarkin, Jeffrey Alexander 15 Martin Van Buren H.S. 269-20 80 Ave., Rust Prevention by Use of Hydroxides New Hyde Park 11043	Fairborn	Nyblade, Carl Frank 17 Fairborn H.S. 412 Archer Dr. 45324 Quantitative Study of Blood-Serum Proteins Comparing Normal and Otosclerotic Groups *Curtas, Paulette Colette 17 Gorham-Fayette H.S. 200 Spring 43521 Embryology of the Chick Recorded on Color Film Andrew, Clifford George 17 Greenhills H.S. 9 Jewel Lane 45218 Sexual Selection in Adult <i>Erythromis simplicicollis</i> Rose, Marc Richard 17 Charles F. Brush H.S. 4037 Wyncote Rd., Effects of Thymectomy on Parabiosis and South Euclid 44121 Certain Aspects of Homograft Immunity Rose, Michael Ronald 17 Charles F. Brush H.S. 4037 Wyncote Rd., Effect of the Pineal on Specific Immune Mechanisms South Euclid 44121
Rochester	Joffee, Irving Brian 17 Monroe H.S. 19 Palsade Park 14620 Reverse Photochromism of Cinnamaldehyde Semicarbazone *DeVenon, Ursula Ann 17 Nazareth Academy 20 Ketchum St. 14621 Spectrophotometric Determinations of pK's of Natural Indicators Kronstadt, Michael 16 South Side Sr. H.S. 16 Yale Pl. 11570 Chemical Stress Relaxation Study of a Silicone Elastomer *Bacheler, Lee Terry 17 Amherst Central H.S. 207 Hedstrom Dr., Buffalo Attempt to Isolate a Tryptophan Producing Mutant of <i>Bacillus subtilis</i> 14266	Oklahoma City	Serwer, Gerald Arthur 17 Harding H.S. 3916 Harvey Pkwy. Electrocardiographic Development of the Chick Embryo Heart Horning, Mark Frederick 17 John Marshall H.S. 3109 Quail Creek Rd. 73120 Verification of Zymogen as the Precursor of Both Gastricin and Pepsin by Two-Dimensional Paper Chromatography and Electrophoresis *Page, Mary Michael 17 Monte Cassino H.S. 2144 E. 24 St. 74114 Regeneration of the Caudal Fin in <i>Lebiasina reticulatus</i>
Rockville Centre Snyder	Kronstadt, Michael 16 South Side Sr. H.S. 16 Yale Pl. 11570 Chemical Stress Relaxation Study of a Silicone Elastomer *Bacheler, Lee Terry 17 Amherst Central H.S. 207 Hedstrom Dr., Buffalo Attempt to Isolate a Tryptophan Producing Mutant of <i>Bacillus subtilis</i> 14266	Tulsa	<b>OKLAHOMA</b> Beaverton
Springville	Jax, Peter Robert 17 Griffith Institute and Central School 71 Prospect Ave. Morphological Examination of the X-Chromosomes 14141 of the African Mouse	Salem	DeHart, Douglas Alan 17 Sunset H.S. 1170 N.W. 128 Ave., Portland 97225 Effect of Kinetin on Paramecium
Staten Island	*Goldin, Valerie Roma 17 Curtis H.S. 590 Bard Ave. 10310 Catalase, Its Chemical and Physical Nature, Relationship to the Gram Stain, and Crystallization *O'Brien, Eileen Marie 17 New Dorp H.S. 127 Jacques Ave. 10306 Effects of RNA and DNA Nucleotides on Growth, Morphology and Biochemistry of Irradiated <i>E. coli</i>	Ardmore	Catrall, Thomas John 18 South Salem H.S. 2196 State St. S.E. 97301 Acetic Anhydride-Water Reaction Using Absorption in Ultraviolet
Tonawanda	*Dangman, Barbara Cole 16 Tonawanda H.S. 46 Howton Ave. 10308 Membrane Permeability in Pregnant and Non-Pregnant Rats Kampas, Frank James 17 Tonawanda Sr. H.S. 195 Kohler St. Ferromagnetic Domains in Microscopic Crystals of Cobalt	Huntingdon Valley	<b>PENNSYLVANIA</b> Gittes, Frederick Martin 16 Lower Merion H.S. 342 E. Lancaster Ave., Effect of Vitamin K <sub>1</sub> Analogue on the Coagulation Wynnewood
Uniondale	*Ziminski, Carol Mary 17 Uniondale H.S. 600 Bira St. 11553 Effects of Music on Plant Growth	Kingston	Time of Cobalt-60 Irradiated Mice *Wall, Virginia Dorothy 16 Lower Moreland H.S. 2518 Huntingdon Plke 19006 Transformation of Bacteria
White Plains	Brooks, Eric Randy 17 White Plains H.S. 18 Branch Brook Rd. 10605 Pharmacological Effects of Gamma Aminobutyric Acid and Related Derivatives on the Central Nervous System of the Chick	Lehighton	*Klislo, Christine Mary 17 West Side Central Catholic H.S. 45 Tobin Lane, Edwardsville 18704 Looking into Teratology
Mooresville	<b>NORTH CAROLINA</b>		Balliett, Robert Wayne 16 Lehighton H.S. 222 S. First St. 18235 Growth and Study of Zinc Monocrystals
Mount Holly	Peacock, Albert Franklin, Jr. 17 Mooresville Sr. H.S. 232 E. Center Ave. Production and Analysis of an Antibody-Like 28115 Substance in <i>Lycopersicum esculentum</i>	Philadelphia	Kassell, Neal Frederic 17 Central H.S. 7561 Overbrook Ave. Experimental Alterations in Cerebral Vascular
Mount Ulla	Williams, Richard Taylor 17 Mount Holly H.S. 127 W. Glendale Ave. 28120 Cybernetic Simulation of Imagination and Related Thought Processes	Pittsburgh	Tone with Carotid Artery Occlusion Litman, Robert Barry 17 Overbrook H.S. 2433 N. 52 St. 19131 Effects of Ammonium Phosphate on <i>Saccharomyces cerevisiae</i>
Washington	Myers, Eddie Hilbert 17 West Rowan H.S. Rt. 1 Box 360, Salisbury 28144 Radiation and Biochemistry Studies of the Molt-Controlling Hormone in Crayfish	Scranton	Thomas, Thomas James 17 North Hills H.S. 189 Connie Dr. 15214 The Thymus - Key to Immunology?
Cleveland	Wallace, William Oscar 16 Washington H.S. 108 Oak Dr. 27889 Effects of a Hostile Environment on Life	Cumberland Hill	Locke, Joseph D. 16 Taylor Allderdice H.S. 5723 Solway St. 17 Effects of Varied Incubation Temperature on the
Columbus	*Thomas, Patricia Ann 17 Regina H.S. 2981 E. Derbyshire Rd., Eosinophils and Eosinophil Leukemoid Cleveland Heights 44118	East Providence	Hematopoietic Organs of the Chick Embryo
	Gilbert, Laurence Allan 17 University H.S. 2824 Elm Ave. 9 Development of an Omni-Directional Antenna	Providence	*Kuchinski, Andrea Mary 16 Cathedral H.S. 1064 Carmalt St., Dickson Diophantine Analysis
	Hutchison, William Glenn 17 Whetstone H.S. 622 Glenmont Ave. 43214 Association of Carboxylic Acids in a Two-Phase System		<b>RHODE ISLAND</b>
			*Marzocchi, Barbara Elaine 17 Cumberland H.S. 35 Thomas Leighton Hormonal Induced Effects on Growth and 02864 Morphology of <i>Tetrahymena pyriformis</i>
			Sanderson, Arthur Clark 17 East Providence Sr. H.S. 136 Arnold St., Effects of Sulfuric Acid Treatment on the Riverside 02915 Germination of Seeds
			Tracy, Martin James 17 East Providence Sr. H.S. 205 Wilson Ave., Plant Toxicity to <i>Panagrellus redivivus</i> Rumford 02916
			Feldman, Stephen Aaron 18 Hope H.S. 127 Calla St. 02905 Prime Couple Distribution
			<b>SOUTH CAROLINA</b>
			McCrory, Clinton Graydon 17 A. C. Flora H.S. 3924 Parkman Dr. 29206 Photolysis of Nitrosyl Chloride
			*Burris, Ruby Joyce 17 Greenville Sr. H.S. 25 W. Welborn Ave. 29611 Comparative Dental Anatomy

SOUTH DAKOTA

Huron      Snyder, Lee R. Girton 18 Huron H.S. 1075 Illinois S.W. 57350  
               Spontaneous and Induced Plumage Achromatosis  
               in Domestic Pigeons

TENNESSEE

Nashville      Holland, Walter Fox, Jr. 17 Hillsboro H.S. 5898 Wilshire Dr. 37212  
               Bacteriostatic Effect of Basic Aniline Dyes on Lactobacilli

TEXAS

Baytown      Jones, Michael Roe 17 Robert E. Lee H.S. 600 W. Lobit 77520  
               Measurement of Diffusion Rates  
               \*Elliott, Mary Elizabeth 17 Jesse H. Jones H.S. 7101 Eastwood 77021  
               Demonstration of Statistical Evaluation of Treatment by  
               Survival Rates for Cancer Patients  
               Bonny, Ross Fredrick, Jr. 16 Memorial Sr. H.S. 13122 Apple Tree Rd.  
               Transduction of Escherichia coli with Pl Phage 77024  
               Wagner, Raymond Lee 17 Pampa H.S. 2343 Navajo Rd. 79065  
               Microbial Fluorescence

Pettus      Barnhart, Robert Joel 17 Pettus H.S. Box 70 78146  
               Effects of Halogen Compounds and X-Rays on T2r Bacteriophage  
               Parsons, Charles Robert 17 MacArthur H.S. 421 Winfield St.  
               Anodic Dissolution of Ni, Cd, Co, Zn and Mg in Acetonitrile  
               \*Transue, Patricia Jeanne 17 St. Gerard H.S. 826 McDougal Ave. 78223  
               Tracing Radioactive Phosphorus Through Food Chain of  
               Living Organisms Using a Tagged Isotope  
               \*Albert, Phyllis Joanne 16 Thomas Jefferson H.S. 622 Kampmann Blvd.  
               Chemical Factors Affecting Metabolism 78201  
               Isgur, Nathan Gerald 16 South Houston H.S. 1309 Ave.J 77587  
               Bacterial Identification Through Characteristic  
               Electrophoretic Patterns

VIRGINIA

Arlington      Zisler, Randall Craig 17 Wakefield H.S. 1627 S. 26 St., Apt. 7 22206  
               Trapazoidal Wind-Brace and Its Application  
               to Wood Platform Construction  
               Rothstein, Thomas Lane 17 Yorktown H.S. 2600 N. Harrison St. 22207  
               Finding a Cure for LI210 Leukemia  
               Ashland      Weems, Robert Edwin 17 Patrick Henry H.S. Hanover Ave.  
               Miocene Sediments of Nomini Cliffs, with Comparison  
               of Vertebrate Fossils from Calvert and Choptank Formations  
               Bedford      Fizer, Henry Burnett 17 Bedford H.S. Rt. 1 24523  
               Expansion of the Buffon Needle Problem  
               Chesapeake      Jackson, Robert Tyler 17 Churchland H.S. 227 Winston Rd., Portsmouth  
               Comparison of Elasmobranch and Teleost Learning Ability 23703  
               Fairfax      \*Cleveland, Marcia Camden 17 Fairfax H.S. 415 Egan Dr. 22030  
               Nickel Dimethylglyoxime Complexes  
               Falls Church      Lind, Douglas Allen 17 George Mason Jr.-Sr. H.S. 1308 N. Tuckahoe St.  
               Generalizations of Circular and Hyperbolic Functions 22046  
               McLean      \*Brook, Margaret Pamela 17 McLean H.S. 4108 Chesterbrook Rd.  
               Gibberellin-Like Growth Regulators  
               Durand, Marc Steven 16 McLean H.S. 5938 Westbury Rd. 22101  
               Effects of Frequent Environmental Change on  
               Grade Point Average of High School Seniors  
               Richmond      \*Thrift, Mary Crimora 17 Thomas Jefferson H.S. 3911 Cary Street Rd.  
               Direct Determination of Amount of Protein in Beta-Lipoprotein 23221  
               Springfield      Bell, Joseph William, Jr. 17 Robert E. Lee H.S. 8021 Jansen Dr. 22150  
               Function of Thyroid Hormones

WASHINGTON

Moses Lake      Jeffries, Clark Debs 17 Moses Lake H.S. 9025-A McConnell Dr.  
               Solid Rocket Propellant Research Larson AFB 98838  
               Port Townsend      Schneider, Dennis George 17 Port Townsend H.S. Rt. 2 Hastings Ave.  
               High-Energy Chemical Reaction 98368  
               Prosser      \*Klostermeyer, Mary Jeanette 17 Prosser Sr. H.S. 611 Ellen Ave. 99350  
               Human Heredity

Seattle

Dickson, Lawrence John 16 Blanchet H.S. 12727 3rd N.W. 98177  
               Valences and Relationships of Non-Metallic Transition Elements  
               Cohen, Edward Hirsch 16 James A. Garfield H.S. 1456 38 Ave. 98122  
               Experiment in Grafting Planarian Tissues

WEST VIRGINIA

Moundsville      Melott, Adrian Lewis 17 Moundsville H.S. 334 Highland Ave. 26041  
               Stoichiometric Activity Coefficients in Methanol  
               Rowlesburg      Arnett, Carroll Dwight 17 Rowlesburg H.S. P.O. Box 275 26425  
               Difference in  $R_F$  Values Between Ascending and  
               Descending Paper Chromatography

WISCONSIN

Medford      Larson, Gregory Keith 17 Medford H.S. P.S.R. 54451  
               Nutritional Studies on the Cabbage Looper  
               Trichoplusia ni Hubner  
               Milwaukee      Augustin, Barry David 17 Washington H.S. 8131 W. Auer Ave. 53222  
               Macro-Molecular Particle Acceleration  
               Wisconsin      \*Bonertz, Margaret Ann 17 Assumption H.S. 1150 3 St. N.  
               Rapids      Qualitative Analysis of Metal Ions by Means of  
               Alcoholic Hydroquinone -  $H_2S$  Solutions

\*     \*     \*

**STATE SCIENCE TALENT SEARCHES**

Alabama: The Gorgas Scholarship Foundation, Inc.

Dr. Emmett B. Carmichael, Prof., Dept. of Biochemistry and Asst. Dean, The Medical College of Alabama and School of Dentistry, Birmingham

Alaska: University of Alaska

Dr. Wm. S. Wilson, Head, Dept. of Chemical Engineering and Chemistry, University of Alaska, College

Arizona: Arizona Academy of Science

Dr. Byron J. Gibbs, Biology Instructor, Phoenix College, Phoenix

Arkansas: Arkansas Academy of Science

Dr. Leo J. Paulissen, Assoc. Prof. of Bacteriology, University of Arkansas, Fayetteville

Colorado-Wyoming: Colorado-Wyoming Academy of Science

Mr. Richard G. Walter, Chm., Junior Academy Committee, 100 E. Baseline Rd., Lafayette, Colorado

Connecticut: Connecticut Academy of Arts and Sciences, Connecticut Science Teachers Association and University of Connecticut

Dr. David J. Blick, Prof., Dept. of Science Education, University of Connecticut, Storrs

District of Columbia: Committee on Encouragement of Science Talent, Washington, D.C. Academy of Sciences

Rev. Francis J. Heyden, S.J., Dir., Georgetown College Observatory, Georgetown University, Washington

Florida: Florida Academy of Science and Florida Foundation for Future Scientists

Dr. Luther A. Arnold, Secondary Science Education, University of Florida, Gainesville

Georgia: Georgia Junior Academy of Science

Mr. Dallas Stewart, Area Science Consultant, Director of Youth Activities, State Department of Education, Atlanta

Hawaii: Inter-Society Science Education Council and Hawaiian Academy of Science

Mr. Edwin Y. H. Chinn, Program Asst., Science and Mathematics, State Department of Education Annex, 1037 S. Beretania St., Honolulu

Idaho: Idaho Academy of Science

Mr. Allen Hollenbeck, Biology Teacher, Boise High School, Boise

Illinois: Illinois Academy of Science

Dr. G. J. Froehlich, Dir., Bureau of Institutional Research, University of Illinois, Urbana

Indiana: Indiana Academy of Science

Mr. Virgil Heniser, Coordinator for School Science, 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, Head, Physical Sciences Div., Kansas State Teachers College, Emporia

Kentucky: Kentucky Academy of Science

Dr. H. H. LaFuze, Chm., Biology Dept., Eastern Kentucky State College, Richmond

Louisiana: University of Southwestern Louisiana

Dr. James R. Oliver, Dean, Graduate School and Dir., Computing Center, University of Southwestern Louisiana, Lafayette

Maine: Society of Sigma Xi and University of Maine  
Dr. George T. Davis, Prof. of Education, University of Maine, Orono

Maryland: Maryland Academy of Sciences  
Mr. Nigel O'C. Wolff, Dir., Maryland Academy of Sciences, 400 Cathedral St., Baltimore

Michigan: Michigan Junior Academy of Sciences, Arts and Letters  
Dr. C. L. Schloemer, Prof. of Natural Science, 146 Natural Science Bldg., Michigan State University, East Lansing

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  
Prof. Thomas A. Hutto, Asst. Prof., Biology Dept., School of the Ozarks, Point Lookout

Montana: Montana State College  
Dr. Adrien L. Hess, Prof., Mathematics Dept., Montana State College, Bozeman

Nebraska: Nebraska Academy of Sciences, Inc.  
Dr. James A. Rutledge, Prof. of Secondary Education, University of Nebraska, University High School, Lincoln

New Hampshire: Northern New England Academy of Science  
Dr. R. L. Bickle, Prof. of Entomology, University of New Hampshire, Durham

New Mexico: Eastern New Mexico University  
Dr. Warren J. Neill, Head, Dept. of Chemistry, Eastern New Mexico University, Portales

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 Service  
Dr. John D. Hopperton, Dir., Oklahoma Science Service, Extension Div., 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, Chm., 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. Richard H. Gadsden, Asst. Prof. of Chemistry, Medical College of South Carolina, Charleston

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  
Dr. Neil C. Hulings, Assoc. Prof. of Biology, Texas Christian University, Fort Worth

Utah: Utah Junior Academy of Sciences, Arts and Letters and Utah State Science Talent Search  
Mr. Richard S. Peterson, State Supv. of Science Education, 223 State Capitol Bldg., Salt Lake City

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

Wyoming: (See Colorado-Wyoming)

For additional single copies of this list, send self-addressed long envelope, 10¢ stamped, to:  
SCIENCE SERVICE  
1719 N Street, N.W.  
Washington, D.C. 20036

Queens Village

Glazer, Steven Ira 16 Martin Van Buren H.S. 263-08 79th Ave.,  
Floral Park  
\*DeVonis, Ursula Ann 17 Nazareth Academy 20 Ketchum St. 14621  
\*O'Brien, Eileen Marie 17 New Dorp H.S. 127 Jacques Ave. 10306

Rochester  
Staten Island

PENNSYLVANIA

Ardmore  
Pittsburgh

Gittes, Frederick Martin 16 Lower Merion H.S. 342 E. Lancaster Ave., Wynnewood  
Locke, Joseph D. 16 Taylor Allderdice H.S. 5723 Solway St. 17

Huron

Snyder, Lee R. Girton 18 Huron H.S. 1075 Illinois S.W. 57350

Pettus

Barnhart, Robert Joel 17 Pettus H.S. Box 70 78146

Arlington  
Bedford  
Springfield

VIRGINIA

Zisler, Randall Craig 17 Wakefield H.S. 1627 S. 26th St., Apt. 7. 22206  
Fizer, Henry Burnett 17 Bedford H.S. Route 1 24523  
Bell, Joseph William Jr. 17 Robert E. Lee H.S. 8021 Jansen Dr. 22150

\* 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 FILE COPY  
of the

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

The forty Washington trip winners of the 23rd 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 26 through March 2, 1964, 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 14 to 18 years of age and come from 36 cities in 17 states. They were picked by the judges from among 22,997 contestants of whom 3,141 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-third Annual Science Talent Search Winners, 30 ranked in the top 5% of their graduating class and 14 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 24% of the entries this year.

## Washington Trip Winners

	ARIZONA
Phoenix	Sinclair, Stephen Hayward 18 North Phoenix H.S. 2021 N. Alvarado Rd. 85004
	CALIFORNIA
Fairfield Reseda San Francisco	Bowen, Robert Edward 16 Armijo Joint Union H.S. 721 Nevada *Goldman, Judith Diane 17 Reseda H.S. 18317 Kittridge St. Fisk, Stephen Thomas 17 Abraham Lincoln H.S. 2270 44th Ave. 94116
	FLORIDA
Miami North Miami	*Ofsowitz, Clare Harriet 17 Miami Sr. H.S. 1548 S.W. 3rd St. 33135 Solomon, Edward Ira 17 North Miami Sr. H.S. 1200 N.E. 160th St., North Miami Beach
	ILLINOIS
LaGrange Park	*Gloss, Mary Helen Carol 17 Nazareth Academy 1960 Curtiss, Downers Grove 60515
	INDIANA
New Haven	*Keller, Rhea Louise 18 New Haven H.S. 3232 Congress Ave., Fort Wayne 46806
	MARYLAND
Aberdeen Bethesda	*Kuhn, Margaret Wendy 17 Aberdeen H.S. 634 Burkley Ave. 21001 Jaffin, Henry Michael 17 Bethesda-Chevy Chase H.S. 2949 Terrace Dr., Chevy Chase 20015
Boonsboro Silver Spring	Malorana, James Anthony 17 Boonsboro Sr. H.S. Route 2 21713 Winters, Stephen Marron 17 Montgomery Blair H.S. 1608 Grace Church Rd.

Amherst Wellesley Hills	<b>MASSACHUSETTS</b> Lovins, Amory Bloch 16 Amherst Regional H.S. Mill Lane 01002 Kay, Joseph Andrew 16 Wellesley Sr. H.S. 5 Willow St. 02181
Lincoln	<b>NEBRASKA</b> Coy, Stephen Lawrence 17 Lincoln Southeast H.S. 380 Bruce Dr. 68510
Boulder City	<b>NEVADA</b> Lyons, Kenneth Brent 17 Boulder City H.S. 801 7th St., P.O. Box 506 89005
Exeter	<b>NEW HAMPSHIRE</b> Sproull, Robert Fletcher 16 Phillips Exeter Academy Apt. 1330, 4921 Seminary Rd., Alexandria, Va. 22311
Long Branch Montclair Plainfield	<b>NEW JERSEY</b> *Perlman, Janet Esther 17 Long Branch H.S. 174 Franklin Ave. 07740 Blumberg, William Allen 17 Montclair H.S. 229 N. Mountain Ave. Linke, Richard Alan 17 Plainfield H.S. 1466 Linbarger Ave. 07060
Las Cruces	<b>NEW MEXICO</b> Solberg, Herbert Gordon, Jr. 17 Las Cruces H.S. Route 2, Box 361 88001
Brooklyn	<b>NEW YORK</b> *Geisler, Carol Joy 15 Abraham Lincoln H.S. 3845 Neptune Ave. 11224 Krone, Anton Mark 17 Erasmus Hall H.S. 563 Ocean Ave. 11226 *Weiss, Susan Harriet 16 Erasmus Hall H.S. 682 Ocean Ave. 11226 Spielman, Howard Aaron 17 Far Rockaway H.S. 1231 Beach 9th St. 11691 Kagan, Norman Eli 17 Forest Hills H.S. 68-28 Juno St. 11375 Linsker, Ralph 14 Forest Hills H.S. 75-40 Austin St. 11375 Winternitz, Robert Steven 16 Jamalca H.S. 141-40 84th Dr. 11435 Rubenstein, Howard Martin 17 Bronx H.S. of Science 2300 Grand Concourse 10458 Menikoff, Arthur Stanley 16 Stuyvesant H.S. 28-08 141st St., Flushing 11354