

FILE COPY

HONORS GROUP

IN

THE 33rd ANNUAL

Science Talent Search[®]

for the

**Westinghouse Science Scholarships
and Awards**

1974



SCIENCE CLUBS OF AMERICA

Administered By Science Service

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

PENNSYLVANIA

Annville Miller, Dale Allen 17 Annville-Cleona H.S. 1447 E. Queen St. 17003
 Erdenheim Beckman, Robert Allen 17 Springfield H.S. 905 Summit Lane, Oreland 19075
 Rosemont Kare, Jordin T. 17 Harriton H.S. 215 Fairview Rd., Narberth 19072
 Wyncote First, Michael Bruce 17 Cheltenham Twp. Sr. H.S. 7815 Gayl Rd., Cheltenham 19012

RHODE ISLAND

Warwick Ashworth, Michael Daniel 17 Toll Gate H.S. 46 Fountain Ave. 02886

TENNESSEE

Waverly Turner, Danny Lawrence 17 Waverly Central H.S. Box 194, New Johnsonville 37134

TEXAS

Dallas Schumacher, Mark Alexander 18 Hillcrest H.S. 7612 Mason Dells 75230
 Houston Senofsky, Gregory Michael 17 Lamar H.S. 3523 Merrick St. 77025
 *Carson, Milinda Ruth 18 Sharpstown Sr. H.S. 7603 Braes Meadow 77071

VIRGINIA

Arlington Leighton, Frank Thomson 17 Washington-Lee H.S. 2612 N. Fillmore St. 22207
 Herndon Barton, Mark David 17 Herndon H.S. 12842 Oxon Rd. 22070

WISCONSIN

Brookfield Getzel, Walter Armin 18 Brookfield Central H.S. 18440 Surrey Lane 53005

WYOMING

Cheyenne Evanoff, Emmett 17 Cheyenne Central H.S. 712 Hirst St. 82001



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

Washington Trip Winners

of the

Thirty-third Annual Science Talent Search®

for the Westinghouse Science Scholarships and Awards

The forty Washington trip winners of the 33rd Annual Science Talent Search, among whom \$67,500 of Westinghouse Science Scholarships and Awards will be distributed, represent about 8.5% 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.

Eight girls and 32 boys are being invited to Washington, D.C., for an all-expense paid trip March 13 through March 18, 1974, 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 20 years of age and come from 35 cities in 21 states. They were picked by the judges from among 12,891 contestants of whom 1,104 completed their entries by writing a report on their science project, submitting personal data and teacher recommendations. Completed entries were received from 49 states and the District of Columbia.

Washington Trip Winners

* indicates girls
H.S. indicates High School

HOME ADDRESS follows name of school
AGE of winner follows name

ALABAMA

Falkville *Bramlett, Glenda Sue 17 Falkville H.S. R.R. 1, Hartselle 35640

CALIFORNIA

Alhambra *Fang, Meika Ann 18 Alhambra H.S. 1401 Stonewell St., Monterey Park 91754

Claremont Banwell, Thomas Clyde 16 Claremont H.S. 885 Atlanta Ct. 91711

COLORADO

Boulder Schneider, Thomas Dana 18 Boulder H.S. 6980 Hunter Pl. 80301

FLORIDA

Melbourne Dargan, Richard Alan 17 Melbourne H.S. 737 Port Malabar Blvd., Palm Bay 32905

IDAHO

St. Maries *Reaves, Cheryl Dawn 18 St. Maries H.S. P.O. Box 80, Fernwood 83830

ILLINOIS

Wheaton *Anderson, Carol Joy 17 Wheaton North H.S. 901 W. Lincoln 60187

LOUISIANA

Lafayette Eyster, Kenneth Marshall 17 Lafayette H.S. 226 Montaigne Dr. 70501

MINNESOTA

Brewster Wehler, Daniel 18 Brewster H.S. Route 1 56119
Rochester Taswell, Carl 17 Mayo H.S. 422-7th Ave. S.W. 55901

NEBRASKA

Elkhorn MacGuire, John Conlin 17 Mt. Michael Benedictine H.S. 815 S. Durbin St., Casper, Wyoming 82601

NEW JERSEY

Paramus *Garvin, Vicki Lynn 17 Paramus H.S. 198 Harwood Pl. 07652
Trenton Lee, Ho-Jin 16 Lawrence H.S. North 180 Franklin Cor. Rd., Apt. J-3 08638

NEW YORK

Great Neck Frank, Edward Harrison 17 North Sr. H.S. 17 Catalina Dr. 11024
Huntington Klein, Robert William 17 Walt Whitman H.S. 9 Chanticleer Ct., Huntington 11743
Station
Jamaica Trommer, Richard Howard 16 Jamaica H.S. 119-18 Park Lane S., Kew Gardens 11415
New York *Rabinowitz, Linda Carol 16 Bronx H.S. of Science 2450 Wilson Ave. Bronx 10469
Roger, Ignatius Daniel 16 Bronx H.S. of Science 819 W. 180 St. 10033
Barany, Francis 16 Stuyvesant H.S. 370 E. 76 St., Apt. A-301 10021
Lander, Eric Steven 17 Stuyvesant H.S. 928 E. 58 St., Brooklyn 11234
Queens Village Haber, Stuart Alan 18 Martin Van Buren H.S. 268-14 77 Ave., New Hyde Park 11040
McCabe, Thomas Gerard 17 Martin Van Buren H.S. 82-50 Langdale St., New Hyde Park 11040

OHIO

Dayton *Bockenstedt, Linda Kathryn 16 Wayne H.S. 5780 Benedict Rd. 45424
Massillon Lucas, Bruce David 17 Perry H.S. 4935 Menlough Dr., N.W., Canton 44708

OKLAHOMA

Ponca City Carlberg, Philip Jay 18 Ponca City Sr. H.S. 709 Sugar Maple 74601
Tulsa Lee, Ock-Horn 20 Thomas A. Edison H.S. 3964 S. Delaware Pl. 74105

OREGON

Portland Kroo, Ilan Mendel 17 David Douglas H.S. 1522 S.E. 135th Ave. 97233

Eric is the son of Mrs. Rhoda Lander and the late Harold Lander. He lives at 928 East 58th Street, Brooklyn.

He was one of 40 finalists in the Science Talent Search which annually grants a total of \$67,500 in Westinghouse scholarships and awards.

Two of the top 10 scholarship winners were girls.

Eric was selected from more than 13,000 high school seniors throughout the 50 states and the District of Columbia.

The nine other major scholarship winners chosen in the competition were:

Frank Thomson Leighton, 17, of 2612 North Fillmore Street, Arlington, Va., and Linda Kathryn Bockenstedt, 16, of 5780 Benedict Road, Dayton, Ohio, who both won \$8,000 scholarships. Linda's sister Paula, was a Westinghouse Science Talent Search winner in 1971.

Emmett Evanoff, 17, of 712 Hirst Street, Cheyenne, Wyo.; Richard Alan Dargan, 17, of 737 Port Malabar Boulevard, Palm Bay, Fla.; and John Conlin MacGuire, 17, of 815 South Durbin Street, Casper, Wyo., all received \$6,000 scholarships.

Winners of \$4,000 scholarships were Edward Harrison Frank, 17, of 17 Catalina Drive, Great Neck, N.Y.; Carl Taswell, 17, of 422 Seventh Avenue, S.W., Rochester, Minn.; Jordin T. Kare, 17, of 215 Fairview Road, Narberth, Pa.; Linda Carol Rabinowitz, 16, of 2450 Wilson Avenue, Bronx, N.Y.

Named as alternates to the \$4,000 scholarships were Stuart Alan Haber, 18, of 268-14 77th Avenue, New Hyde Park, N.Y.; Ilan Mendel Kroo, 17, of 1522 S.E. 135th Avenue, Portland, Oreg.

The scholarship winners were selected from 40 finalists who submitted science projects and were interviewed by a team of judges. Each of the 30

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 9, 1974, 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 50 girls and 250 boys. Of the Honors Group 67.5% rank in the upper 5% in their high school classes.

The Annual Science Talent Search

The Science Talent Search was the pioneering endeavor to discover at the 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-three 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 30, 1974

Honors Group

in the Thirty-third Annual Science Talent Search®

* indicates girls HOME ADDRESS is underlined
H. S. indicates High School AGE of winner follows name
Title of project report submitted is on next line

ALABAMA

Athens *Honeycutt, Catherine Lee 17 Athens H.S. 503 S. Clinton 35611
Demonstrating that the Cross-Relaxation Time Between Rotational
Energy Levels in a CO₂ Laser is Finite
Falkville *Bramlett, Glenda Sue 17 Falkville H.S. R.R. 1, Hartselle 35640
Effects of Gravity on Plant Growth
Huntsville Barr, Russell Thomas 17 Virgil I. Grissom H.S. 7803 Martha Dr. 35802
Microscopic Holography
Cotter, Clement Patrick 17 Huntsville H.S. 1110 Drake Ave., S.E. 35802
Experimental Method of Heat Stressing Materials as Demonstrated
by Post-Stressing Concrete
*King, Susan Lynn 18 Randolph School 9004 Valley View Dr., S.E. 35802
Studies on the Nutrition and Continuous Cultivation of the
Cellulolytic Bacterium Ruminococcus albus

ARIZONA

Phoenix Liepack, Scot Alan 17 Camelback H.S. 4809 N. 30th Pl. 85016
The Function of Various Components of C. sativa Extract
as Potential Insect Deterrents
Dulin, John Philip 18 Maryvale H.S. 5302 West Pierson 85031
Crystal Lattice Investigations: The Channeling of 0.5 MeV Protons
*Bayham, Mary Cecile 17 Xavier H.S. 331 E. Highland Ave. 85012
The Mirage Inquisition
*Ruiz, Laura Isabel 18 Xavier H.S. 510 W. San Juan 86013
Pascal's Triangle in 3 Dimensions
*Thom, Lynne Catherine 17 Xavier H.S. 323 E. Elm 85012
Depletion of Solar Radiation by Atmospheric Constituents

ARKANSAS

Charleston Berry, Danny Thomas 18 Charleston H.S. Rt. 3, Box 227 72933
The Dispersion Phenomenon at the Interface of Two Immiscible Liquids

CALIFORNIA

Alhambra *Fang, Meika Ann 17 Alhambra H.S. 1401 Stonewell St., Monterey Park
Cleavage of the Hemoglobin Mixed Disulphide 91754
Formed During Oxidation of Intact Red Cell Glutathione
as a Means of Protecting Hemoglobin
Antioch Webb, Robert Howard 17 Antioch H.S. 1300 Marie Ave. 94509
A Mountain Stream: An Analysis
Beverly Hills Avol, Erik Brian 17 Beverly Hills H.S. 621 N. Rexford Dr. 90210
A Basis for Symmetric Relativity Within the Expanding Universe
Lunsky, Benjamin George 17 Beverly Hills H.S. 604 N. Whittier Dr. 90210
A Video Laser Communicator
Big Pine Rapp, Steven Harold 17 Big Pine H.S. 370 S. Main St. 93513
Audible Tone Programmed Digital Computer
Canyon Country Kath, William Lawrence 16 Canyon H.S. 28608 Macklin Ave. 91351
Iterative Methods for Approximating Orbits

Claremont Banwell, Thomas Clyde 16 Claremont H.S. 885 Atlanta Ct. 91711
A Simple and Reliable Data Recording System

Covina Myers, Harry S. III 17 South Hills H.S. 20529 Rancho San Jose 91724
Uses of Schlieren Optics

El Cajon Wells, Albert Lewis, Jr. 16 Granite Hills H.S. 973 Sycamore Lane
Measurement Formulae of Certain Hyper-Conics 92021

Glendale Trim, Stanley Charles 17 Herbert Hoover H.S. 1234 Alma St. 91202
Hydrogen Absorption in Metals

La Canada Ivers, Kevin Thomas 17 St. Francis H.S. 1313 Mountain View Ave.,
Quantitative Study of the Effects
of Ionizing Radiation on Plastics South Pasadena 91030

Lodi *Chapman, Rae Lynn 17 Lodi H.S. 21794 N. Davis Rd. 95240
Spectrophotometric Detection of Nitrate

Los Angeles Chan, Shu Pui 17 Belmont H.S. 1215 W. 24 St. 90007
Applications of the Equilibrium of Forces in Certain
Engineering Minima Problems

Palo Alto Chao, Thomas Wai-Hong 17 Palo Alto Sr. H.S. 1524 Channing Ave. 94303
Effect of Red Blood Cell Membranes on Hydroperoxide Radicals
and the Effect of Hydroperoxide Radicals on Red Blood Cells

San Diego Goldberg, Alan Lee 17 Patrick Henry H.S. 6163 Chrismark Ave. 92120
A Comparison of Effects of Two Ionizing Radiations on Plants

Villa Park Jacobs, Kenneth D. 17 Villa Park H.S. 18341 Hillcrest Ave. 92667
The Transparency of Various Compounds to Magnetism

COLORADO 3

Boulder Hess, Walter Craig 16 Boulder H.S. 4927 Idylwild Trail 80301
Stratigraphy of the Lower Hygiene Sandstone Member

Schneider, Thomas Dana 18 Boulder H.S. 6980 Hunter Pl. 80301
A Computer Model for Population Behavior

Colorado Springs Murtha, James Derrick 17 Palmer H.S. 2724 Westwood Blvd. 80907
Bacterially Induced Neoplastic Cell Growth in *Helianthus annuus*
and Its Effects on the Host

Denver Denman, Scott Lester 18 Abraham Lincoln H.S. 3135 W. Bails Pl.
Cyclical Biochemical Responses in *Astacus fluviatilis* 80219

CONNECTICUT 4

Bloomfield Katz, Jeffrey Sherman 17 Bloomfield H.S. 7 Beatrice Ave. 06002
Microwave Communication

Farmington Schultz, Paul Bernard 17 Farmington H.S. 20 Ellen Dr. 06032
Spectrographic Analysis of Chemical and Mineral Compounds

West Hartford Johnson, Lawrence Ross 18 Conard H.S. 9 Pheasant Hill Dr. 06107
A Computer Program for Finding and Quantifying
Biological Rhythms

Wolcott *Lachnicki, Irena Krystyna 17 Wolcott H.S. 25 Cedar Point Rd. 06716
The Solar Spectrum and Analysis

DELAWARE 3

Wilmington Mathieu, Robert David 17 Brandywine H.S. 10 York Rd. 19803
A Study of Sunspots

McGregor, Scott Alan 17 Concord H.S. 3209 Summerset Rd. 19810
Crystalline Allotropes of the Sulfur Family

DISTRICT OF COLUMBIA 1

Washington Haney, Cecil Diggs 18 Eastern H.S. 212 Kentucky Ave., S.E. 20003
Experimental Analysis of Crystal Dehydration

FLORIDA 9

Chipley Malloy, John Dexter III 17 Chipley H.S. R.R. 1, Box 50 32428
Effect of Solar Wind Velocity on the Decametric
Radiation From Jupiter

Cocoa *Gramly, Shonnie L. 17 Cocoa H.S. 2522 Stradford Dr. 32922
Simplification of the Cold Phenol Extraction Procedures for
RNA From Sea Urchin Eggs

Daytona Beach Hendricks, Michael William 17 Seabreeze Sr. H.S. 524 Bellevue Ave.
Effects of Sodium Amobarbital on 32014
Bimolecular Model Membranes

Fort Lauderdale Azar, James George 18 Nova H.S. 1131 N.W. 74th Way, Hollywood
Unique Quadrant Graphs and Theoretical 33024
Postulates Concerning Psychological Mathematization

Leiba, Barry 16 Nova H.S. 7909 Tropicana St., Miramar 33023
A Characterization of Divisible Abelian Groups

Peretz, Steven Ira 17 Nova H.S. 4218 Taylor St., Hollywood 33021
Aerodynamic Stability Induced by Gyration

Jacksonville McKibben, Brian Thomas 17 Terry Parker H.S. 7245 Sandy Bluff Dr.
Preparation of Proteins by *Saccharomycopsis* 32211
lipolitica

Sapio, Ronald Louis 18 Terry Parker H.S. 2015 Samontee Rd. 32211
Pesticide Contamination Analysis and Cardiological Rate
Effects of Pesticide Exposure in *Callinectes sapidus*

Melbourne Costley, William Claude 17 Melbourne H.S. 2707 S. Dairy Rd. 32901
The Role of Calcium in Melanophore Dispersion

Dargan, Richard Alan 17 Melbourne H.S. 737 Port Malabar Blvd., Palm
Cyclic AMP: Inhibition of Yeast Cell Growth Bay 32905

Merritt Island Willson, Christopher Stewart 17 Merritt Island H.S. 65 Granada Ave.
Synthesis and Nuclear Magnetic Resonance Analysis 32952
of Fluorinated Oxetanes

Miami Reid, Alan James 17 Southwest Miami Sr. H.S. 10900 S.W. 32 St. 33165
Prunum apicinum as a Predator

Pensacola Danly, Bruce Gordon 17 Pensacola Academy 4810 Manolete Dr. 32504
Plating and Testing Different Electrodes for Use as Anodes
in Various Electrolytes

GEORGIA 2

Atlanta Irby, Steven Mark 17 Lakeside H.S. 2069 Castleway Dr., N.E. 30345
An Acoustical Emergency Warning System Utilizing
the Water Supply System of a Metropolitan Area

Trawick, Charles David 17 Lakeside H.S. 2479 Burnt Leaf Lane.
A Specialized Computer for Decatur 30033
Cellular Games

Augusta Miller, Averall 17 Lucy C. Laney H.S. 1262 Anderson Ave. 30901
Solar Electricity

Austell Ratcliff, Reginald Alan 18 South Cobb H.S. 1423 Marlene Lane, Mableton
Determining Empirical Equations Using a 30059
Triangle of Finite Differences

McDonough Wehner, Michael James 16 Henry County H.S. 249 Manchester Ave.,
A Theory on the Origin of Globular Hampton 30228
Clusters

Ocilla Sizemore, Glenn Daniel 17 Irwin County H.S. Rt. 2 31774
Effect of 2,4-Dichlorophenoxyacetic Acid on *Drosophila melanogaster*

Watkinsville *Snyder, Delores Diane 17 Oconee County H.S. Rt. 1, Box 242 30677
Separation of Tobacco Alkaloids by Thin-Layer Chromatography

HAWAII 2

Aiea *Kubota, Janice Shigeko 17 Aiea H.S. 99-1641 Hoapono Pl. 96701
The Role of Host Relationships in *Philophthalmus gralli*

Waianae Maeda, Isaac Mitsukazu 17 Waianae H.S. 85-307 Waianae Valley Rd.
Effects of Light and Nutrients on Spore Dimorphism 96792
in *Helminthosporium rostratum*

IDAHO 3

Boise *Croghan, Marilyn K. 18 Borah H.S. 2221 Hervey St. 83705
Quantitative Analysis of the Carotene in Hydroponically Grown
Tropical Tomatoes

- Caldwell Waterman, Timothy H. 17 Caldwell H.S. Rt. 6 83605
Computer Logic
- St. Maries *Reaves, Cheryl Dawn 18 St. Maries H.S. P.O. Box 80, Fernwood 83830
Phototropic Dispersal of Spores by the Fungus Pilobolus

ILLINOIS

- Chicago Perlin, Richard Michael 17 Mather H.S. 6215 N. Francisco 60659
How Vitamin E Preserves Vitamin A
- Cohen, Michael Ray 17 Roosevelt H.S. 3337 W. Cullom Ave. 60618
Gas-Magnetic Interactional Analysis
- Moskowitz, Mark Steven 17 Sullivan H.S. 2740 W. Chase 60645
Subliminal Perception
- Downers Grove Blazek, Mark Christopher 17 Downers Grove South H.S. 6433 Dean Dr..
Quantitative Analysis of the Activator in Woodridge 60515
Fluorescent Calcite
- Edinburg Sparks, James Alan 17 Edinburg H.S. R.R. 2, Box 104 62531
Is Sleep Learning Possible?
- Highland Park Silbart, Steven Brian 17 Highland Park H.S. 1157 Taylor Ave. 60035
Qualitative Analysis of an Optical Luminance Phenomenon
- Jacksonville Heiss, Ralph Lokke 17 Jacksonville H.S. 1106 W. College 62650
The Expanding Universe
- LaHarpe Myers, Scott LeRoy 18 LaHarpe H.S. Box 64 61450
Studies on Theory and the Propagation of the Audio Frequency Wave
- Manteno *Brandt, Danita Sue 17 Manteno H.S. R.R. 1, Peotone 60468
Determining Mineral Hardness: A Revised Hardness Scale
- Northfield Blanton, Richard Lawrence 17 New Trier West H.S. 2343 Meadow Dr..
Distribution of Myxomycetes on Bark of Wilmette 60091
Living Trees in the Vicinity of Austin, Texas
- Skokie Teplinsky, Kerry Scott 17 Niles Twp. H.S. North 4333 W. Emerson St.
Parole Prediction Using Isolation and Social Climate 60076
- Wheaton *Anderson, Carol Joy 17 Wheaton North H.S. 901 W. Lincoln 60187
Effects of Urbanization on the Glacial Topography
of the Wheaton Quadrangle

INDIANA

- Evansville Heerdink, David Lee 18 North H.S. R.R. 3, Box 141, Voight Rd. 47711
Development and Application of Solar Energy in the
Heating of Homes and Buildings
- Fort Wayne Gladieux, Mark James 16 Bishop Dwenger H.S. 4810 Forest Ave. 46805
The Statistical Analysis of Nuclear Radiation Counting Data
- Highland Alek, William Stephen 17 Highland Sr. H.S. 3506-43rd Pl. 46322
A New Concept in Visual Communication: The Solid State
Photo-Electric Image Camera
- Indianapolis Cislak, Gregory Noble 18 Brebeuf Jesuit Preparatory School 8065
Pyridines as Fungicides Morningside Dr. 46240
- Merrillville Oliver, Neal Conrad 17 Merrillville H.S. 5980 Grant Pl. 46410
The Four Color Problem
- Michigan City Shiparski, Michael Leon 17 Marquette H.S. 211 Derby St. 46360
A Study of Human Neural Nuclear-Cytoplasmic Radiosensitivities
After Exposure to X-Irradiation
- New Haven Pelletier, Michael Jerome 18 New Haven Sr. H.S. 311 Tylar Pkwy. 46774
Analysis of Low Molecular Weight Aldehydes in
the Cellulose Distillate

KANSAS

- Fredonia Jenkins, William David 18 Fredonia Sr. H.S. 1314 Jackson St. 66736
The Charge and Mass of the Electron
- Kansas City Mealman, Terence Lee 17 Wyandotte H.S. 8200 Everett 66112
Utilization of Solar Energy in the Distillation of Sea Water
- Wamego Tessendorf, Steven Donald 17 Wamego H.S. 903 Poplar 66547
Paper Electrophoresis

KENTUCKY

- Louisville Rupp, Edward Jacob 17 Ballard H.S. 711 Victoria Pl. 40207
Design and Construction of an Optical Tape Reader
Using Primary Colors

LOUISIANA

- Hahnville Perry, David Wayne 16 Hahnville H.S. Rt. 1, Box 226 F, Luling 70070
ABO Blood Group Determination of Human Hair Using an
Absorption-Elution Method
- Lafayette Eyster, Kenneth Marshall 17 Lafayette H.S. 226 Montaigne Dr. 70501
Effect of Various Types of Prairie Management on
Insect Trophic Level Diversity
- Metairie *John, Paula Ann 18 Grace King H.S. Wilshire Blvd. 816 Apt. A 70005
Purification of Lake Water
- New Orleans *Jurovich, Jewel Anne 17 St. Mary's Dominican H.S. 612 N. Pierce Ave..
Ecological Interrelationships of Metairie 70003
Two Species of Bacillus Isolated From the Soil

MAINE

- Lewiston Ouellette, Stephen Maurice 18 St. Dominic's H.S. 196 Pine St. 04240
Giberellic Acid and Its Effect on Plants
- Searsport McLaughlin, Mark Ernest 18 Searsport District H.S. RFD 04974
Thin-Film Semiconductors

MARYLAND

- Baltimore Resch, James Franklin 17 Loch Raven Sr. H.S. 9142 Covered Bridge Rd.
Effects of Foodplant Variation and Sex on Weight, 21234
- Bethesda Hebbard, Bruce Lawrence 17 Walter Johnson Sr. H.S. 4300 Glenridge
Chess Problem Solving by Computer St., Kensington 20795
- Hines, Emmett Womack III 17 Walter Johnson Sr. H.S. 9715 W. Bex
Pseudo Random Maze Hill Dr., Kensington 20795
Generator #4
- Horak, David Vaclav 17 Walter Johnson Sr. H.S. 5508 Oakmont Ave.
Extended Decimal Approximation of Pi 20034
- Trinish, Lloyd Alan 17 Walter Johnson Sr. H.S. 6303 Stoneham Rd.
Computer Analysis and Simulation of the 20034
Game of Monopoly
- Galfond, Glenn Joseph 17 Walt Whitman H.S. 8301 Loring Dr. 20034
Computer Programming of Cubic (3-D Tic-Tac-Toe)
- Forestville Jankowski, David Mark 17 Bishop McNamara H.S. 9710 Wyman Way.
An Analysis of Surface Upper Marlboro 20870
Tension-Temperature Curves
- Harwood McLellan, Scott Wayne 17 Southern Sr. H.S. Box 197A 20776
Communication via Fiber Optics
- Oxon Hill *Costenbader, Cynthia Lou 17 Oxon Hill Sr. H.S. 207 Kerby Pkwy. 20022
UV Radiation on Coleus blumei and Coleus frederici Plants
- Rockville *Hellman, Ilsa Joy 17 Robert E. Peary H.S. 17509 Princess Anne Dr..
Dose Rate Effects of Ultraviolet Light on the Olney 20832
Developmental Stages of Drosophila melanogaster

MASSACHUSETTS

- Holden Fenton, James Lewis 16 Wachusett Reg. H.S. 8 Monticello Dr., Paxton
Finite Time Determination of Reaction Kinetics 01612
- Mt. Hermon Dalton, Jeffrey Wells 17 Northfield Mt. Hermon School 38 Brookside Ave..
Computer Simulation of Experiments Greenfield 01301
in Qualitative Analysis
- Natick *Armour, Andrea Lyn 17 Natick H.S. 164 Speen St. 01760
Explorations With Infrared Photography and Infrared Luminescence
- Revere King, Kenneth Roy 17 Revere H.S. 121 Prospect Ave. 02151
Coronal Fields and Lower Atmospheric Influences

Worcester Waskiewicz, David Edward 17 St. Mary's H.S. 23 Thayer Ave., Auburn
A Practical Key to the Genera of the Cactaceae 01501

MICHIGAN 2

Ann Arbor Galler, Bruce Irving 18 Pioneer H.S. 1056 Ferdon Rd. 48104
A New Iterative Method of Solution
Kuhn, Jeffrey Richard 16 Pioneer H.S. 2961 Dexter Rd. 48103
Microwave Representation of Optical Gyration
Chelsea Klemer, David Patrick 17 Chelsea H.S. 634 Flanders St. 48118
Data Storage and Retrieval Using a Holographic Memory

MINNESOTA 4

Brewster Wehler, Daniel 18 Brewster H.S. Rt. 1 56119
Osteological Variation of Adult *Merycoidodon Culbertsoni*
Skulls Using a New Measuring Technique
Richfield O'Dell, Bruce Harold 16 Richfield Sr. H.S. 6805 Russell Ave. South
Reaction Pathway for Pteridine Synthesis in *Drosophila melanogaster* 55423
Rochester Taswell, Carl 17 Mayo H.S. 422-7th Ave., S.W. 55901
Development of an Immunologic Assay System for the
Derivatives of Prothrombin
St. Paul Johnson, Craig Harold 17 Harding H.S. 1486 Fremont Ave. 55106
Efficiency of Low Air Speed Airfoil Designs Using the "Cusp"

MISSOURI 7

Canton Allan, Bradford Taylor 17 Canton H.S. 306 S. 5th St. 63435
Computer Analysis of the Effect of Wavelength and
Temperature on Silicon Solar Energy Cells
Chesterfield Brown, Robert William 17 Parkway Central Sr. H.S. Rt. 2, Box 376A,
Surfactants 63017
*Kessler, Amy E. 17 Parkway Central Sr. H.S. 14172 Forestvale Dr. 63017
Some Performance Characteristics of the
Wisconsin High Enthalpy Shock Tube
Nevada Farley, Stanton Kent 17 Nevada H.S. 920 W. Hunter 64772
Generalized Minkowskian Polytopes
Palmyra Sutton, James Leslie 17 Palmyra H.S. R.R. 3 63461
A Nondestructive Testing Technique Utilizing Ultrasonic Waves
St. Joseph *Radka, Margie Gail 17 Bishop LeBlond H.S. 3025 Locust 64501
Effectiveness of Suntan Preparations
St. Louis Shen, Anthony Shihin 18 Horton Watkins H.S. 9528 Laguna Dr. 63132
Effect of Charges and Types of Polyelectrolytes and Their
Synergistic Action on the Ability of Inhibiting
Crystallization of CaSO_4
University City Zimbalist, Michael Aaron 17 University City H.S. 8027 Cornell 63130
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