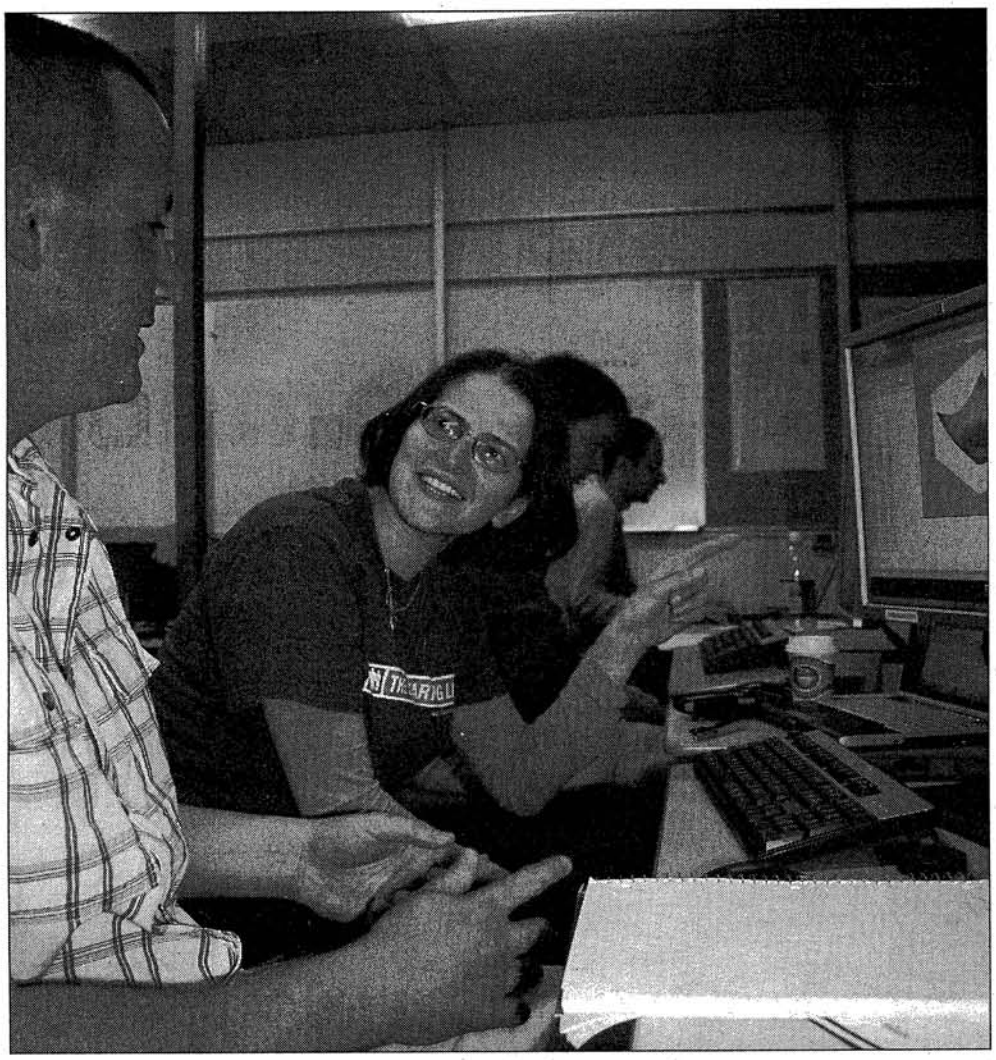

Students Doug Woolford (left) and Anna Belkine discuss their work while participating in a summer school that focused on using mathematics and statistics to simulate the movements of wildfires. *Marilyn Gray Photo*

Top researchers tackle wildfires

Hinton hosts summer school

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Some exceptionally smart people from across the globe were gathered in Hinton last week to put their heads together in work on a particularly difficult problem.

Graduate students of Mathematics and Statistics took over the Hinton Training Centre June 15-19 for a summer school focused on using mathematics and statistics to improve forest fire simulation methods.

Thomas Hillen, of the University of Alberta, and Charmaine Dean, of Simon Fraser University were the organizers of the summer school, which is a small part of the joint research project titled "Forest Fire Spread in Heterogeneous Landscapes."

The project is funded by Alberta Sustainable Resources and Canadian Centres for Excellence MITACS and GEOIDE.

Participants gathered from across Canada, the United States, England Scotland, Turkey and Palestine, though the majority of the participating students were Canadian.

The aim of the summer school was to bring statisticians and mathmeticians together to work on improving Prometheus, an Alberta-made forest fire simulator that is used across the country as well as in New Zealand and, possibly soon, China.

"These kinds of workshops bring different specializations together. It really serves to bring people together."
Anna Belkine,
Mathematics student

The computer program helps firefighters predict how a fire will react to the conditions and comes up with strategies to fight the fire, depending on whether the goal is containment or directing the flames away from a residential area, among other approaches.

In addition to having a chance to put their heads together on a unique problem, students had access to some of the top researchers in the field.

Early in the week, world-renowned researcher Peter Guttorp, a member of the 2007 Nobel Peace Prize winning Intergovernmental Panel on Climate Change, was at the Hinton Training Centre to give a lecture.

Students who participated in the summer school said it was a unique opportunity to have a meeting of the minds with people in different fields and discuss a difficult problem.

"It brings together mathematicians and statistical researchers with applied scientists and managers for agencies like the SRD to see what they're doing and find out how math or statistics can be used," said Doug Woolford, who is finishing his final semester of his post-doctoral fellowship and has been involved in the research program for three years.

Higher-level students of mathematics and statistics generally end up focusing on very specific area of their fields, which may make it difficult to communicate with professionals coming from a different viewpoint, and this workshop addressed that issue directly.

"Unless you go out of that [specialized] environment every once in a while you become very myopic," said Anna Belkine, a fourth year undergraduate student of Mathematics at Simon Fraser University. "You stop having a connection to the real problem."

"These kinds of workshops bring different specializations together," said Belkine. "It really serves to bring people together. It's different than a regular conference and you get a lot more accomplished."

"You feel free to ask dumb questions, and being able to ask dumb quetions is very imortant, especially is its a subject you know very little about," she said.

The program also served to get students out of the classroom and see what organizations like the SRD are doing on the ground to combat and prevent forest fires, through brush cutting and controlled burns.

"It's interesting to see how they're using fire to protect communities from fire," said Woolford.

Organizers said that the summer school not only gives students access to the top professionals in mathematics and statistics, but researchers are gaining access to the top up and coming researchers.

"This summer school is to educate the next generation of researchers and get students interested," said Hillen.

"We want to get passionate graduate students engaged in fire research," said Cordy Tymstra, wildfire science supervisor with the SRD and project lead of the Prometheus project.

"It's really rare to get mathmeticians and statisticians working together on a single problem," said Tymstra. "This is an opportunity to get the new up and coming scientists working the problems with fire. That's really what this is all about."