

Toronto

Toronto High School Students Identify Genes that May Help Plants Grow in Salty Soil

Ground-breaking research by three Grade 10 students at the University of Toronto School that could contribute to the development of crops resistant to excessive salt conditions earned them top honours May 1 at the 2008 Toronto regional *Sanofi-Aventis BioTalent Challenge* (SABC).

Jonathan Schneider, Josh Alman and Norman Yau won the \$2,500 first place regional prize, plus a \$1000 prize for the project with the greatest commercial potential, by identifying two genes responsible for root growth and survival of the plant *Arabidopsis* that thrives in salty soil.

A relative of mustard, cabbage and radish, *Arabidopsis thaliana* is a small flowering plant often used as a model organism for basic genetic and molecular biology research.

The students are excited to think where their research might one day lead. *Arabidopsis* itself may be appetizing only to small rodents and the like, but knowledge about its genetic workings may point the way to producing salt-resistant plants and crops and help feed a hungry world. Wind borne ocean salt spray and salt left behind after coastal flooding are common problems in many countries.

Under the supervision of UofT School teacher Meg O'Mahony, the students worked with mentors Nicholas Provart, PhD, and Ron Ammar of the University of Toronto Department of Cell and Systems Biology, to test 10 *Arabidopsis* genes with an unknown function.

Ten varieties of special *Arabidopsis* seeds, each variety lacking a specific gene, were ordered from Ohio. The students then created different saline conditions in petri dishes and compared how well roots of the special seeds grew compared to seeds with all 25,000 genes.

"We were very excited to see the results. This has been a great experience," said Jonathan. Adds Dr. Provart: Identifying two genes that improve salt tolerance "is a powerful finding. Definitely we will be pursuing this further in my lab."