

GENERAL SCIENCE

# Science Fair Winners

National Science Fair-International awards were presented to student-scientists in fields including botany, physics, ecology, geophysics, physiology, mathematics and zoology.

## See Front Cover

► THE MOST PROMISING student-scientists of the year received top awards at the 16th National Science Fair-International, St. Louis, Mo., conducted by SCIENCE SERVICE.

The 418 finalists, representing 219 fairs and their teachers, were honored at an awards banquet.

The long-anticipated announcements of the winners were made for the various categories of competition. Awards were made in botany, chemistry and biochemistry, earth and space sciences, medicine and health, physics, mathematics and computers, and zoology.

First awards were presented to the thirteen students seen on this week's front cover. They are, from right to left:

Toshiko Fujitsu, 18, Seika Girls H.S., Kyoto City, Japan, for her project "Studies on Insect Galls in Structure and Formation";

Robert J. Sanders, 16, Lamesa H.S., Lamesa, Texas, for "Effect of High Frequency on Plant Functions";

Beverly A. Shoenberger, 17, Southwest H.S., Atlanta, Ga., for "An Analysis of the Rapid Growth of Kudzu";

Kennon R. Strauss, 18, C. E. Byrd H.S., Shreveport, La., for "Low Frequency Electron Paramagnetic Resonance Spectroscopy," also a finalist at the 14th NSF-I;

Carin C. Clamann, 16, Incarnate Word H.S., San Antonio, Texas, for "A Closed Ecological System," also a finalist at the 15th NSF-I;

Curtis Bryant, 15, LeMars Community H.S., LeMars, Iowa, for "Studying the Solar Atmosphere";

Letantia B. Jankowski, 17, Immaculate Conception H.S., Lodi, N.J., for "Chorio-allantoic Studies," also a finalist at the 15th NSF-I;

Frank B. Lutz, Jr., 17, Athens H.S., Athens, Ala., for "Determination of Susceptibility to a Transplanted Tumor";

David E. Lunsford, Jr., 17, Roosevelt Rural H.S., Lubbock, Texas, for "Scientific Applications for Egg Candling," also a finalist at the 15th NSF-I;

Randy B. Wright, 17, Highland H.S., Salt Lake City, Utah, for "Effect of Radiation on the Growth and Structure of Crystals, and X-Ray Diffractions";

John R. Gott III, 18, Mayme S. Waggener H.S., Louisville, Ky., for "Pseudopolyhedrons—A New Class of Geometric Figures," also a 15th NSF-I finalist and a Science Talent Search Winner;

Virginia L. Delaney, 17, Framingham South H.S., Framingham, Mass., for "Abnormal Pregnancies in the *Lebistes reticulatus*," also a 15th NSF-I finalist;

John M. Graham, Jr., 18, John Dickinson H.S., Wilmington, Del., for "Origin of Melanophores from the Neural Crest in the Chicken Embryo."

All of these winners will receive "Wish Awards" of \$100 of scientific equipment or books of their own choice.

## Second Award Winners

Second honors and \$75 Wish Awards went to: Carolina Mederos, 17, Bishop Moore H.S., Winter Park, Fla., "Inhibition of Tobacco Mosaic Virus by Modified Purine and Pyrimidine Analogues"; Gregory G. Marchand, 18, Longview Sr. H.S., Longview, Texas, "Algae, Man and the Future"; Ida Josephine Rheuark, 18, J.E.B. Stuart H.S., Falls Church, Va., "Developing Useful Products from Onion Skins"; Vernon M. Cottles, 17, St. Augustine H.S., New Orleans, La., "Properties of Gaseous Alkanes as Carrier Gases in Chromatography"; Joe G. Norman, Jr., 17, Terry Parker Sr. H.S., Jacksonville, Fla., "Monoketone Derivatives of Heteropoly Acids"; Priscilla Yuk Chi Chow, 18, Maryknoll H.S., Honolulu, Hawaii, "Analyzing Some Relationships in Prime Modular Arithmetic"; Robert I. Smith-Johannsen, 17, Queensbury H.S., Glens Falls, N.Y., "Atmospheric Precipitation"; Johnna Lou Russell, 16, Sandia H.S., Albuquerque, N. Mex., "DNA Isolation and Transformation in *Staphylococcus aureus*"; Felice R. Tillman, 17,

Metairie Park Country Day School, Metairie, La., "Asphyxia—A Major Factor in the Reanimation of Hypothermic Rats"; Kenneth W. Emert, 18, Robert E. Lee H.S., San Antonio, Texas, "Plant Extracts and Cancer: An Attempt to Isolate Growth Inhibiting Factors"; Frederick D. Hess, 19, Quincy H.S., Quincy, Wash., "Ultrasonic Cavitation of Bacteria"; Joel H. Breger, 17, Northwood H.S., Silver Spring, Md., "Design and Characteristics of a Miniature Supersonic Wind Tunnel"; Alan C. Huber, 17, Benjamin Bosse H. S., Evansville, Ind., "Spark Chamber With System for Photographic Recording of Cosmic Ray Tracks"; David R. Jefferson, 16, High Point H.S., Beltsville, Md., "Isosceles Trigonometry"; Kay E. Montgomery, 18, Clay H.S., South Bend, Ind., "Regeneration in Hydra"; and Morris Summers, 15, Terry Parker Sr. H.S., Jacksonville, Fla., "Polyphenol Oxidase System of a Decapod Crustacean."

## Winners of Third Awards

Third awards and \$50 Wishes went to: Martha Schulz, 16, Central H.S., Memphis, Tenn.; Charles W. Jernigan, 18, Leon H.S., Tallahassee, Fla.; Cheryl L. Leddy, 18, Central Catholic H.S., Reading, Pa.; Richard R. Jones, 17, Copper Basin H.S., Copperhill, Tenn.; David M. Schaffer, 17, Glynn Academy, Brunswick, Ga.; Ronnie Seagren, 17, Bradford Area H.S., Bradford, Pa.; Robert E. Rychly, 18, Rapid City H.S., Rapid City, S. Dak.; Ruth F. Conner, 18, Melbourne H.S., Melbourne, Fla.; Frederick R. Aronson, 19, Pascack Valley H.S., Hillsdale, N.J.; Arthur E. Frankel, 17, Stephen F. Austin H.S., Austin, Texas; Alan C. Hull, 18, Oneonta H.S., Oneonta, Ala.;

## Message From The President of the United States to The 16th National Science Fair-International

*"I am happy to send greetings on behalf of the nation to the young scientists of our high schools who have won acclaim at the 16th National Science Fair-International assembled in St. Louis. Of course, I am equally aware of the role of the dedicated teachers who have so effectively given these young people the opportunity and the stimulation to learn, and to the thousands of scientists who have led the way and provided inspiration.*

*"Our scientific youth has the opportunity and the responsibility ahead of it to help create a new kind of world—a world in which all people have the opportunity to fulfill their dreams for a better life. I wish you every success in building on these first important steps."*

LYNDON B. JOHNSON

William A. Voelkle, 18, Sam Houston Sr. H.S., Houston, Texas; Thomas J. Hysong, 16, Woodward School for Boys, Washington, D.C.; Elizabeth G. Smith, 17, Bledsoe County H.S., Pikeville, Tenn.; and Gary E. Hatch, 17, Provo H.S., Provo, Utah.

#### Fourth Awards

Fourth awards and \$25 Wishes were given to: Charles W. Allen, 18, Swoope, Va.; George S. Beal, 17, Burlington, Ontario, Canada; David A. Bellomy, 17, Barstow, Calif.; John W. Bengel, 16, Lovington, N. Mex.; Barbara A. Bennett, 18, Terre Haute, Ind.; Susan E. Benson, 17, Pawling, N.Y.; Jeff B. Bentley, 15, Temple, Texas; Linda S. Bertal, 18, Marion, Mich.; Veronica M. Bierbaum, 16, Allentown, Pa.; Ann Marie Bigelow, 17, Galion, Ohio; Sue Bohlin, 18, Iowa City, Iowa; James L. Bowen, 18, Orlando, Fla.; John J. Breaux, 18, Florissant, Mo.; Robert J. Brock, 18, Fort Worth, Texas; Terry L. Clark, 17, Bartlesville, Okla.; Idelle Clarke, 16, Albuquerque, N. Mex.; Yvonne Classen, 17, Wichita, Kans.; Susan E. Compton, 16, Middletown, N.J.; Howard Conn, 17, Newport News, Va.; Ann Cosgrove, 17, Norman, Okla.; Dennis T. Crowe, Jr., 18, Clintonville, Wis.; Lola Ann Dickson, 16, Hatch, N. Mex.; Francis O. Dudas, 15, Anaconda, Mont.; Noel Dunivant, Jr., 17, Whiteville, N.C.; Corinne S. Dulberg, 15, New Orleans, La.; Sandra Edfort, 17, Kingston, Pa.; Edward Emery, 16, New Albany, Ind.; Louis Fishman, 17, Wheaton, Md.; Alan E. Fortier, 16, Rockville, Conn.; Thomas B. Fowler, 18, Baltimore, Md.; George C. Fuller, 16, Knoxville, Tenn.; George Gasparian, 17, Cranston, R.I.; Arthur J. Gatz, Jr., 17, Augusta, Ga.; John F. Geweke, 16, Arlington, Va.; Larry E. Goad, 16, Louisville, Ky.; Harry R. Goldsmith, 18, Abilene, Texas; Melvin H. Goodwin III, 18, Phoenix, Ariz.; Bryan Grummon, 17, Glendive, Mont.; Alfred A. Hagedorn III, 16, Colorado Springs, Colo.; James D. Haug, 17, Seneca, Kans.; David F. Hayes, 16, Vernon, Conn.; Samuel W. Houston III, 17, Oklahoma City, Okla.; John F. Hutchinson, 18, Philadelphia, Pa.; Evelyn D. Jankowski, 15, Lodi, N.J.; James W. Jones, Jr., 17, Travelers Rest, S.C.; Nancy C. Jones, 17, Tallahassee, Fla.; Jay B. Jordan, 17, Roswell, N. Mex.; Doris L. Karon, 17, Fresno, Calif.; Edward G. Koski, 15, Westerville, Ohio; Gregory W. Kozlik, 16, Chicago, Ill.; Sharon S. Krag, 17, El Campo, Texas; Raymond C. Kurzweil, 17, Queens Village, N.Y.; Anthony J. Lee, Jr., Trenton, N.J.; John C. Lidington, 17, Red Hook, N.Y.; Dennis K. Marvel, 17, South Bend, Ind.; Patricia McBride, 17, Raymondville, Texas; Joan McMonagle, 17, New York, N.Y.; Cynthia B. Miller, 18, Indianapolis, Ind.; Eileen M. Moffitt, 15, Berkeley, Calif.; Virginia M. Morris, 16, Richland, Wash.; James L. Moulton, 17, Las Vegas, Nevada; Alice L. Muncaster, 15, Ashland, Ky.; Richard E. Osgood, Jr., 17, Edmonds, Wash.; Harry K. Parks, Jr., 17, Gary, W.Va.; Jim L. Pickren, 16, Lewisville, Ark.; Robert E. Pitt, 17, South San Francisco, Calif.; Ronald J. Polinsky, 16, Reading, Pa.; Alice S. R. Reichardt, 17, Hammond, Ind.; Bobby Rhoades, 17, Mesquite, Texas; Wil-

liam Rivera, 17, Mayaguez, Puerto Rico; Glenn Roberts, 18, Kalispell, Mont.; John F. Rollins, 17, Lawton, Okla.; Frank R. Rudy, 16, Harrisburg, Pa.; Elizabeth S. Saarni, 17, San Diego, Calif.; John S. Sabol, Jr., 18, Lafayette, Ind.; Michael P. Schafer, 18, Lafayette, Ind.; Stephen P. Sherman, 15, Oak Park, Mich.; Thomas W. Sills, 17, Hartford City, Ind.; Joe W. Snavelly, 18, Pine Bluff, Ark.; Robert Stephens, 18, Brookfield, Wis.; Inza E. Taylor, 17, Columbia, S.C.; Michael J. Telechak, 17, Tamaqua, Pa.; Herbert A. Terry, 16, San Diego, Calif.; Sharyn J. Turner, 18, Grand Rapids, Mich.; James Christopher Underwood, 16, Miami, Okla.; Linda Van Roekel, 16, Hawarden, Iowa; Donald W. Varner, 17, Spartanburg, S.C.; Dale E. Walker II, 17, Shawnee Mission, Kans.; Dale J. Walther, 16, Anchorage, Alaska; Leslie E. Webb III, 18, Falfurrias, Texas; Mary E. Wilson, 15, Jersey City, N.J.; Bruce M. Winchell, 18, Elyria, Ohio; Gene H. Young, 18, St. Albans, W.Va.; and Kathlene A. Zimmerman, 15, Mount Joy, Pa.

Norman R. D. Jones, chairman, and William C. Krueger, assistant chairman of the local committee were given citations in recognition of their organization of the fair at St. Louis and the St. Louis Post Dispatch was thanked for its sponsorship. Mr. Jones, a teacher retired after many years of service, has headed the regional St. Louis Fair since its inception. He also headed the Second National Science Fair held in 1951 in St. Louis.

• Science News Letter, 87:323 May 22, 1965

#### GENERAL SCIENCE

### International Science Fair New Name Adopted

► THE NAME "International Science Fair" has been adopted to replace "National Science Fair-International." The Advisory Council, consisting of 21 fair directors meeting at St. Louis, recommended that this annual world event under the direction of SCIENCE SERVICE be called International Science Fair from now on.

This is a result of the world interest in science fairs and science youth activities and the continued growth of science fairs, both nationally and internationally.

• Science News Letter, 87:324 May 22, 1965

#### GENERAL SCIENCE

### Sites of International Science Fair Announced

► WASHINGTON, D.C., will be the host city of the International Science Fair, May 1970. Kansas City will be the site of the Fair in 1971, and New Orleans in 1972. Invitations from the three cities were offered and recommended at a meeting of the Science Fair Council in St. Louis.

The annual event is conducted by SCIENCE SERVICE with a different city as cooperative host each year. Preparations are well underway for the 17th ISF in Dallas, Texas, in 1966.

San Francisco will be the site of the Fair in 1967 and Detroit in 1968. The 1969 Fair will be in Forth Worth, Texas.

• Science News Letter, 87:324 May 22, 1965

## Questions

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What eclipse in June will be visible in North America? p. 330.

**GENERAL SCIENCE**—What is "Operation Cherry Blossom"? p. 327.

**INVENTION**—What new invention will keep astronauts in space from floating out of bed? p. 335.

**MEDICINE**—Which adenoviruses are responsible for respiratory diseases in children? p. 331.

**NATURE NOTE**—How are aphids used by ants? p. 335.

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