

## *Intel Science Talent Search Awards Scholarships Totaling \$530,000*

### **\$100,000 Top Scholarship Awarded to 17-Year-Old Female from Connecticut**

WASHINGTON, March 12, 2001 - Intel Corporation and Science Service tonight awarded the top 10 college scholarship awards for the Intel Science Talent Search (Intel STS) at a black-tie banquet in Washington, D.C. Mariangela Lisanti of Westport, Conn., a student at Staples High School, won the \$100,000 first place college scholarship for her physics project.

The Intel STS is America's oldest and most prestigious pre-college science competition. The STS, often considered the "junior Nobel Prize," celebrated its 60<sup>th</sup> anniversary this year.

Mariangela, who entered a physics project titled "Conductance Quantization in Gold Nanocontacts" is the third young woman in a row to win the top prize. Lisanti's research, conducted at Yale University, focused on the use of single atoms or molecules to fabricate electronic devices. To better understand electron transport in tiny nanostructures, Lisanti developed a new measurement apparatus that enables data acquisition at an unprecedented rate and is applicable to a wide range of studies.

First in her class of 264 students, Lisanti is the captain of the math team, founder and captain of the school's engineering team, and concertmaster of the chamber and symphonic orchestras. Fluent in both Italian and Spanish, she has received numerous awards in language, as well as science competitions, and has been named a Governor's Scholar, the highest academic distinction in Connecticut.

Nathaniel Jay Craig, 18, of Sacramento, Calif., a student at Mira Loma High School, was awarded the second place \$75,000 scholarship for his physics project titled "On the Thermodynamics of Supercooled Glass-Forming Polymeric Liquids." Craig resolved a long-standing weakness in the classical model for supercooled liquids by deriving an expression for the fragility index, which is a dynamic property, in terms of entropy and heat capacity, which are equilibrium properties. In addition to receiving a second degree black belt in karate, Craig earned a perfect SAT score, won a varsity letter in cross country, and is the captain of the school's Science Bowl team.

Gabriel Drew Carroll, 18, of Oakland, Calif., a student at Oakland Technical High School, won the third place \$50,000 scholarship for his mathematics project titled "Homology of Narrow Partially Ordered Sets (Posets)." In a partial order, some elements are larger than others, but two elements need not be compatible. Carroll studied partial orders by investigating the shape of a related geometric space. Carroll is first in his class of 283 students and is president of the math club. He earned a perfect

score on his SATs and has won numerous math awards including a gold medal in 1998 and a silver medal in 1999 at the International Mathematical Olympiad.

"We applaud these young scientists -- our country's future leaders, thinkers and innovators," said [Dr. Craig R. Barrett](#), Intel's president and chief executive officer. "Their grounding in science and math is crucial to making sense of today's technological world, and making the best decisions for tomorrow.

"The Intel Science Talent Search is an ideal way for us to acknowledge students who achieve academic excellence, teachers and schools that go the extra mile to excite and motivate their students, and parents who stay involved in their children's education."

Completing the list of the top 10 winners (digital photos available via Associated Press):

- Fourth Place: a \$25,000 scholarship was awarded to Alan Mark Dunn, 17, of Potomac, Md., a student at Montgomery Blair High School, for his computer science project titled "Optimization of Advanced Encryption Standard Candidate Algorithms for the Macintosh G4." Dunn is a co-author of a paper for the 15th European Meeting on Cybernetics and Systems Research. Dunn is also an activist in a grassroots superhighway campaign; and he believes that "as a scientist, one has a civic duty to be involved in the public decision-making process."
- Fifth Place: a \$25,000 scholarship was awarded to Michael Theprathan Hasper, 18, of Tallahassee, Fla., a student at Maclay School, for his physics project titled "Violin Bridge: Will the Stradivarius Legend Continue?" For his project, Hasper, who has played the violin since age 6, tested the properties of 11 bridges that he made of wood, metal or other materials. He concluded that no single bridge created the best sound for each of the four violin strings. Michael has won numerous math, music, sailing and science competitions, including a Grand Award and First Place Physics award at the Intel International Science and Engineering Fair (Intel ISEF).
- Sixth Place: a \$25,000 scholarship was awarded to Vinod Easwaran Nambudiri, 17, of Rye Brook, N.Y., a student at Blind Brook High School, for his behavioral and social science project titled "Alteration of Sleep and Daytime Cognitive Performance in Adolescents as a Result of Nocturnal Extraocular Light Exposure." Nambudiri exposed light to the backs of the knees of 10 teenagers as they slept using a "light pad," which resembles a small heating pad. After exposure, he measured the teens' test-taking ability and sleepiness and concluded that the effect was decreased slow-wave sleep and increased speed on several standard cognitive tasks. Nambudiri is the editor of his school newspaper, captain of the math team, and president of both the student senate and the Model UN.
- Seventh Place: a \$20,000 scholarship was awarded to Johanna Beth Waldman, 17, of Roslyn, N.Y., a student at Roslyn High School, for her behavioral and social science project titled "Cheating To Make the Grade: An Analysis of Factors Affecting Academic Dishonesty." Waldman distributed questionnaires to 224

students -- ages 15-17 -- at a privately run summer program and reported that while half of her subjects expressed disapproval of cheating, more than 90 percent admitted to practicing some cheating behaviors. First in a class of 212, Waldman is president of her high school's model congress, won the Wellesley Book Award, and qualified for New York state championship tournaments in forensics.

- Eighth Place: a \$20,000 scholarship was awarded to Hans Christiansen Lee, 18, of Carmel, Calif., a student at York School, for his engineering project titled "Active Spin Control: Next Step after Anti-Lock Brakes." Lee designed, built and tested a differential torque control system (DTCS) to improve a car's handling when traction is poor or during radical steering maneuvers. His test vehicle skidded 45 percent less when using when using DTCS. Lee is the founder of an engineering consulting company. Additionally, he is captain of his school's hockey team, plays first trumpet in the orchestra, and has won several Intel ISEF awards.
- Ninth Place: a \$20,000 scholarship, was awarded to Robert Adam Horch, 18, of Weatherford, Texas, a student at Texas Academy of Mathematics and Science, for his chemistry project titled "Nano-Strength: Establishing Polymerized Montmorillonite Nanocomposites Within Electrodeposited Metallic Thin Films." Horch designed and constructed a new type of electrochemical cell to synthesize polymerized nanocomposites - precisely oriented arrays of molecules. He believes that his new material is 20 percent stronger and lighter than stainless steel. Horch volunteers at the Fort Worth Zoo and he is the founder and president of the robotics club at his school. Horch has received numerous awards for volunteerism, band and math.
- Tenth Place: a \$20,000 scholarship was awarded to David Nejad Khalil, 18, of Great Neck, N.Y., a student at Great Neck North High School, for his medicine and health project titled "Identification of the Multiple Human Brain Areas Associated with the Two Perceptions of Ambiguous Figures Using Functional Magnetic Resonance Imaging (fMRI)." Khalil found evidence of cortical mapping with some areas associated with these perspectives. Khalil heads the debate and forensics team, the Hebrew Culture Club and the computer club. In his spare time, he is a computer consultant.

The remaining 30 finalists each receive a \$5,000 scholarship. In addition to the scholarship, each finalist receives a mobile computer with an 850 MHz Intel® Pentium® III processor.

"The Intel Science Talent Search is about rewarding and recognizing excellence," said Dr. Dudley Herschbach, chairman of the board of Science Service and a Nobel Laureate in chemistry. "The 40 young scientists we honor today represent our hope for the future of science and technology in this new century."

The research projects cover all disciplines of science, including chemistry, physics, mathematics, engineering, social science and biology. Intel STS entries were reviewed and judged by top scientists from a variety of disciplines. Dr. Andrew Yeager, professor

of medicine and pediatrics and director of Stem Cell Transplantation at the University of Pittsburgh Medical Center oversaw the judging process.

"Choosing the top ten winners from these 40 outstanding young men and women is always a challenging task for our Intel STS judging committee," said Yeager. "We try to identify those students with exceptional promise for future leadership, creativity and substantial accomplishments in science and technology. To that goal, the judges spend many hours in constructive discussion of the merits of each STS winner before they select the top 10."

### **Background**

Since 1942, the STS has recognized 2,400 finalists with more than \$5 million in scholarships. The program provides an incentive and arena for U.S. high school seniors to complete an original research project and have it recognized by a national jury of highly regarded professional scientists. The projects are the result of inquiry-based learning methods, which enable students to nurture critical reasoning skills and experience science through the use of the scientific method.

Participation in the STS has often served as a precursor to impressive accomplishments in science. Statistics show that 95 percent of former STS winners have pursued a branch of science as their major field of study. More than 70 percent have gone on to earn Ph.D.s or M.D.s. More than 100 winners of the world's most coveted science and math honors are alumni of the STS, including three National Medal of Science winners, 10 MacArthur Foundation Fellows, two Fields Medallists and five Nobel Laureates.

Science Service, a nonprofit organization whose mission is to advance the understanding and appreciation of science through publications and educational programs, has administered the program since its inception. For more information on Science Service or the Intel STS, visit [www.sciserv.org](http://www.sciserv.org).

Intel's sponsorship of the Science Talent Search is part of the Intel Innovation in Education initiative to prepare today's teachers and students for tomorrow's demands. Intel develops and supports education programs that help meet the needs of students and communities worldwide through improving science, math, engineering and technology education; improving education through the effective use of technology in classrooms; and broadening access to technology and technical careers.

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