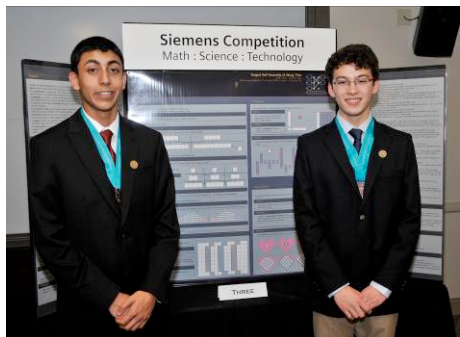


**2012 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY
National Finalists**



JONATHAN TIDOR and ROHIL PRASAD
Lexington High School, Lexington, Massachusetts
HOMETOWN: Lexington, Massachusetts
PROJECT: New Results in Staged Self-Assembly of Wang Tiles
FIELD: Mathematics
MENTOR: Jesse Geneson, Massachusetts Institute of Technology

"We decided on this research topic not only because of the interesting math involved, but also because of its potential to be used beneficially in the real world."

Jonathan Tidor and Rohil Prasad's mathematics research explores self-assembly, which deals with the spontaneous appearance of order out of simple parts and is often applied in the field of nanotechnology. The team looked at a self-assembly model and developed a method to build arbitrary shapes that is optimal in most situations. They found faster ways to create systems of particles that assemble themselves into particular structures, which could make it easier to assemble a large variety of nanostructures, such as nanoscale biomedical devices. Jonathan and Rohil, who have known each other since the sixth grade, look forward to the possibility of their research being published in the next few months.

Jonathan Tidor

"I first became interested in math because of my brother. In elementary school I couldn't wait to be older so that I could do all the cool math that he was doing."

Jonathan, a junior, is captain of his school's math team and Science Bowl team, which was a winner at the national Science Bowl. Outside of academics, he enjoys playing the piano. He expects to pursue a career related to mathematics or physics.

Rohil Prasad

"I was inspired to pursue this research by my love of mathematics competitions and a natural curiosity to see what mathematics research was like."

Rohil has participated in numerous mathematics competitions, and was Honorable Mention in the 2012 USA Junior Mathematical Olympiad. In addition, he is a member of his school Science Bowl team, and volunteers with his middle school math team. In his free time, Rohil enjoys playing computer games and ping-pong. A high school junior, he teaches and is a black belt in Tae Kwon Do. Rohil aspires to work in mathematics research or another mathematics-related field.