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Top 10 winners in top science contest

It's the other March Madness: the week-long judging of the annual Westinghouse Science Talent Search, the Super Bowl of high school science competitions. So it was only fitting when the smart and smartly dressed students huddled in embrace—or butted chests—after the winners were announced at the National Academy of Sciences in Washington, D.C., this week.


Mark Portland/Westinghouse

Top three winners (from left): Adam Ezra Cohen, Carrie Shilyansky, and Nicholas Karl Eriksson.

The first-place winner shot his arms up in triumph and hugged the nearest judge. Adam Ezra Cohen, 17, of Hunter College H.S. in New York, received a $40,000 scholarship for developing a new method of photolithography, the means by which information-packed patterns are electrochemically etched onto microchips.

His high technology was homegrown. Working in his bedroom, the prospective physicist started experimenting on his mother's gold jewelry with parts from a $1.49 speaker. He used Legos to build the housing for his "electrochemical paintbrush," a modified scanning tunneling microscope.

In contrast, second-place winner Carrie Shilyansky, 15, of San Marino (Calif.) H.S., worked in a university laboratory on her neurobiology project. She received a $30,000 scholarship for her study of a neuronal pathway controlling habituation, a simple form of learning, in the sea hare *Aplysia.*

Third-place winner Nicholas Karl Eriksson, 18, of Sentinel H.S. in Missoula, Mont., used algebra and number theory to explore the partition function, which counts the ways a whole number can be split into other integers. He received a $20,000 scholarship.

Davesh Maulik, 17, of Roslyn (N.Y.) H.S., also wrote a mathematics paper. His delved into symmetries of polynomial equations and took fourth place. Maulik received a $15,000 award, as did Emily Beth Levy, 17, of North Miami Beach (Fla.) Senior H.S., and Dev Edward Kumar, 17, of the Texas Academy of Math & Science in Denton. For her fifth-place project, Levy devised a method to improve reading comprehension in dyslexic children. In sixth place, Kumar invented an electronic monitor to measure the power efficiency of pagers and similar devices.

Ann Clair Seiferle-Valencia, 17, of Farmington (N.M.) H.S. and Dylan Micah Schwindt, 18, of Montezuma-Cortez H.S. in Cortez, Colo., took inspiration from their artifact-rich surroundings. Seiferle-Valencia reconstructed population trends of the Chacoan Anasazi. Schwindt analyzed trace elements in trees for a study of 13th-century Pueblo construction. They earned seventh and eighth places, respectively, and $10,000 awards.

Also winning $10,000 were Rose J. Payyapilli, 18, of Midwood H.S. at Brooklyn College in Brooklyn, N.Y., and Whitney Paige Bowe, 18, of Lawrence H.S. in Cedarhurst, N.Y. Payyapilli reached ninth place by identifying a factor affecting blood platelet aggregation. Bowe took tenth place with a study using jellyfish and algae to examine how symbiosis can be established.

The remaining 30 finalists of the original 1,652 entrants (SN: 2/1/97, p. 69) received $1,000 each and this reminder from Princeton University astrophysicist J. Richard Gott, head of the judges' panel: Only one of the competition's five Nobel laureates also ranked in the top 10. "Not winning one of the top scholarships increases your chances of winning a Nobel," he quipped.

"To be in it is to win it," commented finalist Long Cai, 16, of Ward Melville H.S. in Setauket, N.Y.

Many of the student projects will be turned into patent applications or publications. An article by Erikkson on the partition function has been accepted by the INTERNATIONAL JOURNAL OF MATHEMATICS AND MATHEMATICAL SCIENCES. Cohen, whom the students chose as their spokesperson before the awards ceremony, says his technique has already generated commercial interest.

The competition, now in its 56th year, is administered by Science Service, which publishes SCIENCE NEWS.

— C. Mlot