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STUDENTS FROM GEORGIA AND CALIFORNIA WIN REGIONAL COMPETITION AT THE GEORGIA INSTITUTE OF TECHNOLOGY

Regional Winners Move on to Final Phase of Competition: National Finals in Washington, D.C.

**Alexander Kirov (Evans, GA) Wins Top Individual Honors;
Jasmin Gao (Suwanee, GA), Rose Hong (San Diego, CA) Win Top Team Honors**

ISELIN, NJ, Nov. 7, 2016 –Three students have been named National Finalists in the Siemens Competition in Math, Science & Technology after earning top spots in one of two regional competitions that took place this past weekend. The Competition is the nation's premier science research competition for high school students and seeks to promote excellence by encouraging students to undertake individual or team research projects. For more information go to: www.siemens-foundation.org

Alexander Kirov of Evans, Ga. earned top individual honors and a \$3,000 scholarship for research on uncovering the mechanism of the progression of Alzheimer's disease. Research on replacing injured dental tissue and restoring function to a tooth after severe damage earned **Jasmin Gao** of Suwanee, GA. And **Rose Hong** of San Diego, CA. the \$6,000 shared team scholarship. They were among 96 students overall selected to compete in regional competitions across the country this month out of a pool of more than 1,600 projects submitted for the competition this year.

These top regional winners are now moving on to the final phase of the Siemens Competition to present their work at the National Finals in Washington, D.C., December 5-6, 2016, where \$500,000 in scholarships will be awarded, including two top prizes of \$100,000.

The students presented their research this weekend to a panel of judges at the Georgia Institute of Technology, host of the [Region Six](#) Finals.

"These student projects are evidence of great teaching in our schools today," said David Etwiler, CEO of the Siemens Foundation. "These are high school students presenting advanced research that is helping to solve real problems. That's pretty amazing."

The Siemens Competition, launched in 1999 by the Siemens Foundation, was established to increase access to higher education for students who are gifted in STEM and is based on the culture of innovation, research and educational support that is the hallmark of Siemens. This competition, administered by Discovery Education, seeks to recognize and hopefully build a strong pipeline for the nation's most promising scientists, engineers and mathematicians.

The Winning Individual for Region Six

Alexander Kirov, a senior from Greenbrier High School in Evans, Ga., won the individual category and a \$3,000 scholarship for his project entitled, "Exosomes in Amyloid Aggregates Promote Neuronal Damage: A Mechanism of Alzheimer's Pathology."

Alexander's project focused on the cellular triggers of Alzheimer's disease, which is characterized by progressive neuronal loss in the brain that leads to thinking, memory and behavioral disorders, and is ultimately fatal. Today, one out of 10 Americans age 65 and older is diagnosed with Alzheimer's and the number of patients with the disease is rising at an astounding rate. Alexander hopes his research can contribute to reversing this trend.

"Alexander discovered an interesting and novel link between exosomes – the tiny fluid-filled vesicles or sacs released by many cells – and the progression of Alzheimer's disease," said competition judge Dr. Fredrik Vannberg, Assistant Professor of Biology at the Georgia Institute of Technology. "His findings identify new pathways for treating Alzheimer's that could potentially prevent the disease from developing or slow its progression in patients."

Alexander aspires to have a research career in the biomedical sciences. As captain of his school's Science Bowl and math teams, he sees himself as a young leader in STEM. Alexander has competed in numerous science and math competitions, including the US National Chemistry Olympiad as a top nine scorer in his region of over 300 participants. Alexander hopes to study in an MD/PhD program after he completes college.

Alexander Kirov's mentor is Dr. Erhard Bieberich of the Medical College of Georgia at Augusta University.

The Winning Team for Region Six

Jasmin Gao of Suwanee, Ga. and Rose Hong of San Diego, Ca. won the team category and will share a \$6,000 scholarship for their project entitled, "Effects of Fibrin Gel Scaffolds and Dexamethasone on the Differentiation of Human Dental Pulp Stem Cells for Applications in Regenerative Endodontics."

The team discovered that fibrin, a protein that forms during blood clots, effectively promotes the growth and differentiation of dental pulp stem cells. Their research presents a promising step toward the replacement of injured dental tissue and the restoration of its biological function.

"Rose and Jasmin's research is an important contribution to the field of restorative dentistry, and to our understanding of how to treat severe dental injuries and trauma," said competition judge Dr. Shuyi Nie, Assistant Professor of Biology at the Georgia Institute of Technology. "Their project could ultimately lead to improved treatment of dental trauma and save teeth that would otherwise be lost under traditional root canal procedures."

Jasmin Gao, a senior at Northview High School in Johns Creek, Ga., is active in student government, mock trial, and the Junior Classical League. One of Jasmin's proudest achievements to date is founding Girls in STEM, an organization that provides free STEM classes to young girls and empowers them to defy gender roles. Jasmin sees herself as a passionate advocate for gender equality in the STEM fields, and hopes to continue creating opportunities for young women to grow and challenge expectations.

Rose Hong, a junior at Del Norte High School in San Diego, Ca., was inspired to study this area of research after one of her and her teammate's friends developed a painful tooth infection from a root canal. Rose is active in the Science Olympiad, Academic League, and Math Club, and she is also a U.S. National Chemistry Olympiad semifinalist. Rose is an avid musician and has played at Carnegie Hall, winning first prize in the 2016 United States International Duo Piano Competition. She aspires to be a doctor or engineer.

The team's mentors are Dr. Marcia Simon, Professor of the Department of Oral Biology and Pathology at Stony Brook University, and Dr. Miriam Rafailovich, Distinguished Professor of Materials Science and Engineering at Stony Brook University.

Regional Finalists

The remaining regional finalists each received a \$1,000 scholarship.

Regional Finalists in the individual category were:

- Matthew Dardet, Pine Crest School, Fort Lauderdale, Fl.
- Emily Liu, duPont Manual High School, Louisville, Ky.
- Nimisha Pant, North Carolina School of Science and Mathematics, Durham, Nc.
- Amber Yang, Trinity Preparatory School, Winter Park, Fl.

Team Regional Finalists were:

- Harriet Khang, Thomas Jefferson High School, Alexandria, Va.; Kelly Cho, Thomas Jefferson High School, Alexandria, Va. and Shinbe Choi, McLean High School, McLean, Va.

- Richard Lun, Thomas Jefferson High School, Alexandria, Va. and Elizabeth Ling, Thomas Jefferson High School, Alexandria, Va.
- Mark Raj, duPont Manual High School, Louisville, Ky. and Ruchi Sumanasekera, duPont Manual High School, Louisville, Ky.
- Nikhil Reddy, North Carolina School of Science and Mathematics, Durham, Nc. and Charles Goodman, North Carolina School of Science and Mathematics, Durham, Nc.

The Siemens Competition

For the 2016 Siemens Competition, 2,146 students (1271 individuals, 304 2-person teams, 89 3-person teams) submitted applications from 46 states plus the District of Columbia and 7 countries with more than 1,600 projects submitted for consideration. 498 students were named Semifinalists and 96 were named Regional Finalists. The students present their research in a closed, online forum, and entries are judged at the regional level by esteemed scientists at six leading research universities which host the regional competitions: Georgia Institute of Technology and Massachusetts Institute of Technology (November 4-5), California Institute of Technology and University of Notre Dame (November 11-12), and Carnegie Mellon University and The University of Texas at Austin (November 18-19).

The winners of each regional weekend will be announced at 12 noon (ET) on the following Monday at <http://siemensusa.synapticdigital.com/US/Siemens-Foundation>. For news and announcements about the Regional Competitions and the National Finals, follow us on Twitter [@sfoundation](https://twitter.com/sfoundation) (#SiemensComp) and like us on Facebook at [Siemens Foundation](https://www.facebook.com/Siemens-Foundation).

*Interviews, video and photos available by
visiting <http://siemensusa.synapticdigital.com/US/Siemens-Foundation>.*

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About the Siemens Foundation

The [Siemens Foundation](https://www.siemens-foundation.org) has invested more than \$90 million in the United States to advance workforce development and education initiatives in science, technology, engineering and math. The Foundation's mission is inspired by the culture of innovation, research and continuous learning that is the hallmark of Siemens' companies. Together, the programs at the Siemens Foundation are helping close the opportunity gap for young people in the U.S. when it comes to STEM careers, and igniting and sustaining today's STEM workforce and tomorrow's scientists and engineers. For further information, visit www.siemens-foundation.org or follow [@sfoundation](https://twitter.com/sfoundation).

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