

Intel Science Talent Search \$100,000 Scholarship Awarded To A 17-Year-Old Female High School Senior From New York

"Junior Nobel Prize" Runners-up from Montana, Iowa, Pennsylvania, Kentucky, New York and California

WASHINGTON, March 13, 2000 -- Intel Corporation and Science Service tonight awarded the \$100,000 first-place college scholarship for the Intel Science Talent Search (Intel STS) to Viviana Risca, a 17-year-old high school senior at Paul D. Schreiber Senior High School in Port Washington, N.Y. The Intel STS is America's oldest, and most prestigious, pre-college science scholarship competition, often considered the "Junior Nobel Prize." This year, Intel has increased award scholarships and equipment from \$330,000 to \$1.25 million.

Viviana, who entered a computer science project in molecular computing titled "DNA-based Steganography," is the third youngest woman in the last seven years to win the top prize. Viviana studied steganography, a data encryption technique that embeds secret messages within large amounts of seemingly innocent information. She encrypted the message, "JUNE6_INVASION: NORMANDY," inserted it in the gene sequence of a DNA-strand, and flanked it by two secret "primer" DNA sequences. Then she combined the molecule with many other similar molecules. The hidden message could be retrieved only by someone knowing the two secret primer sequences - the keys to the code. Because the pair of primers provides a trillion trillion options, she concludes that the code is essentially unbreakable. First in her class, Viviana is managing editor of the school's literary magazine, and has won numerous science and writing awards. A native of Romania and a published poet, she enjoys computer programming, painting and badminton, and hopes to attend the Massachusetts Institute of Technology.

Jayce Getz, 18, a senior at Big Sky High School in Missoula, MT, was awarded the second place \$75,000 scholarship for his mathematics project titled, "Extension of a Theorem of Kiming and Olsson for the Partition Function." He shows divisibility properties of the number of ways that a positive integer can be written as a sum. This extends the 1919 work of the famous Indian mathematician, Ramanujan. Jayce is an Eagle Scout and president of the Key Club. His hobbies include performing and composing for piano, writing, snow and water skiing, as well as wind surfing. He plans to study both mathematics and physics.

Feng Zhang, 18, a senior at Theodore Roosevelt High School in Des Moines, IA, was awarded the third place \$50,000 scholarship for his biochemistry project in molecular

virology titled, "Genetic Functional Analysis of the Moloney Murine Leukemia Virus GAG Gene Reveals an Inhibitory Element that can be Masked to Control Retroviral Assembly." In his two-year study, Feng investigated whether parts of the structural protein GAG could become useful targets for therapy of viral infections like HIV/AIDS by disrupting the assembly of infectious viruses. He hopes his work will "provide a small piece to a larger puzzle of conquering the HIV disease." Feng is an Eagle Scout, a political campaign volunteer and the recipient of numerous awards including the Intel Young Scientist Scholarship at the 1999 Intel International Science and Engineering Fair. He hopes to attend Harvard.

"We applaud these young scientists -- our country's future leaders, thinkers and innovators. Their grounding in science and math is crucial to making sense of today's technological world, and making the best decisions for tomorrow," said Dr. Craig R. Barrett, Intel's president and chief executive officer. "The Intel Science Talent Search is an ideal way for us to recognize and reward student excellence in science, as well as teachers and schools, that go the extra mile to excite and involve their students; and to encourage parents to stay involved in their children's education."

Completing the list of the top ten winners (digital photos available via NewsCom bulletin board system (BBS), www.newscom.com and AP Photo Network):

- Fourth Place, a \$25,000 scholarship goes to Alexander 'Sasha' Schwartz, 17, of Radnor High School in Radnor, PA, for his mathematics project, "On Coset Partitions of Abelian Groups." Sasha worked on abstract algebra, determining when a finite Abelian group can be partitioned into cosets of distinct subgroups. He is active in the juggling, math and engineering clubs, and has earned top honors in national and international mathematics and chemistry contests. Sasha plans to major in math and physics at Harvard.
- Fifth Place, a \$25,000 scholarship, goes to Eugene Simuni, 18, a senior at Midwood High School at Brooklyn College, in Brooklyn, NY. Eugene submitted a biochemistry project, "The Role of Interdomain Interactions in the Activation Mechanism of the G Proteins," where he explored protein transmission of visual signals to the brain. He is a member of his school's award-winning debate team and organized its math team. Eugene was born in Russia, immigrating to the U.S. with his family just two years ago. He hopes to attend Harvard. Eugene was chosen by his fellow finalists to receive the Glenn T. Seaborg Award for his commitment to scientific cooperation and communication. Nobel Laureate Glenn Seaborg was a judge of this competition for four decades.
- Sixth Place, a \$25,000 scholarship, goes to Matthew Reece, 18, a senior at duPont Manual Magnet High School in Louisville, KY. He submitted a mathematics project titled, "Proposal of a New Multiscale Wavelet Method for Faster Solution of Fluid Dynamics Problems," which provides an adaptive and possibly faster way of simulating fluid flow. Fluid flow is difficult to compute, and important in many areas, such as airplane design and weather forecasting. Matthew earned perfect SAT scores, plays the violin and enjoys hiking. He hopes to attend the University of Chicago.

- Seventh Place, a \$20,000 scholarship, goes to Kerry Ann Geiler, a 17-year-old student at Massapequa High School in Massapequa, NY. Kerry presented a behavioral and social sciences project entitled, "The Ants Go Marching Two by Two: A Multivariate Analysis of the Physical and Chemical Communication of Formicidae Species." Kerry's study gives new insights into how ants communicate, and provides a building block for further inquiries into the communications among the world's insects. Kerry holds a black belt in karate, plays the saxophone, and is a drum major. She hopes to attend Cornell, and pursue a research career in bioscience.
- Eighth Place, a \$20,000 scholarship, is awarded to Elizabeth Williams, 17, a senior at Palos Verdes Peninsula High School, Rolling Hills Estates, CA. Elizabeth submitted a behavioral and social sciences project entitled, "Visual Search: A Novel Psychophysics for Pre-Attentive Vision." Her project looks at ways the brain perceives combinations of light and shape called "simultaneous contrast," a classic effect studied by perceptual psychologists. First in her class and with perfect SAT scores, Elizabeth plays the violin and plans to attend Harvard.
- Ninth Place, a \$20,000 scholarship, goes to Zachary Cohn, 17, a senior at Half Hollow Hills High School East, in Dix Hills, NY. He entered a mathematics project entitled, "Reciprocity Laws Establishing the Quadratic Character of Remainder Classes over Polynomials with Coefficients in a Prime Dimensional Field," which brings a new perspective to the study of perfect squares. He is captain of the Science Olympiad team, an avid runner and violinist, as well as a weekly volunteer at a geriatric center. He hopes to attend either Harvard or the California Institute of Technology.
- Tenth Place, a \$20,000 scholarship, is awarded to Bob Cherng, 17, a senior at Troy High School in Fullerton, CA. He submitted an atmospheric chemistry project entitled, "Gas Phase Formation of Solid Ammonium Halides: A Computational Study," which studies the transition of two gases - ammonia and hydrogen halide - into airborne clusters of solid ammonium halide. Bob believes his work, all done by a computer, could be applied to the study of how acid rain is formed, or how the ozone is depleted. Born in Taiwan, Bob is first in his class, co-president of the Future Scientists and Engineers of America Club, and co-captain of the Science Olympiad team. Bob hopes to attend the California Institute of Technology, Massachusetts Institute of Technology, or the University of California at Berkeley.

The remaining 30 finalists will each receive a \$5,000 scholarship award. In addition to the scholarship award, each finalist in the Intel STS will receive a mobile computer with an Intel Pentium® III processor featuring Intel® SpeedStep™ technology.

"The Intel Science Talent Search is about pursuing better ways to do things, continuously pushing out the frontiers of knowledge," said Dr. Dudley Herschbach, chairman of the board of Science Service and a Nobel Laureate in chemistry. "The work of these forty young scientists, representative of many others, is a harbinger of the great

bounty of inventions and scientific discoveries awaiting us in the 21st century."

Finalists were judged on their individual research reports for their research ability, scientific originality, and creative thinking. All Intel Science Talent Search finalists were reviewed and judged by top scientists from a variety of disciplines. The judging team was led by Dr. Andrew Yeager, a physician at Emory University School of Medicine, and pioneer in stem transplantation.

Background

The Intel STS 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. Alumni of the STS hold more than 100 of the world's most coveted science and math honors including three National Medals of Science, nine MacArthur Foundation grants, two Fields Medals and five Nobel Prizes. Many have been elected to the National Academy of Sciences or the National Academy of Engineering.

The program has been coordinated since its inception by Science Service, one of the most respected non-profit organizations advancing the cause of science. Over the past 59 years, STS has recognized more than 2,000 finalists with more than \$5 million in scholarships. For more information on Science Service or the Intel STS, visit www.sciserv.org.

Intel Innovation in Education

Intel's sponsorship of the STS is part of the Intel Innovation in Education initiative, a global, multimillion-dollar effort to help realize the possibilities of science and technology in education. The goal is 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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