

folio

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Folio's mandate is to serve as a credible news source for the university community by communicating accurate and timely information about issues, programs, people and events and by serving as a forum for discussion and debate. *Folio* is published 23 times per year.

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Researchers hoping to improve heavy oil upgrading

Richard Cairney

Two Faculty of Engineering professors have been awarded \$118,233 to support research they hope will lead to radical changes in heavy oil upgrading.

Natalia Semagina, a chemical engineering professor, and John Nychka, a materials engineering professor, are working on new catalysts for hydrotreating reactors for oilsands operations. Hydrotreatment is a key process in upgrading crude oil to transportation fuels, and requires the use of hydrogen and catalysts.

"We are trying to develop a new reactor technology, and that requires the development of new catalysts," said Semagina. Upgrading heavy oil from Alberta's oilsands is challenging due to its high sulfur and metal content. Existing reactor technologies require frequent and costly service because existing cata-

lysts use porous structures that get clogged and require regeneration, says Nychka.

"The problem is a question of lifetime. Most current catalysts are porous structures that get clogged up. Ours will be more foul-resistant," he said.

Semagina and Nychka are looking at making significant improvements in the existing technology. "We want to develop catalysts with a much longer lifetime—two, three, four, maybe five times longer. It will be several-fold better," said Semagina. "The big advantage with this project is that it will use hydrogen more efficiently, so the technology will require lower energy input."

The funding was awarded from the Natural Sciences and Engineering Research Council Strategic Project Grants Program. The program fosters partnerships among industry, academia and governments, and increases research and education in areas that could enhance Canada's



John Nychka and Natalia Semagina have been awarded \$118,233 to support research they hope will lead to radical changes in heavy oil upgrading.

economy, society or environment in the coming decade.

Semagina and Nychka are partnering with Syncrude Canada Ltd. on this research project.

Across the country, the federal government is investing \$53.5 million under the program over three years to support 122 research projects at universities. ■

Olympic doctor *continued from page 1*

"It has been a nice, what I call, 'double dip,'" said Clark. "I can provide some care and I can see how the simulation and education process work during these high-stakes, low-frequency events."

While Clark is enjoying every minute of being involved in this event, she admits it has been gruelling. During her first 20 days of work, she had only one scheduled day off. She used it to check out cross-country skiing with her family.

During her work hours, she's wearing skis on a strategic spot on the hill, watching the athletes go by and ensuring the course crew doesn't need medical attention.

"The work side of things has been quite intensive. We're on the hill with big 50-pound packs, checking the equipment, liaising with the team," said Clark. "We're basically pulling 10- or 12- hour days as physicians. We really have to monitor and make sure we don't get burnt out."

But you won't hear complaints from her. "The camaraderie with our teams has been amazing. [It consists of members] from as far away as New Brunswick and Ontario, to a whole crew of doctors from Calgary and

Edmonton and the lower mainland here," said Clark. "The atmosphere in Whistler is just amazing. Everyone is happy."

This is the second time Clark has been involved with the Olympics. In 1988 in Calgary she was what she called a pseudo-athlete, working as a forerunner on the alpine courses, meaning she took the runs before the athletes. So

she's a good person to ask about how Vancouver is doing hosting the games.

"Vancouver has certainly stepped up to what Calgary did, by providing a great atmosphere."

Other U of A faculty attending the games include sport psychology professor John Dunn, Connie Lebrun, director of the Glen Sather Sports Medicine Clinic and professor in the Faculty of Physical Education and Recreation, and athlete health professor Michael Kennedy. Rob Krepps, U of A curling coach and curling manager at the Saville Sports Centre, will be on hand to work with Cheryl Bernard's women's curling team.

Alumni participating at the Games include Neville Wright, the brakeman of the "Canada 2" four-



Marcia Clark goes through a crash simulation in preparation for the Winter Olympics in Vancouver.

man bobsleigh, graduated with a bachelor of physical education and recreation in 2007. Former Golden Bear running back David Bissett, who will be competing in his second Olympics, is the brakeman for the "Canada 1" four-man bobsleigh team. Marc Kennedy, the second in

Kevin Martin's men's curling team, graduated from the U of A School of Business in 2005.

Melody Davidson, who completed a bachelor of physical education degree at the U of A in 1986, will lead the women's national hockey team into battle as its head coach. ■

Peter Sinnema delivers the U of A Broadus Lectures

Folio Staff

Each year, the Department of English and Film Studies at the University of Alberta presents a series of public lectures, named after Edmund Kemper Broadus, its first department head. This year, Peter Sinnema, associate chair in the Department of English and Film Studies and a native Edmontonian, explores the "Hollow Earth Theory" of late 17th-century science, and a range of fantasy literature, in a series of lectures titled

"Cosmic Egg: The Hollow Earth in England and America."

"By treating the Earth as hollow, we have the solution of all the great mysteries," wrote William Reed in *Phantom of the Poles* in 1906, proposing that the Earth is in fact hollow with holes at its poles.

For Sinnema, however, the real mystery behind the hollow-Earth assumption lies elsewhere, answering such questions as why did natural scientists of the time actually come to believe that the existence of a hollow Earth could explain away

the unsettling conundrum of the Copernican universe and Earth-bound humanity's place in it? And why has the debunked hypothesis of a hollow Earth nevertheless

persisted in literature and science fiction?

"The idea has an endless after-life," said Sinnema. "Call me an egg-head, but I want to know why." ■

The Broadus Lectures: Peter Sinnema

Cosmic Egg: The Hollow Earth in England and America. All lectures begin at 3.30 p.m. in Room L-1 of the Humanities Centre. The lectures are free, and everyone is welcome.

March 8: This Bubble of Earth: Edmond Halley's Extravagant Hypothesis

March 10: Halley's Hypothesis in America: Mather's Marvelous Globes and Symmes' Holes

March 12: *Symzonia* and Beyond: Some Forms and Functions of Hollow Earth Fiction