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NEW YORK TEENS TAKE REGIONAL TITLE IN NATION'S TOP HIGH SCHOOL SCIENCE COMPETITION

Siemens Competition Regional Winners Announced for Middle States Next Stop: National Finals and a Shot at \$100,000

Guannan (Roger) Wang of Horseheads, NY, Wins Top Individual Prize;
Jinju Yi of Plainview, NY, and Vijay Jain of New Hyde Park, NY, Win Top Team Prize

PITTSBURGH, PA, November 18, 2006 — The cutting-edge science of nanotechnology earned top honors tonight for Guannan (Roger) Wang and the team of Jinju Yi and Vijay Jain in the Middle States Regional Finals of the 2006-07 Siemens Competition in Math, Science & Technology, the nation's premier high school science competition.

The prestigious Siemens Competition, a signature program of the Siemens Foundation, is administered by the College Board. As Siemens Competition National Finalists, tonight's winners will be invited to join an elite group of just six individuals and six teams competing at the Siemens National Finals at New York University in New York this December for scholarships ranging from \$10,000 to the top prize of \$100,000.

"These young science stars are a shining example of American ingenuity at its most inspiring," said Thomas N. McCausland, chairman of the board of the Siemens Foundation. "They have more than upheld the exceptionally high standards set by their predecessors in this Super Bowl of science competitions."

The students presented their research this weekend to a panel of judges from Carnegie Mellon University, host of the Middle States Regional Finals.

Mr. Guannan (Roger) Wang, a senior at Horseheads High School in Horseheads, New York, won the individual category and a \$3,000 college scholarship for a materials science project on the conductive properties of gold nanoparticle films.

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Ms. Jinju Yi, a senior at Plainview Old-Bethpage John F. Kennedy High School in Plainview, New York, and Mr. Vijay Jain, a senior at Herricks High School in New Hyde Park, New York, won the team category and will share a \$6,000 scholarship for a bioengineering project that might one day aid in the detection of viruses, cancer and bioterrorist agents.

The Winners

Guannan (Roger) Wang's winning individual project is entitled, *Thin Film Assemblies of Gold Nanoparticles: Correlation between the Nanostructural Parameters and Conductivity Properties*.

"Based on a new method to produce gold nanoparticles highly uniform in size, Mr. Wang saw the potential to test theories of the electrical conduction in composite materials better than ever before," said Dr. Stephen Garoff, professor of physics at Carnegie Mellon University. "Through a simple synthesis technique, he made films in which the particles were uniformly and controllably separated, and measured the conductivity to confirm a longstanding theory. Using his experimental data, he discovered interesting new characteristics of the electrical conductivity in such materials. Mr. Wang conducted an elegant experiment and demonstrated a deep understanding of the science involved."

Potential real world applications of nanomaterials include sensing technology used in health, homeland security and information storage. Mr. Wang's mentor on the project was Dr. Chuan-Jian Zhong, Research Director and professor, SUNY Binghamton. This work has been published in the scientific literature with Mr. Wang as coauthor.

Born in China, Mr. Wang moved to the U.S. at age four. His love for science stems from his father, who used to bring his son to his polymer materials science lab at Cornell University. Mr. Wang still remembers his first science experiment: examining the difference between his and his father's hair as viewed under a light microscope. A violinist for seven years, he performs with the Youth Orchestra of the Southern Finger Lakes. Fluent in Chinese, his hobbies include swimming and listening to music. He plans to pursue a career in medicine.

In their winning team project, *Surface Molecular Imprinting of a Nanoscale Transducer for the Rapid Detection of Bioterrorist Agents and Early Diagnosis of Cancer*, Jinju Yi and Vijay Jain achieved a significant step toward a sensor for biological molecules that could be applied to everything from clinical diagnostics to first responders to bioterrorist attacks.

"The team showed that such sensors could be constructed by imprinting the macromolecule to be detected in a single layer of smaller molecules one molecule thick on a gold

surface,” said judge Dr. Bruce Armitage, associate professor of chemistry at Carnegie Mellon University. “After that macromolecule is removed, it leaves a unique footprint in the layer that can be used to detect that specific molecule in the air, water or a biological sample. They demonstrated great initiative and a broad interdisciplinary approach to their work.”

The team’s mentors were Dr. Yantian Wang, Dr. Miriam Rafailovich, Marylou O’Donnell, Rebecca Isseroff, Charles Duggan and Karim Gangji.

Jinju Yi is fluent in Korean and enjoys playing the piano and drums, as well as playing and performing traditional Korean dances and instruments. A member of the National Honor Society and National Art Honor Society, Ms. Yi’s previous honors include the 2006 Regional Ricoh Sustainable Development Award in the Long Island Science and Engineering Fair and the National Society of Professional Engineers Innovative Engineering Award. She anticipates majoring in chemistry or psychology.

Vijay Jain is fluent in Hindi and Spanish. He is a recipient of the Herbert Hoover Young Engineers Presidential Libraries Award and was selected as one of two U.S. Representatives for the 39th Joint Schools Science Exhibition in Hong Kong, China. Mr. Jain is treasurer of the student council, managing editor of his school newspaper and president of the Diversity Club. He enjoys tennis, Ultimate Frisbee, piano and violin, and has performed with the Metropolitan Youth Orchestra. Potential majors include biophysics and applied mathematics.

Runners-up each received a \$1,000 scholarship. In addition, the Siemens Foundation awards \$2,000 per project to the high school of every regional finalist.

Runners-up in the individual category were:

- Serena Fasano, Glenelg High School, Glenelg, MD
- Jeffrey Guo, Montgomery Blair High School, Silver Spring, MD
- Jane Sun, Hunter College High School, New York, NY
- Victoria Yao, Montgomery Blair High School, Silver Spring, MD

The team runners-up were:

- Jacob Loewenstein, Hebrew Academy of the Five Towns and Rockaway, Cedarhurst, NY, and Brienne Kugler, Jericho Senior High School, Jericho, NY
- Maxinder Soni, The Wheatley School, Old Westbury, NY, and BOWEI (Sharon) Ji, Jericho Senior High School, Jericho, NY
- Kenneth and Christopher Winter, Ward Melville High School, East Setauket, NY
- Donglin Yi, Hunter College High School, New York, NY, and Janet Hui, Half Hollow Hills High School East, Dix Hills, NY

The Siemens Competition

The Siemens Competition was launched in 1998 to recognize America's best and brightest math and science students. This year, 1,660 students entered the competition.

Entries are judged at the regional level by esteemed scientists at six leading research universities which host the regional competitions: Carnegie Mellon University (Middle States), University of Notre Dame (Midwest), Stanford University (West), Massachusetts Institute of Technology (New England), Georgia Institute of Technology (South), and The University of Texas at Austin (Southwest).

The Siemens National Finals, judged by a panel of nationally renowned scientists and mathematicians, will take place December 1–4 at New York University in New York.

Log on to www.siemens-foundation.org to watch Guannan (Roger) Wang, Jinju Yi and Vijay Jain during a webcast from the Siemens Competition National Finals in New York. Webcast schedule: Student presentations on Sunday, December 3, 12:00pm-5:00pm EST. Live webcast of the national winners press conference on Monday, December 4, from 8:30am EST.

The Siemens Foundation

The Siemens Foundation, established in 1998, is a national leader in math and science education, providing nearly \$2 million in scholarships and awards annually. Based in Iselin, New Jersey, the Foundation's signature programs – the Siemens Competition in Math, Science & Technology, the Siemens Awards for Advanced Placement, and the Siemens Teacher Scholarships – recognize exceptional achievement in science, math and technology. By supporting outstanding students today, and recognizing the teachers and schools that inspire their excellence, the Foundation helps nurture tomorrow's scientists and engineers. The Foundation's mission is based on the culture of innovation, research and educational support that is the hallmark of Siemens' U.S. operating companies and its parent company, Siemens AG. For more information, please visit www.siemens-foundation.org.

NOTE TO EDITORS: Photos of winners available on request.

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