

## Top high school scientists selected

Science Service this week announced winners of the 35th annual Science Talent Search, in which high school students conduct independent research to compete for scholarships. The winners—11 girls and 29 boys—will take displays of their research projects to Washington March 11-15 for final judging for \$67,500 in scholarships, provided by the Westinghouse Educational Foundation.

The 40 winners come from 32 high schools in 17 states. They were selected from 1,013 qualified entrants. Most are near the top of their classes academically, but the main purpose of the contest is to search out students who demonstrate the greatest potential for independent work, rather than just trying to make good grades.

The increasing sophistication of the students' projects is particularly evident this year, with many subjects selected from the frontiers of current research, including number theory, genetic manipulation and corrosion of metals. A California student studied biological rhythms of plants, one from Indiana used microsurgery to develop hybrid cells through nuclear transplantation (he built the necessary apparatus himself), and a Virginia girl is bringing to Washington results of an experiment on plant "emotions" that have already been reported in *HARPER'S* magazine and *CHEMISTRY*. (Her findings tend to negate belief in a "secret life" for plants.)

Increasing social consciousness is also evident in the selection of some of the research topics. A Trenton, N.J., boy developed a stroll-aid for blind people, using sensors mounted on a small, four-wheeled device designed to be pushed. A student from Cold Spring Harbor, N.Y., programmed a computer to "speak" when buttons are pressed to create the appropriate sounds. He hopes his invention can be used to help mute persons. Several students selected environment-related topics, including biological sewage treatment with aquaculture, the effect of sediments on various species of crabs, and elimination of the need for chemical weed killers by using plants that produce toxic root secretions.

Some students used advanced technology made available to them by cooperating institutions. A Maryland girl used a telescope at the Goddard Space Flight Center to photograph a dark cloud in the galaxy—devising her own method for counting stars. Another young astronomer used color filter photography to determine characteristics of open clusters. A Kentucky boy built a new kind of "light pen" for communicating with a computer without wasting as much processing time as other methods. And a Maryland student has designed a device he hopes will make white-light holograms possible.

This year's 40 winners:

CALIFORNIA: *James E. Black*, Mission San Jose H.S., Fremont; *Ronald D. Vale*, Hollywood H.S., Los Angeles; *Rebecca A. Kurth*, Venice H.S., Los Angeles.

FLORIDA: *Peter H. Schmitt*, Archbishop Curley H.S., Miami.

ILLINOIS: *Randall H. Victora*, Irving Crown H.S., Carpentersville; *Daniel T. Suzuki*, Evanston Twp. H.S., Evanston; *David H. Janda*, Lyons Twp. H.S., LaGrange.

INDIANA: *Stephen J. Budak*, Marquette H.S., Michigan City.

KENTUCKY: *Mark E. Bailey*, Lloyd Memorial H.S., Erlanger.

MARYLAND: *Mark A. Gubrud*, Wilde Lake H.S., Columbia; *Diane H. Wooden*, T.S. Wootton H.S., Rockville.

MASSACHUSETTS: *David J. Boothby*, Acton-Boxborough Reg. H.S., Acton; *Edward S. Phinney III*, Amherst Reg. H.S., Amherst.

MICHIGAN: *David S. Anderson*, Community H.S., Ann Arbor.

NEW JERSEY: *Susan Ruyle*, Scotch Plains-Fanwood H.S., Scotch Plains; *Joel Fajans*, Teaneck H.S., Teaneck; *Randall M. Mier*, Steinert H.S., Trenton.

NEW MEXICO: *Roberta A. Gottlieb*, Grants H.S., Grants.

NEW YORK: *Lawrence M. Ausubel*, *Michael A. Berger* and *Sheri L. Frumer*, Benjamin N. Cardozo H.S., Bayside; *Michael D. Kanfer*, South Shore H.S., Brooklyn; *Craig C. Hansen*, Cold Spring Harbor H.S., Cold Spring Harbor; *William A.*

*Schwartz*, Massapequa H.S., Massapequa; *William J. Apfeldorf*, *Jeffrey C. Augen*, *Alice Chow*, *Scott T. Cohen*, *Chuan-Luan Song* and *George D. Yancopoulos*, Bronx H.S. of Science, New York; *Denise A.M. Taylor*, Stuyvesant H.S., New York.

OHIO: *Robert J. Partyka*, Upper Arlington H.S., Columbus; *Julia L. Belli*, Huron H.S., Huron; *James J. Murtagh Jr.*, St. Francis de Sales H.S., Toledo.

OKLAHOMA: *Diane R. Kramer*, McAlester H.S., McAlester.

PENNSYLVANIA: *Michael A. Sulzinski*, Bishop Hoban H.S., Wilkes-Barre.

TENNESSEE: *William C. Snyder*, Christian Brothers H.S., Memphis.

VIRGINIA: *David T. Leighton Jr.* and *Ursula E. Schwebs*, Washington-Lee H.S., Arlington.

WEST VIRGINIA: *Natalie K. Wargo*, Morgantown H.S., Morgantown.

The Science Talent Search has produced its second Nobel laureate, Ben Mottelson who shared the 1975 Nobel Prize in physics (SN: 10/25/75, p. 261). Mottelson was one of the STS winners in 1944, in recognition of his work in making his own telescope. Actually, he had to start over when a "strained surface" developed in one lens. The 17-year-old boy dutifully reported that "the book I was using offered the unpleasant suggestion that the best thing to do would be to hurl the lens against the nearest fire hydrant." He later used the same persistence to develop a model of the atomic nucleus from a confusing array of experimental evidence. □

## Science on TV: The second season



*The Scott expedition ended in disaster. A close look by NOVA at more successful researchers in Antarctica is upcoming.*

The Bettmann Archives

The bombs and busts of the commercial television season are being weeded out, but NOVA, the Public Broadcasting System's highly successful weekly science series, moves ahead with a second season of eight more shows that promise to be both informative and entertaining. The series, produced for PBS by WGBH in Boston, is seen in most cities on Sundays at 8 p.m. (Check local listings for exact time and day.) The upcoming shows are:

- Feb. 15—"Ninety Degrees Below" examines the research being done in Antarctica by teams of scientists from around the world.
- Feb. 22—"The Race for the Double Helix" reunites James Watson and Francis Crick for a look at the story behind their race to discover the structure of DNA. Isaac Asimov narrates.
- Feb. 29—"Why Do Birds Sing?" explores the mechanisms of bird song,

how it is learned and how it is used.

- Mar. 7—"The Renewable Tree" examines the controversy between timber companies and environmentalists over the practice of clearcutting.
- Mar. 14—"The Williamsburg File" offers an historically accurate look at what is known of the life and times of the founders of this country.
- Mar. 21—"The Overworked Miracle" discusses the undoubted medical value of antibiotics, but cautions that these drugs are losing ground to a bacterial counterattack called resistance.
- Mar. 28—"What Time is Your Body?" examines the growing body of information on human biological clocks.
- April 4—"The Women Rebel" is the story of Margaret Sanger, the woman who helped open the eyes of the male-dominated medical profession to women's problems. □