

Des Moines Hilsen, Scott Gordon 17 Mt. Rainier H.S. 18655 4 Ave. S.W., Seattle 98166
Influence of the Pyramid Shape Upon the Germination Rate
of *Aspergillus niger*

Kennewick McFadden, Stephen Andrew 17 Kennewick H.S. 411 S. Morain St. 99336
Development of an Ultrasonic Imaging System

Seattle Behrenhoff, Mary Grace 17 Holy Names Academy 204 160 Ave. N.E.
How to Compute a Lunar Eclipse Bellevue 98008

WEST VIRGINIA

Richwood Malcomb, Cecil Dale 17 Richwood H.S. Camden-on-Gauley 26208
Stability of the Shannon-Weaver Diversity Index and
Lloyd and Ghelardi's Equitability as Water Quality Indicators

WISCONSIN

Antigo Kieper, David Glenn 17 Antigo H.S. Rt. 4, Box 219 54409
Habitat Preference Shown by Common Benthic Organisms
in the East Branch of the Eau Claire River

Glendale Mark, David Sanford 18 Nicolet H.S. 239 W. Suburban Dr., Milwaukee
Advanced Studies in the Double Layering 53217
Effect and Polarography

Marshfield Meyer, Larry Alan 17 Columbus H.S. 601 W. Ives St. 54449
Studies on the Structure of Human Angiotensinogen

Wausau Speckhard, Daniel Vern 17 Wausau West H.S. 429 N. 5 Ave. 54401
Kinetic and Potential Energy of Shallow Water Waves
at Wawamalo Beach, Oahu, Hawaii

WYOMING

Jackson Johnson, Howard Wilhelm 17 Jackson Hole H.S. P.O. Box 1734 83001
Snow and Rain Computer

HONORS GROUP

IN

THE 36th ANNUAL

Science Talent Search®

for the

**Westinghouse Science Scholarships
and Awards**

1977



SCIENCE CLUBS OF AMERICA

Administered By Science Service

1719 N STREET N.W. WASHINGTON, D. C. 20036

The Meaning of Honors in the Science Talent Search

The achieving of Honors in the Science Talent Search is an evidence of ability and interest in science and engineering which can be taken into consideration by colleges and universities in admissions and granting of scholarships. For this reason this Honors List is distributed to all universities and colleges of the United States utilizing a list furnished by the American Council on Education.

All boys and girls awarded Honors in the Science Talent Search are considered so outstanding that any institution of higher learning will be justified in considering their abilities carefully.

In past years members of the Honors Group have made creditable records in the colleges and universities to which they have been admitted.

From the list of 300 Honors, 40 are being chosen as Winners of the Washington trip. Among these \$67,500 in scholarships and awards will be distributed. The Winners are being announced subsequent to the distribution of this list and their names will be published in Science News of February 5, 1977, and it will be sent upon request accompanied by a self-addressed stamped envelope.

Each of those winning honors is being furnished with multiple certifications intended to accompany applications for college admissions and scholarships, but a listing in this pamphlet should be accepted as an equivalent certification.

Judging in this competition was without regard to sex. Listed are 86 girls and 214 boys.

The Annual Science Talent Search

The Science Talent Search was the pioneering endeavor to discover at the high school senior year level those who have the potentialities to become the research scientists and engineers 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 and engineering has become an institution and tradition due to approval from the academic community 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 and engineering 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 thirty-six Science Talent Searches by the Westinghouse Educational Foundation, an organization endowed by the Westinghouse Electric Corporation for the promotion of science and engineering.

Science Service, engaged in the interpretation and public understanding of science on a broad front, is proud of administering the annual Science Talent Search. From the newspapers, educators, scientists and engineers of America there has been enthusiastic cooperation in this annual activity that means so much to high school seniors interested in science and engineering.

FOR RELEASE: WEDNESDAY AFTERNOON, JANUARY 26, 1977

Honors Group

in the Thirty-sixth Annual Science Talent Search

HOME ADDRESS is underlined AGE of winner follows name
Title of project report submitted is on next line

ALABAMA 3

Cottonwood Graddy, James Haywood 17 Cottonwood H.S. P.O. Box 234 36320
Effect of Preparation Variations on Variability of Dyeings on Cotton Fabrics
Stringer, Catherine Denise 17 Cottonwood H.S. Rt. 1, Ashford 36312
Earthquakes and Ocean Rifts: Is There a Connection?
Decatur Ackley, George Benjamin 18 Austin H.S. 904 Betty St. S.W. 35601
Fertilization of Eggs in Corydoras Mating
Montgomery Bajaj, Akshay Kumar 17 Robert E. Lee H.S. 347 W. Vanderbilt Loop 36109
Isolation of the Isoleucine-Valine Gene From *Escherichia coli*
Grier, Michael Wayne 18 Robert E. Lee H.S. Rt. 3, Box 282 36110
Design Project of a Multistory Building

ARIZONA 2

Dewey Neumann, Dan Alan 18 Bradshaw Mountain H.S. 113 Date Creek Dr.,
Conversion of Solar Energy to Mechanical Energy Prescott 86301
Utilizing Dichloromethane and Parabolic Reflectors
Phoenix Hittel, John Paul 17 Camelback H.S. 5249 N. 37 Pl., Paradise Valley 85253
Optical Communications Utilizing Pulse Position Modulation

ARKANSAS 1

Fayetteville Berry, Glen Lewis 18 Fayetteville H.S. 1009 Pollard 72701
Response of *Eudrilus eugenia* to Light
Chatrathi, Mohini 17 Fayetteville H.S. 1463 Harold St. 72701
Teenage Women's Attitudes Toward Changing Role of Women in our Society

CALIFORNIA 15

Alhambra Lee, Kenton Paul 17 Alhambra H.S. 1385 Ridgecrest St., Monterey Park
Development of Digit and Spatial Spans in Small Children 91754
Nishimura, Sally Kumiko 18 Alhambra H.S. 1623 Bluffhill Dr., Monterey
Effect of Anoxia on High Energy Phosphate Compounds Park 91754
of Fetal Rat Brain
Big Pine Roberts, Leslie Ann 17 Big Pine H.S. 461 Crocker St. 93513
Basic Relationship Between Increased Tourist Population and Coloform
Contamination of the Sources of the Local Water Supply
Canoga Park Redmann, William Gibbens 18 Chaminade College Preparatory 16512 Chats-
Construction and Demonstration of worth St., Granada Hills 91344
an Electronic Brainwave Amplifier
Coronado Sanger, Richard Appel 16 Coronado H.S. 515 First St. 92118
Diamonds on the Beach
Cupertino Hempel, Thomas Peter 15 Cupertino H.S. 10167 Myer Pl. 95014
Paleoecology of the Mud Nassis in the Purisima Formation
Fremont Luisi, Bonaventura Francesco 18 Washington H.S. 5275 Earle St. 94536
Thermodynamics of a System in Relative Motion
Hacienda Heights Byrne, Christopher Alan 17 Los Altos H.S. 15453 Del Prado Dr. 91745
Sycamore Canyon
Los Angeles Kaneshiro, William Kiyoshi 17 Venice H.S. 12865 Gilmore Ave. 90066
Experiments on Supersonic Jet Noise
North Hollywood Binstock, Mark Alan 17 Harvard School 12251 Richwood Dr., Los Angeles
Trypsin-Giemsa Banding of Canine Chromosomes 90049

- Portola Valley Belliveau, John William 18 Woodside Priory School 921 N. Idaho St., San Analogies Between Respiration and a Light-Driven Mateo 94401
Proton Pump as Sources of Energy for Active Glutamate Transport in *Halobacterium halobium*
- Sacramento Moy, Alan Brent 17 Christian Brothers H.S. 4317 Griffith Dr. 95822
Hormonal Control of Chromatophores in Crustaceans
- San Diego O'Connor, Jack Francis 17 James Madison H.S. 9320 Mira Mesa Blvd. 92126
Is the Climate Really Changing?
- San Francisco Bialek, William Samuel 16 Lowell H.S. 310 Arballo Dr. Apt. 8-B 94132
Fundamental Unification of Electrodynamics
- Santa Ana Shimizu, Kenneth Takeshi 17 Foothill H.S. 10801 Harrogate Pl. 92705
Plant Structure Versus Environment
- Santa Barbara Svoboda, Craig Kendall 16 San Marcos H.S. 536 Calle Aparejo 93111
Effects of Salt Levels of the Nutrient Medium on the Growth Rate of *Chlorella pyrenoidosa*

COLORADO 3

- Brush Durham, Edwin Bert 18 Brush H.S. 940 Carson St. 80723
Analysis of Freon Distributions in Commercial Aerosols
- Calhan Wyatt, Richard Matthew 17 Ellicott H.S. Rt. 2 80808
Study of Freshwater Pond Life: Its Classification and Interrelationships
- Julesburg Ferguson, David Jerald 17 Julesburg H.S. Rt. 3, Box 60 80737
Papilionoidea of Colorado

CONNECTICUT 2

- North Haven Clarke, David Conrad 18 North Haven H.S. 17 Pequot Ave. 06473
Interaction of Radioactive Emanations and Matter
- Woodbridge Messinger, Barbara Joyce 17 Amity Reg. Sr. H.S. 69 Country Club Dr. 06525
Waveform Synthesis by Computer

DELAWARE 1

- Newark Chen, Weiming 18 Newark H.S. 16 S. Wynwyd Dr. 19711
Tetrahedron: Circumscribing to the Nth

FLORIDA 15

- Cocoa Lohse, Christopher Martin 18 Cocoa H.S. Rt. 1, Box 219 32922
Ene Reaction of PhTD and Selected Monoterpenes
- Daytona Beach Rojas, William Manuel 17 Mainland Sr. H.S. 735 Essex Rd. 32014
A Control Processor
- Dunedin Robertson, Kathleen Anne 17 Dunedin H.S. R.R. 1, Box 117, Palm Harbor 33563
Toxicity of Aspartame to *Tetrahymena pyriformis*
- Fort Lauderdale Coppola, Pete Vito 16 Cardinal Gibbons H.S. 1510 S.W. 2 Ave., Pompano 33060
State of the Art Digital Technology as Applied to Meteorological Evaluation
- Hialeah Barreras, Mercedes Zoe 17 Hialeah Sr. H.S. 5760 E. 4 Ave. 33013
Stabilization of Beta Amylase by Covalent Attachment of Dextran
- Fiorentino, Gilbert Jeffrey 17 Hialeah Sr. H.S. 4292 W. 6 Ct. 33012
D-Valine as a Selective Agent for Normal Human and Animal Epithelial Cells in Culture
- Jacksonville Graham, Robert Joseph 17 Terry Parker Sr. H.S. 2620 Trollie Ln. #9 32211
Chromatographic Isolation of Undecaprenol and Undecaprenyl Pyrophosphate Synthetase Neutral Lipid Stimulating Fractions From *Lactobacillus plantarum*
- Melbourne Belefant, Helen Lane 16 Melbourne H.S. 305 Oak St., Melbourne Beach 32951
Effects of Different Light Wavelengths on Plant Biochemistry
- Murray, Annie Laurie 17 Melbourne H.S. 419 Franklyn Ave., Indialantic 32903
Antigenic Composition of Strains of *Actinomyces viscosus*
- Tamblyn, Paul Husson 17 Melbourne H.S. 221 Coconut Dr., Indialantic 32903
Effect of Kinetin in Relation to Membrane Permeability of Substrates at the Site of Anthocyanin Biosynthesis in *Brassica oleracea*

- Merritt Island Conti, Nicholas Joseph 17 Merritt Island H.S. 410 S. Tropical Trail 32952
Photochemically Induced Carbon Network Crosslinking of Polyethylene
- Miami Smith, Greg Kenneth 17 Southwest Miami H.S. 9362 S.W. 35 St. 33165
Investigation of the Molecular Interaction and Micellurization of Rodamine B With Carboxylic Acids
- Miami Beach Weissshaut, Richard 17 Miami Beach Sr. H.S. 7327 Dickens Ave. 33141
The Spirometer Vest
- Palm Beach Segal, David Michael 17 Palm Beach Gardens H.S. 4629 Spruce Ln. 33410
Spectrophotometric Analysis of Protein-Drug Interactions Using Competitive Binding Techniques and Spectroscopic Probes
- St. Petersburg Porta, Thomas Kabrick 18 Dixie Hollins H.S. 2624-59 Way N. 33710
Demonstration of Antigenic Relations Between a Glycoprotein From the Connective Tissue of the Porcine Mitral Valve and Homologous Serum IgG
- Satellite Beach Marquand, William Brian 17 Satellite H.S. 2156 S. Patrick Dr., N. India-Computer Modelling of the Transfer of UV-B lantic 32903
Radiation Through the Earth's Atmosphere and Ozone Problem
- Tallahassee Mandelkern, David 17 FSU Developmental Research School 1503 Old Fort Dr. 32301
Semiconductor Device Noise Measurement System
- Winter Park Driscoll, James Richard 17 Winter Park Sr. H.S. 717 St. Dunstan Way 32792
Effects of a Nonrestrictive Programming Environment on the Production of Software

GEORGIA

- Lilburn Pollack, Ian Fredric 16 Berkmar H.S. 530 Village Green Ct. 30247
Effect of Ultraviolet Induced Pigment Mutations and Photoreactivation on the Ultraviolet Resistance of *Serratia marcescens*
- Roberta Hill, Vic Brown 17 Crawford County H.S. P.O. Box 155 31078
Determination of the LD-50 and I-P of Malathion
- Smyrna Gibson, Lisbeth Randol 16 F.T. Wills H.S. 813 Parkway Dr. S.E. 30080
Life Printing: A New Technique for Biological Studies
- Warner Robins Wight, Virginia Joy 17 Warner Robins H.S. 214 Wellston Dr. 31093
Determination of the Number of Edges Which Must be Removed From A $K_{n,n}$ and A K_n in Order That the Resulting Graph be Planar
- Watkinsville Brown, Rebecca Elaine 17 Oconee County H.S. 748 Ivywood Dr., Athens 30601
Heating of Household Water With Solar Energy

HAWAII 8

- Aiea Kagawa, Dean Masao 17 Aiea H.S. 98-518-1 Kaonohi St. 96701
Effect of Endocrine Substances on the Heartbeat Rate of the "Opae"
- Hilo Ikeda, Koren Iwalani Tsukiko 17 Hilo H.S. 1090 Ainako Ave. 96720
Isolation and Identification of the Plant Pigments in *Gossypium tomentosum*
- Honolulu Takaki, Katherine Shigeko 17 Henry J. Kaiser H.S. 7275 Nohili St. 96825
Effects of the Larval Stage on Mating Behavior in *Drosophila melanogaster*
- Uyehara, Catherine Fay 17 McKinley H.S. 1012 Akala Ln. 96814
Effect of the Toxin Holothurin on Cardiac Activity and Respiratory Systems of *Macrobrachium lar* and *Palaemon debilis*
- Seale, Eric Christopher 17 Moanalua H.S. 13 Worchester Ave., APO San Francisco, CA 96553
Computer Simulation of a Board Game
- Sasaki, Stanley Ken 17 Punahou School 2969 Kalawao St. 96822
Overcoming the Mechanical Limitations of Stepping Switches
- Sanders, Larry Ian 17 Radford H.S. 4385 Keaka Dr. 96818
An Investigation of Papain
- Ing, Beverly Grace 17 St. Francis H.S. 816 N. Judd St. 96817
Lead in Edible Hawaiian Seaweeds

IDAHO 2

- Caldwell McCue, Michael Patrick 17 Caldwell H.S. 2916 College Ave. 83605
Acoustic Detection of Shadow Band Phenomena
- Potlatch Colvin, Lorraine Jean 17 Potlatch Sr. H.S. 980 Cedar 83855
Inhibition of Seed Germination Using Yarrow Leaf and Petiole Extract

ILLINOIS

- Chicago Ramirez, Laura Lynne 18 Metro H.S. 5720 W. Midway Park 60644
Effect of Light Variations on the Locomotor Activity of
Pagurus longicarpus
- Atanus, Susanne 18 Roosevelt H.S. 4931 N. Monticello Ave. 60625
Analysis of Fluoride in Toothpastes and H₂O
- Svejkovsky, Jan 18 Univ. of Chicago Lab. School 3107 Longfellow Ave..
Isolation of *Klebsiella pneumoniae* Mutants Hazel Crest 60429
- Evanston Logan, Pamela 17 Evanston Twp. H.S. 1014 Ridge Ct. 60202
Capable of Nitrogenase Synthesis in the Presence of O₂
- Hillside Interferometry and the U-V Plane
- Papatheofanis, Frank John 17 Proviso West H.S. 5820 W. Maple,
Differential Potentiometric Titration of Berkeley 60163
Chloride-Bromide-Iodide Ion Mixture
- Peru Bowland, Christopher Lee 17 St. Bede Academy 9 Oakdale Rd., Spring
Infrared Search for Young Stellar Objects Valley 61362
- Quincy McFarland, Scott Alan 17 Quincy Sr. H.S. II 41 Lincoln Hill 62301
Extraction of Lead From Gasoline Using the Chelating
Agent Ethylenediamine-Tetraacetic
- Rockford Tilke-meier, Peter Lloyd 18 Guilford H.S. 5701 Hoylake 61107
Study of the Surface Structure of Human Glioma Cells
With Scanning Electron Microscopy
- Taylorville McClure, John Miles 17 Taylorville H.S. 411 S. Clay 62568
Paper: The Fifth Wonder
- Waukegan Pak, Jaell 18 Waukegan East H.S. 1604 Edgewood 60085
Measuring Speed of Electricity

INDIANA

- Albion Elser, Elaine Kay 17 Central Noble H.S. Rt. 1 46701
Determination of Chemically Transferred Learning Through
Experimental Analysis
- Bloomington Mielke, Lynne Renee 17 Bloomington H.S. South 1727 E. Hunter 47401
Aberrant Phototactic Response in *Chlamydomonas*
- Carmel Daniels, Charles Bryan 17 Carmel H.S. 11705 Eden Estates Dr. 46032
Consequence of Accidental Bio-Contamination of Martian
Environment Via Terrestrial Intrusion
- Delphi Hoffman, Michael John 18 Delphi Community H.S. 202 Armory Rd. 46923
Movements of Low Pressure Systems Across the U.S. and
How They Effect the Weather of Delphi, Indiana
- Hammond Scott, David Mark 17 Hammond H.S. 7049 Forest Ave. 46324
Dynamic Optics-Referencing Computers: Self-Organizing Systems
- Kendallville Brewer, Tony Mahlon 17 East Noble H.S. R.R. 3 46755
The Glottal Wave Form
- Rhodes, Lori Ellen 18 East Noble H.S. Country Club Hills 46755
Antibiotics From Soil Microorganisms: Isolation,
Characterization, and Sensitivity Testing
- West Lafayette Lohmann, Kenneth John 17 West Lafayette H.S. 1006 Sunset Ct. 47906
Vocalizations of the Greenfrog: A Systematic Approach to
Classification and Differentiation

IOWA

- Bettendorf Goodrich, Robert Warner 17 Bettendorf H.S. 1202 Denniston Ave. 52722
Application and Evaluation of Techniques and Materials
in Lunar, Planetary and Stellar Photography
- Dubuque Roth, Paul Lawrence 18 Hempstead H.S. 2835 Washington St. 52001
Regional Correlation by Invertebrate Paleontology

KANSAS

- Lawrence Kwak, Larry W. 17 Lawrence H.S. 1505 Alvamar Dr. 66044
Metabolism of Sodium Cyclopropane Carboxylate by *Corynebacterium* (sp.)
- Marion Schmidberger, Lori Kay 17 Marion H.S. 321 N. First 66861
Pyramid Power: Secret of the Ages

- Overland Park Nyberg, Lisa Marie 17 Shawnee Mission West H.S. 8802 W. 99 Terr. 66212
Effect of Patterned and Nonpatterned Light on Alpha Waves
- Wichita Alden, William Wesley 17 Southeast H.S. 1101 S. 143 St. E. 67230
Hormone Receptor Site Interactions of Malignant and
Non-Malignant Tissue Cultures
- Vlamis, Theodore John 17 Southeast H.S. 901 Tara Ln. 67206
Effectiveness of Experimental Treatments in Inhibiting and
Reversing the Sickling of Erythrocytes Containing Hemoglobin S

KENTUCKY

- Ashland Green, Timothy Lee 17 Paul G. Blazer H.S. 342-31 St. 41101
Catalytic Hydrogenation of Carbon Monoxide to Hydrocarbons
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- Bowling Green Brownfield, James Allen 17 Warren East H.S. Rt. 3, Box 119, Smiths
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- Cynthiana Price, Steven Russell 17 Harrison County H.S. Rt. 2, Box 128 41031
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Fruiting Response in *Phaseolus vulgaris*
- Park Hills Reed, Mary Jo 17 Notre Dame Academy 1113 Cecelia Ave. 41011
Morphology and Growth Kinetics of Gel-Grown Lead Dendrites
- Schulte, Martina Marie 18 Notre Dame Academy 58 Arcadia Ave., Lake-
Comparative Study of the Observed and side Park 41017
Theoretical Frequencies of Recessive Traits Using the
A Priori, Propositus and Discarding the Singles Methods

LOUISIANA

- Lutcher Brignac, David Gerard 17 Lutcher H.S. 933 Second St. 70071
Methanol as a Gasoline Extender

MAINE

- Bangor Gotlib, Louis Jeffrey 17 Bangor H.S. 238 Lincoln St. 04401
Identification of Amino Acids in Late Pleistocene Brachiopods
and Comparison With Amino Acids Found in *Terebratulida*

MARYLAND

- Baltimore Posner, Allan Stuart 17 Milford Mill Sr. H.S. 7411 Ricksway Rd. 21208
Chain Division: Origins and Theories
- Beltsville Maxwell, Laura Lynn 18 High Point Sr. H.S. 9720 Riggs Rd., Adelphi 20783
Effect of Various Plant Organs and Age of Tissue on Auxin
Induced Growth of Isolated Bean Mesocotyl Sections
- Bethesda Karim, Shahriar Reza 16 Walt Whitman H.S. 5204 Westpath Way 20016
Increase in Resistance to Ultraviolet Radiation in
Escherichia coli and *Bacillus subtilis*
- Silver, Daniel Peter 17 Walt Whitman H.S. 5505 Mohican Rd. 20016
In vitro Testing of Chemotherapeutic Agents
- Oxon Hill Adams, Andrea Carina 17 Friendly Sr. H.S. 9102 Limon Ct. 20022
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Lens System for Astronomical Use
- King, Mary Jean 17 Friendly Sr. H.S. 9503 Caltor Ln. 20022
Toy Boat, Toy Boat: It Sails Upwind
- Milloy, Steven J. 18 Friendly Sr. H.S. 3600 Lumar Dr. 20022
Cerenkov Radiation Calculations
- Potomac Croteau, Kathryn Nell 17 Winston Churchill Sr. H.S. 8804 Harness Trail
Analysis of the Timber Wolves' Regulatory Effect on 20854
the Moose Population of Isle Royale in a Predator-Prey Relationship
- Silver Spring Dollar, Allen Lee 17 Springbrook H.S. 14415 Marine Dr. 20904
Spontaneous Rosette Formation of Rat Thymus Cells With
Guinea Pig Erythrocytes
- Yodh, Arjun Gaurang 17 Springbrook H.S. 12 Schindler Ct. 20903
Chemical Evolution on Jupiter: Effects of Hydrogen Concentration
on Organic Synthesis in Simulated Jovian Atmospheres

Timonium Kennedy, Stanley Marcus 17 Dulaney Sr. H.S. 29 Gibbons Blvd., Cockeysville 21030
Resetting the Biological "Clock" of a
Drosophila melanogaster

MASSACHUSETTS

Attleboro Semple, Thomas Carl 17 Attleboro Comprehensive H.S. 32 Winthrop Dr. 02703
Investigation of Furfural Production From Corn Cobs
Lexington Keller, Andrew David 17 Lexington H.S. 25 Baskin Rd. 02173
Origins and Developments of the Light Absorbing
Pigments of Photosynthesis
Marblehead Curtis, Rene Virginia 18 Marblehead H.S. 50 Beacon St. 01945
Direction of Sand Transport Caused by the Longshore
Current on Second Beach in the Surf Zone
Needham Randall, Melinda Sue 18 Needham H.S. 62 Noanett Rd. 02194
Detection of Sister-Chromatid Exchange Within Murine Lymphocytes
Swansea Reiser, David Richard 17 Joseph Case Sr. H.S. 128 Bushee Rd. 02777
Designing and Building an Operating Gas Chromatograph
Wayland Chodosh, Lewis Alan 17 Wayland H.S. 35 Oak Hill Rd. 01778
Effect of Compound 48/80 on the Degranulation of Human Mast Cells
Wellesley Cariani, Karen Ann 17 Dana Hall School Dana Hall School - JHC 02181
Chemical Analysis of Cotton for Terpenes and Tannins
Westwood Follett, David Rhodes 18 Westwood H.S. 5 Hampton Rd. 02090
Electrophoresis: Analysis of Protein Characteristics

MICHIGAN

Birmingham Goodman, Robert Martin 17 Detroit Country Day School 23570 Edinburg Pl., Southfield 48034
Computer Applications to the Theory
and Practice of Organic Chemistry
Lopatin, Gerald Glen 18 Wylie E. Groves H.S. 30436 Embassy Dr. 48010
Efficiency of Electrolytic Hydrogen Production
Ortonville Loosemore, Sandra Jean 17 Brandon H.S. 3301 Sherwood 48462
Deposits of Native Copper in Michigan's Keweenaw Peninsula
Redford Calamia, Justina Charlene 18 Redford Union H.S. 24935 Midland 48239
Adsorption of Actinophages MSP2 to Isolated Cell Walls of
Streptomyces Venezuelae S13
Warren Hoefflein, Marcella Marie 17 Fitzgerald H.S. 22225 Logue 48091
Effects of Photodynamic Variation on the Morphogenesis
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MINNESOTA

Bloomington Boorsma, Daniel Kevin 17 Thomas Jefferson H.S. 4816 W. 96 St. 55437
Quantum Mechanical Perspectives of the Hydrogen Atom
Rochester Bowie, James Ulrich 17 Mayo Sr. H.S. 2221 Lenwood Dr. S.W. 55901
Evaluation of Thrombin Activity Towards Two Synthetic Substrates
Winona Brom, Erik William 17 Cotter H.S. 3655 W. 6 St. 55987
Fermentation of Waste Materials to Make Methane

MISSISSIPPI

Bay St. Louis Young, Valorie Jean 17 Bay Sr. H.S. P.O. Box 106, Pearlinton 39572
Use of Eichhornia crassipes as a Carbohydrate for the
Polymerization of Plastic
Tylertown Hurst, Joseph Steve 17 Tylertown H.S. Rt. 2, Box 213, McComb 39648
Effect of Radiation on Abnormal Chromosomes Present in
Cell Lines From Rhesus's Monkey and Human Cancer Tissue

MISSOURI

Ballwin Bernal, Janet Lynn 17 Parkway West Sr. H.S. 15242 Islevue Dr. 63011
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Ewing Phillips, Mitchell Linn 18 Highland H.S. R.R. 1 63440
Effect of Various Antioxidants and Membrane Stabilizers on the
Tumor and Life Span of a New Drosophila melanogaster Mutant

Liberty Adams, William Walter III 18 Liberty H.S. 135 N. Missouri 64068
Effects of 3-Indoleacetic Acid on the Gametophyte of
the Moss Brachythecium spp
St. Joseph Farrar, Glenda 18 Bishop LeBlond H.S. 2001 S. 36 St. 64507
Decaffeination of Thea Sinensis
Dire, James Richard 17 Central H.S. 2205 Cranberry Hill Ln. 64503
Construction of a Gouy Balance and Testing of Spin
Characteristics of Selected Complex Compounds
St. Louis Erk, John Peter 17 St. Mary's H.S. 4012 S. Spring 63116
Effect of Pollution on the Dissolved Oxygen Content in Sugar Creek
Shelbina Platz, Jerry Gayle 17 South Shelby H.S. 508 E. College Ave. 63468
Bleaching of Euglena gracilis Chloroplasts by Streptomycin
Springfield Franson, Raymond Lee 17 Glendale H.S. 2010 S. Ingram Mill Rd. 65804
Microbial Growth Inhibitors From British Red Soldier and
Reindeer Lichen in a Twelfth Year Old Field

MONTANA

Busby Heinicke, Eric Allan 17 Busby H.S. Box 56 59016
Solar Water Heater

NEBRASKA

Omaha Lemke, Debra Ann 17 Central H.S. 1103 S. 31 St. 68105
Determination of the Best Environmental Conditions for
the Operation of a Toy Drinking Duck
Olsen, JoAnn Marie 18 Central H.S. 2524 S. 43 St. 68105
Effect of Varying Wavelengths of Light on the Separation of
Leaf Pigments by Paper Chromatography
Alger, Kevin Lynn 17 Northwest H.S. 10401 N. 108 St. 68134
Improving the Aerodynamic Picture of Tractor-Trailers
Greene, George Marlin 17 Northwest H.S. 10915 N. 61 St. 68152
Experimental Determination of the Effects of Temperature
on the Pitch of a Stretched String
Hunt, Thomas E. 18 Northwest H.S. 6129 Read St. 68152
Acoustical Analysis of a Corrugated Pipe
Miller, Steven Eric 18 Northwest H.S. 8211 Boyd St. 68134
Transmission Characteristics of Light Through Glass
Murray, Janet Lynn 17 Northwest H.S. 7626 N. 57 St. 68152
Use of a Difference Tone as an Effective Masker
Ray, Keith Wilson 18 Northwest H.S. 8725 N. 66 St. 68152
Effects of Interaural Time Delay on the Spatial Perception of Sound
Stanton Luenighoener, Peter Donald 18 Stanton Public H.S. R.R. 2 68779
Spider's Web: A Research Tool
West Point Baumert, Ruth Ellen 17 Central Catholic H.S. R.R. 1, Box 86 68788
Paleobotany: Study of Seeds From Pitfalls of Early Indian Sites

NEVADA

North Las Vegas Stein, Emil Alexander 18 Rancho H.S. 3124 Demetrius Ave., Las Vegas 89101
Multiple Modes of Action Bacitracin

NEW HAMPSHIRE

Concord Ferguson, Henry Closson 17 St. Paul's School Box 277, Thompson, CT 06277
Very Faint Asteroids

NEW JERSEY

Bergenfield Armentano, Donna Diane 17 Bergenfield H.S. 51 Hickory Ave. 07621
Allelopathy of Moss on Microorganisms
Orshan, Cassie Ruth 16 Bergenfield H.S. 184 S. Vivyan St. 07621
Baroreceptor and Pulmonary Reflex Interactions in Man
Wiaz, June 17 Bergenfield H.S. 42 Berwyn Pl. 07621
Effects of the Wisconsin Point Sanitary Landfill Upon the
Concentrations of Various Parameters in the Surrounding
Aquatic Environment

Jersey City Falls, Ingrid Taina 17 St. Dominic Academy 270 Henderson St. 07302
Budding in Hydra Viridis
Mulcahy, Mary Annette 17 St. Dominic Academy 112 Lembeck Ave. 07305
The Xg^a Blood Group System: Inheritance of an X-Linked Trait
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Washington Trip Winners
of the
Thirty-sixth Annual Science Talent Search ®
for the Westinghouse Science Scholarships and Awards

The forty Washington trip winners of the 36th Annual Science Talent Search, among whom \$67,500 of Westinghouse Science Scholarships and Awards will be distributed, represent about 3.9% of those who completed entries in this scientific and educational competition.

Designed to discover and develop scientific and engineering ability among high school seniors, the Science Talent Search is conducted annually for the Westinghouse Science Scholarships and Awards by Science Service, 1719 N Street, N.W., Washington, D.C. 20036.

Seven girls and 33 boys are being invited to Washington, D.C., for an all-expense paid trip March 4-8, 1977, to attend the Science Talent Institute. Here 10 winners will be selected by the board of judges to receive one of the following four-year Westinghouse Science Scholarships: One \$10,000 (\$2,500 per year), two \$8,000 (\$2,000 per year), three \$6,000 (\$1,500 per year), four \$4,000 (\$1,000 per year). The remaining 30 contestants will be given Westinghouse Science Awards of \$250 each.

The trip winners are 16 to 18 years of age and come from 29 cities in 19 states. They were picked by the judges from among 13,281 contestants of whom 1,009 completed their entries by writing a report on their science project, submitting personal data and teacher recommendations. Completed entries were received from 49 states, the District of Columbia and Puerto Rico.

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HOME ADDRESS follows name of school

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