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**TEEN SCIENCE SENSATIONS FROM PENNSYLVANIA AND MARYLAND
TAKE REGIONAL TITLE IN PRESTIGIOUS SIEMENS COMPETITION
IN MATH, SCIENCE & TECHNOLOGY**

**Research on Astrophysics and Mathematics Honored in Nation's Premier Science Research
Competition for High School Students at Massachusetts Institute of Technology**

**Benjamin Clark of Lancaster, Pennsylvania, Wins Top Individual Prize;
James Pinkerton of Chevy Chase, Maryland, and
Rafael Setra of Silver Spring, Maryland, Win Top Team Prize**

CAMBRIDGE, MA, November 6, 2010 —Cutting edge research on the formation of stars and a striking advance in mathematical game theory earned top honors tonight for Benjamin Clark and the team of James Pinkerton and Rafael Setra in the Region Five Finals of the 2010-11 Siemens Competition in Math, Science & Technology, the nation's premier science research competition for high school students.

The Siemens Competition, a signature program of the Siemens Foundation, is administered by the College Board. Tonight's winners will receive thousands of dollars in scholarships and be invited to compete at the National Finals in Washington, DC, December 3–6, 2010, where the winners of six regional competitions will vie for the \$100,000 Grand Prize and national acclaim for extraordinary scientific achievement at the high school level.

"Each year, the Siemens Foundation invites America's high school students to make their mark in the world of science," said Jeniffer Harper-Taylor, President of the Siemens Foundation. "We commend these students on rising to the challenge and pushing the envelope of scientific thought."

The students presented their research this weekend to a panel of judges from Massachusetts Institute of Technology (MIT), host of the Region Five Finals.

The Winning Individual

Benjamin Clark, a 15-year-old senior at Penn Manor High School in Millersville, Pennsylvania, won the individual category and a \$3,000 college scholarship for his project, *The Close Binary*

Fraction: A Bayesian Analysis of SDSS M Dwarf Spectra. This astrophysical study of close binary stars provides new information on the occurrence of binary systems within M dwarf stars, a finding that has implications for stellar formation.

Using individual spectra from approximately 40,000 dwarf stars observed by the Sloan Digital Sky Survey (SDSS), Mr. Clark used sophisticated statistical and numerical simulations to demonstrate that binary stars make up 3% of the M dwarf star population. These results argue strongly that a process called dynamical destruction alone cannot account for the processes that govern star formation.

“This is a significant piece of publishable research with a new finding,” said competition judge Leigh Royden, Professor of Earth, Atmospheric and Planetary Science at MIT. “Benjamin Clark showed great initiative and independence, demonstrated an excellent knowledge of the physics of binary stars as well as their spectral properties, and performed an exceptionally careful statistical analysis of a very large data set.”

Mr. Clark is a National Merit Semifinalist, Model United Nations member and a National Honor Society head delegate. Active in the Boy Scouts of America, he has participated in the USA Mathematical Olympiad, USA Physics Olympiad, Princeton University Mathematics Competition and Pennsylvania Math League. Mr. Clark plans to major in astrophysics in college and pursue a career at a major research institution. His mentor on his project was Dr. Cullen Blake, Department of Astrophysical Sciences, Princeton University.

The Winning Team

James Pinkerton and Rafael Setra, seniors at Montgomery Blair High School in Silver Spring, Maryland, won the team category and will share a \$6,000 scholarship for their mathematics project, *The Duplicator-Spoiler Game for an Ordinal Number of Turns*.

“This team has made a striking extension of a game-theoretic interpretation of descriptive logic that dates back to the 1960s. Using it, they can distinguish between mathematical structures not separable by simple queries,” said competition judge Haynes Miller, Professor of Mathematics at MIT. “Their work has potential applications to resource allocation in designing search algorithms. What impressed me about these students was their clarity of thought. It’s a very confusing subject to work in and they found their way through it to a new frontier.”

Mr. Pinkerton is the president of the Chess Club National Honors Society and French Honors Society. Fluent in French, he single sculls on the Potomac and plays chess and Go competitively. Mr. Pinkerton teaches chess as a volunteer in several programs in his county and in inner-city Washington, DC. He also teaches mathematics to underclassmen. He credits his father, who taught him “fun mathematics, not the dreary algebra of secondary school,” with nurturing his love for the subject. Mr. Pinkerton would like to study mathematics in college and to become a university professor.

Mr. Setra was born in Sao Paulo, Brazil, and moved to the US when he was eight years old. He speaks Portuguese and Spanish and is part of Operation Fly, National Honors Society and the

Martial Arts Club. A volunteer at Viers Mill Elementary School, Mr. Setra plays Starcraft 2 and non-competitive football. He would like to study mathematics, engineering and computer science and to become a college professor.

Mr. Pinkerton and Mr. Setra's mentor on their project was Dr. William Gasarch.

Regional Finalists

The remaining regional finalists each received a \$1,000 scholarship. Regional Finalists in the individual category were:

- Chung Su Hong, Glastonbury High School, Glastonbury, Connecticut
- Young Soo Jang, Saint Paul's School, Concord, New Hampshire
- Jonathan Rajaseelan, Lancaster Country Day School, Lancaster, Pennsylvania
- Shubhro Saha, Choate Rosemary Hall, Wallingford, Connecticut

Team Regional Finalists were:

- Yuhao Ma and Timothy Donahoe, Simsbury High School, Simsbury, Connecticut
- Lili Meng, Marlboro High School, Marlboro, New Jersey, and Vincent Qiu, Livingston High School, Livingston, New Jersey
- Rose Soskind and Michael Soskind, West Windsor-Plainsboro High School South, Princeton Junction, New Jersey
- Julia Yu and Thomas Li, Newton South High School, Newton, Massachusetts

The Siemens Competition

The Siemens Competition was launched in 1998 to recognize America's best and brightest math and science students. Every fall, America turns its eye to the brilliant young scientists competing in the Siemens Competition. 2,033 students registered to enter the Competition this year for a record number of 1,372 projects submitted. 312 students were named semifinalists and 94 were named regional finalists, representing 36 states. 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.

Follow the Siemens Foundation on Twitter (www.twitter.com/sfoundation) and Facebook (www.facebook.com/SiemensFoundation) for updates throughout the 2010-11 Siemens Competition. Then visit www.siemens-foundation.org at 9:30am EST on December 6 for a live webcast of the National Finalist Awards Presentation.

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 Siemens We Can Change the World Challenge, which encourages K-12 students to develop innovative green solutions for environmental issues. 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 more information, visit www.siemens-foundation.org.

The College Board

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up of more than 5,700 of the nation's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success – including the SAT® and the Advanced Placement Program®. The organization also serves the education community through research and advocacy on behalf of students, educators, and schools.

B-roll and photos of winners available on request.

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