

8 Bronx Science Students Named Intel Semifinalists

Eight students from the Bronx High School of Science have been named Intel semifinalists. They are **Sahil Agrawal, Bharagava Chitti, Michael Gellman, Danielle Goldman, Olivia Munk, Talal Syed, Qian Kun Tan, and Catherine Wang.**

The Intel Science Talent Search (Intel STS) is the nation's most prestigious pre-college science competition. Alumni of STS have made extraordinary contributions to science and hold more than 100 of the world's most coveted science and math honors, including seven Nobel Prizes and four National Medals of Science. The Intel STS recognizes 300 students and their schools as semifinalists each year - 1,839 applicants in 2012 - to compete for \$1.25 million in awards. From that select pool, 40 finalists are then invited to Washington, DC in March to undergo final judging, display their work to the public, meet with notable scientists, and compete for the top award of \$100,000.

Sahil Agrawal evaluated a new diagnostic technique to predict the metastatic potential of cancer cells. The technique, Multiphoton Microscopy, measures the ratio of certain compounds found in cells (NADH to FAD) which are key players in metabolism. Sahil worked in the lab of Dr. Sushmita Mukherjee at Weill Medical College of Cornell and is a student of Mr. Richard Lee of the Biology Department at The Bronx High School of Science.

Bharagava Chitti research was titled “Modeling stem cell proliferation and differentiation in hybrid spheroid cultures of cancer cells: toward a new method of optimizing and minimizing radiation treatment.” He did this mathematical modeling project under the direction of Dr. Christopher Lange at SUNY Downstate Medical Center. His teacher at Bronx Science is Dr. Julie Mankiewicz of the Biology Department.

Michael Gellman examined the relationship between implicit racial bias and flexible generalization within and across races, and discovered slower and poorer learning of outgroup associations, yet faster generalization, supporting current theories of prejudice formation. Michael worked with Dr. Daphna Shohamy and Juliet Davidow at Columbia University and is a student of Dr. Zach Lynn of the Social Studies department at Bronx Science.

Danielle Goldman examined underlying neural and behavioral correlations between Major Depressive Disorder and Generalized Anxiety Disorder, and discovered that both might be mediated by GABA levels, suggesting the need for changes in the clinical treatment protocols of MDD and GAD. Danielle under the direction of Dr. Vilma Gabbay at the New York University Child Study Center, and is also a student of Dr. Lynn's.

Olivia Munk did a project demonstrated how an animal's sensory experience can impact the structure of the cerebral cortex and that environmental enrichment can work to ameliorate some of the effects of early sensory deprivation, results which have

implications in treating humans with developmental impairments. She worked in the laboratory of Dr. Joshua C. Brumberg, Ph.D of Queens College and The Graduate Center, CUNY. Her teacher at Bronx Science is Dr. JoAnn Gensert of the Biology Department.

Talal Syed, also a student of Mr. Lee's, developed a better assay to detect breast cancer stem cells than that currently used. He worked under the direction of Dr. Christopher Lange at SUNY Downstate Medical Center.

Qian Kun Tan studied lymphatic vascular defects in tissue samples from chromosomally abnormal fetuses. She worked with Dr. Carrie Shawber of Columbia University and is also a student of Mr. Lee's.

Catherine Wang's research focused on gene expression and regulation in fruit flies and may apply to development, cancer, and aging in humans. She worked with Dr. Arthur Skoultschi and Xingwu Lu of the Albert Einstein college of Medicine. Her teacher at Bronx Science is Dr. Marisa Wagner of the Biology Department.