

GENERAL SCIENCE

Top Young U.S. Scientists Chosen

The winners of the 19th Annual Science Talent Search scholarships come from all kinds of environments, farms, towns and cities. Meet our winning scientists.

See Front Cover

THE NATION'S top young scientist of the year is Jerome G. Spitzner, 17, of St. James, Minn., seen on the cover of this week's SCIENCE NEWS LETTER. The husky young farm-boy physicist used unusual odds and ends to build an ion accelerator at a cost of less than \$35.

He won the top \$7,500 Westinghouse scholarship of the 19th annual national Science Talent Search conducted by Science Service, a contest which started with almost 4,500 completed entries.

Four other scholarships were awarded (March 7) after five days of judging in Washington:

\$6,000 to Melvin Hochster, 16, of Brooklyn, N.Y., a mathematician ever since his sister gave him her old math books when he was nine years old.

\$5,000 to Frank A. Podosek of Ludlow, Mass., 18-year-old research scientist who has developed apparatus to measure the rate of expansion of heated liquids.

\$4,000 to Charles H. Bennett of Croton-on-Hudson, N.Y., 16-year-old biochemist, who has done a study on the respiration of freshwater snails.

\$3,000 to a sparkingly feminine petite chemist, Betty Lou Snarr, 17, Oklahoma City, Okla., who has worked out a relatively simple plan to determine the molecular structure of complex sugars.

Ion Accelerator

The ion accelerator that was part of Jerry Spitzner's winning entry in the Search was built in his laboratory, an old chicken house of his father's farm. It is a scale model of his design for a machine that someday might harness atomic power. This one is put together with such items as a float from a pig-waterer, a silver-painted Christmas tree ball, parts of old television sets, and equipment supplied by St. James High School, where he is a senior, a nearby college and a local radio shop. Blessed with what his teacher describes as an endearing sort of "humble-confidence," Jerry is hailed for his scholastic, scientific, and wrestling squad prowess. He has been offered several athletic scholarships because of his record in sports. His plans for his professional future are built around a desire to open up new opportunities and relieve world tensions through providing cheap and abundant fusion power for space travel and private and industrial use.

Melvin Hochster, senior at New York's Stuyvesant High School, was absorbing college algebra and calculus texts while he was still in junior high school and now does original work in number theory as a hobby.

The research paper that he submitted as part of his entry in the Search described his investigation of diagonal sums in a right Pascal's triangle which yields sets of numbers with interesting properties when read from various angles. Because discovering and proving unobvious but simple ideas particularly delights Melvin, he looks forward to a lifetime of research in mathematics.

Tall, blond Frank A. Podosek, senior at Technical High School in Springfield, Mass., enjoys testing new and sometimes unconventional ways of solving scientific problems and finds science "not work, but recreation." The problem he reported to the Science Talent Search concerned the measurement of the coefficient, or rate, of thermal expansion of various liquids and many of their solutions. His objective was the discovery and analysis of relationships between the coefficients for particular liquids and those of their solutions. Since Frank's interests range over such fields as chemistry, nuclear and atomic physics, electronics and missiles, he believes his professional future will be eminently satisfying if he can carry on original research in any or all of these disciplines.

The musician parents of Charles H. Bennett, senior at Croton-Harmon High School, Croton-on-Hudson, N.Y., have provided a background of warm encouragement of his interest and ability in science. Impressed by the enthusiasm and character of the working scientists he knows, this 16-year-old high school senior is looking forward to a "very good life" as a biochemist. Charles' project paper reports his research on the respiration of freshwater snails. Using six aquatic snails in containers of pond water which he heated in his mother's kitchen oven, he determined the approximate rate of dissolved oxygen consumption and the relationship between the concentration of dissolved oxygen and the rate of consumption. Charles hopes to expand his study to include the rate of respiration of other animals such as sponges and goldfish.

Girl Chemist Wins

The field of physical chemistry will be brightened a few years hence by the addition to its ranks of pretty, five-foot-two Betty Lou Snarr of Classen High School, Oklahoma City. Betty has designed a simplified technique for finding the molecular structure of polysaccharides, a method she now wants to test and improve for use with dextran and to solve the structures of lesser known polysaccharides. This diminutive "lady-in-a-lab-coat" is equally at home in a bouffant dance formal and corsage,

enjoys golf, oil painting, sketching, piano, chess, stamp collecting and microbiology, and expects to get her general class amateur radio license next summer.

John M. J. Madey, 17, of A. L. Johnson Regional High School, Clark, N.J., was named as alternate to the \$3,000 scholarship.

Eight girls and 27 boys received Westinghouse Science Awards of \$250 each in recognition of their outstanding promise as creative scientists of the future.

Science News Letter, March 19, 1960

OPTICS

Tiny Tube Will Do Work Equal to Big Telescope

A PINT-SIZED electronic tube has been developed by Westinghouse Electric Corporation that may make big telescopes out of little ones, enabling astronomers to get pictures of the heavens never before obtainable.

Called an Astracon, the light-amplifying tube is said to be so sensitive that it makes visible to the eye every individual elementary particle of light that triggers its ultra-sensitive input. It can increase the effective size, or light-gathering ability, of even the largest telescopes many times over.

The tube, which is also expected to find application in other fields of research such as nuclear physics, was described in Washington, D. C., to 40 teen-age winners of the 19th annual Science Talent Search, administered by Science Service, by Dr. J. W. Colman of the Westinghouse research laboratories, Pittsburgh, Pa.

Science News Letter, March 19, 1960

SCIENCE TALENT WEEK—Top winners with their projects in the Science Talent Search and activities during STS week. Top, left, is Melvin Hochster. Below him is Frank A. Podosek, and to the right the group of 40 winners of the Science Talent Search.

Center, left, is Charles H. Bennett. To the right Betty Lou Snarr is seen. Far center right, Irving Spitzberg presents Dr. Watson Davis of Science Service and Dr. Howard S. Kaltenborn of Westinghouse with a cup of appreciation from the 40.

Bottom, left, a group in the Smithsonian Hall of Minerals. From left to right are—Arthur Taylor Winfree; John Wesley Shaner; Paul E. Desautels, a curator; and Dr. Leonard Carmichael, president of Science Service and secretary of the Smithsonian Institution. At bottom right, John M. J. Madey.