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TEEN SUPERSTARS EXPLORE CHEMOTHERAPEUTICS AND A 30-YEAR-OLD MATH PROBLEM; TAKE HOME TOP PRIZE IN 2009 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY

\$100,000 WINNERS ANNOUNCED AS SIEMENS FOUNDATION CONTINUES TO DRIVE NEXT GENERATION INNOVATION

Ruoyi Jiang of East Setauket, New York, Wins Individual Grand Prize;
Sean Karson of Winter Park, Florida, Dan Liu of Austin, Texas and Kevin Chen of Missouri City, Texas Win Team Grand Prize

NEW YORK, NY, December 7, 2009 – America’s brightest minds and the innovators of tomorrow took on revolutionary research in biophysics and mathematics. Ruoyi Jiang and the team of Sean Karson, Dan Liu and Kevin Chen were named \$100,000 Grand Prize winners in the 2009 Siemens Competition in Math, Science & Technology. The annual awards were presented this morning at New York University, host of the Siemens Competition National Finals. The prestigious Siemens Competition is a signature program of the Siemens Foundation and is administered by the College Board.

Ruoyi Jiang, a senior at Ward Melville High School in East Setauket, New York, won the \$100,000 scholarship in the individual category for research on chemotherapy drug resistance. Sean Karson, a senior at Trinity Preparatory High School in Winter Park, Florida; Dan Liu, a junior at the Liberal Arts and Science Academy High School in Austin, Texas; and Kevin Chen, a junior at William P. Clements High School in Sugar Land, Texas, won the team category and will share a \$100,000 prize for their graph theory research.

“These students have just earned the highest recognition for original high school research projects in the United States,” said Thomas McCausland, Chairman of the Siemens Foundation. “We know this is just the beginning. Their dedication to excellence and passion for math and science will no doubt change the world.”

The finals were judged by a panel of nationally renowned scientists and mathematicians headed by lead judge Dr. Thomas Jones, a prominent scientist, author, pilot and former NASA astronaut. There were 20 national finalists competing in this year’s national finals, including six individuals and six teams. The finalists previously competed at one of six regional competitions held at leading research universities throughout the month of November.

The Winning Projects

Ruoyi Jiang won the top prize, and a \$100,000 college scholarship, for his biophysics research which investigated the molecular basis of a prominent mechanism of chemotherapy drug resistance. The project uses state-of-the-art computational techniques to develop a more complete understanding of how Taxol functions to kill tumor cells. Mr. Jiang's project, entitled, *Targeting Loop Dynamics in $\beta I/\beta III$ Isotype Tubulin: The Application of In Silico Techniques in Combating Chemotherapy Drug Resistance*, addresses very important outstanding questions surrounding Taxol; the understanding of such questions can help develop better chemotherapeutics for treating cancer. Mr. Jiang worked on this project with his mentor Dr. Carlos Simmerling, Professor of Chemistry in the Department of Chemistry at Stony Brook University in Stony Brook, New York, as well as Dr. George J. Baldo, Director of InSTAR in East Setauket, New York.

"Mr. Jiang's computational results help clarify the mechanism of action for Taxol, as well as suggest an exciting and provocative prediction for the structural basis of chemotherapy resistance," said Dr. Rommie Amaro, Assistant Professor, Departments of Pharmaceutical Sciences and Computer Science at the University of California in Irvine, California. "This research is interdisciplinary and required Mr. Jiang to synthesize not only the biology and chemistry but also the computational and theoretical concepts behind the methods."

Mr. Jiang has placed at a variety of science competitions including the National Science Bowl, received Honorable Mention in the Toshiba ExploraVision Competition and was recognized for his involvement in the Science Olympiad. He is editor of his school newspaper, *Kaleidoscope*, and a member of the Science Bowl Team. His favorite subject is AP Physics. He hopes to become a research lab director upon completion of his studies. In addition to his academic accomplishments, he spends his free time doing volunteer work at the Stony Brook University Hospital. He enjoys playing the violin, tennis and loves to draw in his free time. He also speaks fluent Mandarin.

Sean Karson, Dan Liu and Kevin Chen won the team category and will share a \$100,000 scholarship for their mathematics research, entitled *Relating Missing and Decycling Edges in Directed Graphs*. The results of this project advance the infrastructure and knowledge of graph theory, by shedding new light on a problem that's been open in the mathematics community since 1978. The team's approach may open doors to a reduction of bottlenecks in complex networks, like the World Wide Web and transcontinental trade routes, thereby creating faster and more efficient processes. The team's mentor was Dr. Jian Shen, Professor of Mathematics at Texas State University in San Marcos, Texas.

"We never expected high school students to achieve such success in examining this upper bound aspect of graph theory," said Dr. Karen Collins, Professor of Mathematics, and Chair of the Department of Mathematics and Computer Science at Wesleyan University in Middletown, Connecticut. "The team coupled enthusiasm and confidence with deep knowledge and substance, and their work has already been cited by other Mathematicians, showcasing its immediate impact for the mathematics community."

Mr. Karson has received Excellence Awards for Honors Computer Programming C++, Graphics I, Honors Chemistry, Honors Precalculus, AP JAVA and AP Chemistry. He has also received the Rensselaer Polytechnic Institute Math & Science Award and is recognized as a National Merit Semifinalist. Mr. Karson is Captain of the Quiz Bowl Team, President of Mu Alpha Theta, a member of both the Spanish Honor Society and the National Honor Society. In addition to his academic

honors, Mr. Karson has received the Varsity Baseball Coach's Award and the Most Valuable Defensive Player Award, and has been the starting third baseman on the Varsity Baseball Team since his sophomore year. Mr. Karson leveraged his love of puzzles to create a club called Rubik's Revenge, aimed to teach middle school students how to solve Rubik's Cubes. In addition, he also volunteers for the Center of Math, Arts and Science Achievement, a program which encourages elementary school students to get excited to learn math and science.

Mr. Liu is currently Vice President of the InvenTeams Club, Co-Director of his school's Math Team, and a member of the Liberal Arts and Science Academy's (LASA) National Honor Society Chapter. Mr. Liu is also a part of the LASA Camerata Orchestra and Science Olympiad Team, as well as the Circle C Select Swim Team. Mr. Liu has previously participated in the 2009 Science Olympiad Regional Competition at the University of Texas at Austin and placed second in the Disease Detectives event. Mr. Liu also won first place in the arts-and-crafts division of the 2008 UT French Competition. In his spare time, Mr. Liu loves to play badminton, and he enjoys poker and computer games.

Mr. Chen is a member of his school's Mu Alpha Theta, Junior Engineering Technical Society and Computer Science Team, and is also an active volunteer through his school's Santa Exchange and at a local middle school Math Club. Mr. Chen has been selected as a Finalist at the U.S. Computing Olympiad, Semifinalist for the U.S. Physics Olympiad and Regional Winner of the Physics Bowl. He was also a three-time U.S. Mathematics Olympiad qualifier. Through Mr. Chen's participation in math competitions, he has been invited to meet the President of the United States on several occasions, and has appeared on the Regis and Kelly Show where he won the Relly Award for Best Junior Achiever. Mr. Chen enjoys practicing piano, playing tennis and programming games in his free time.

The additional national winners of the 2009 Siemens Competition were:

Individuals

- \$50,000 scholarship – Lynnelle Ye, Palo Alto, California
- \$40,000 scholarship – Marissa Suchyta, Chicago, Illinois
- \$30,000 scholarship – Lanair Lett, Henderson, North Carolina
- \$20,000 scholarship – Dmitriy (Tim) Kunisky, Livingston, New Jersey
- \$10,000 scholarship – Peter Hu, Denton, Texas

Teams

- \$50,000 scholarship – Neil Shah of Greensboro, North Carolina, and Yekaterina (Katie) Shpanskaya, Raleigh, North Carolina
- \$40,000 scholarship – Xiao (Cathy) Zhou of Flushing, New York, Israt Ahmed of Woodhaven, New York and Stephanie Chen of Bayside, New York
- \$30,000 scholarship – Randy Jia of Rochester Hills, Michigan, and David Lu of Bloomfield Hills, Michigan
- \$20,000 scholarship – Benjamin Song and Quan (Jack) Chen, Audubon, Pennsylvania
- \$10,000 scholarship – Ryan Lindeborg, Laguna Niguel, California and Andrew James Swoboda, Oakton, Virginia

The Siemens Competition

The Siemens Competition was launched in 1998 to recognize America's best and brightest math and science students. In another record-setting year, 2,151 students registered to enter the Siemens Competition in Math, Science and Technology in 2009 – more than ever before - for a total of 1,348 project submissions – a 14% increase in project submissions over 2008 figures and more than a 12% increase in the number of registrations.

Entries are judged at the regional level by esteemed scientists at six leading research universities which host the regional competitions: California Institute of Technology; Carnegie Mellon University; Georgia Institute of Technology; Massachusetts Institute of Technology; University of Notre Dame; and The University of Texas at Austin.

Winners of the regional events were invited to compete at the National Finals at New York University in New York City, December 4 – December 7, 2009. Please visit <http://www.siemens-foundation.org> for more information and to view the archived webcast of the press conference. You can also log into and follow the Siemens Foundation on Twitter (<http://twitter.com/SFoundation>).

About the Siemens Foundation

The Siemens Foundation provides more than \$7 million annually in support of educational initiatives in the areas of science, technology, engineering and mathematics (STEM) in the United States. Its signature programs include the Siemens Competition in Math, Science & Technology, Siemens Awards for Advanced Placement, and the newest program, The Siemens We Can Change the World Challenge, which encourages K-12 students to develop innovative green solutions for environmental issues. In January 2010, the Siemens Foundation will launch a national STEM education program for teachers, designed to support educators in their efforts to foster student achievement in these fields. 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. companies and its parent company, Siemens AG.

For further information, visit www.siemens-foundation.org.

The College Board

The College Board is a not-for-profit membership association whose mission is to connect students to college success and opportunity. Founded in 1900, the College Board is composed of more than 5,700 schools, colleges, universities and other educational organizations. Each year, the College Board serves seven million students and their parents, 23,000 high schools, and 3,800 colleges through major programs and services in college readiness, college admission, guidance, assessment, financial aid, enrollment, and teaching and learning. Among its best-known programs are the SAT[®], the PSAT/NMSQT[®] and the Advanced Placement Program[®] (AP[®]). The College Board is committed to the principles of excellence and equity, and that commitment is embodied in all of its programs, services, activities and concerns.

For further information, visit www.collegeboard.com.

NOTE TO EDITORS: B-roll and photos of winners available on request.

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