

SPOTLIGHT: UNDERGRADUATE STUDENT RESEARCH

From medicine to outer space, student researchers display skills

BY MARIANNE MAYS WIEBE
The Bulletin

The room was abuzz with nervous energy emanating from the rows of student researchers displaying their research work during the 2012 Undergraduate Research Poster Competition. The annual event took place in University Centre on November 1, with posters entered in five categories: applied sciences; health sciences; natural sciences; social sciences/humanities; and creative works.

This year, a record 120 posters were on display, with research by undergraduate students on topics as diverse as the driving habits of older adults to the effects of aspirin on kidney function. Other topics include using dietary flaxseed to treat heart disease as well as nuclear physics in space. The posters are the result of research conducted over the summer of 2012 by student-researchers who received Undergraduate Research Awards.

Katrice Kazmerik, an undergraduate student in biosystems engineering, displayed research she conducted under the guidance of Stefan Cenkowski, a professor of biosystems engineering who has been working for years to develop a drying system in which hot air in food, feed and other processing industries are replaced with superheated steam in an air-free environment that provides unique opportunities for enhanced product quality, improved energy efficiency, accelerated drying rate and reduced environmental impact by reusing the condensate. Kazmerik learned the research she conducted, as well as from the poster competition process, she said, and explained she wanted to capture the reader's attention with her humorous poster, title, "Hay! Its better than watching paint dry: Drying characteristics of wheat straw for biomass pellet production." Her research focused on finding innovative uses (such as fuel) for wheat straw that might normally go to waste.

Digvir Jayas, U of M VP (research and international), notes that, "This competition is an opportunity for undergraduate students to sharpen their skills and showcase research findings to their peers and to the public." The public was welcome to attend to see what undergraduate students can do in research at early stages of their careers. Many came by to view posters and ask the student researchers questions about their work.

Cash prizes of \$500 for first and \$250 for second will be awarded in each category. An additional prize, an iPad, was added this year, sponsored by the Qualitative Research Group (QRG) for top qualitative research poster.



Photo by Mike Latschislaw
Winners of the Undergraduate Student Research Poster competition, with judges James Blatz, associate VP (partnerships); Kerstin Roger, director, Qualitative Research Group; Gary Glavin, associate VP (research); Digvir Jayas VP (research and international).

2012 UNDERGRADUATE RESEARCH POSTER COMPETITION WINNERS

APPLIED SCIENCES CATEGORY: First place: Gregg Streuber, mechanical and manufacturing engineering, working with Christine Wu, mechanical and manufacturing engineering, Faculty of Engineering. **Second place: Grace Kankindi**, biosystems engineering, working with Ramanathan Sri Ranjan, Faculty of Engineering.

CREATIVE WORKS CATEGORY: First place: Meaghan Juliana Kusyk, Faculty of Architecture, won first place, working with Feiyue Wang, environment and geography, Clayton H. Riddell Faculty of Environment, Earth and Resources, chemistry, Faculty of Science, and Centre for Earth Observation Science (CEOS). **Second place: Jason Shields**, interior environments, working with Shauna Mallory-Hill, interior design, Faculty of Architecture.

HEALTH SCIENCES CATEGORY: First place: Andrew Stammers, Faculty of Kinesiology and Recreation Management, working with Todd Duhamel, Faculty of Kinesiology and Recreation Management. **Second place: Uliana Kovaltchouk**, microbiology, working with D. Court, microbiology, Faculty of Science.

NATURAL SCIENCES CATEGORY: First place: Sarah McAmmond, psychology, working with Launa Leboe-Mcgowan, psychology, Faculty of Arts. **Second place: Natalie Doughty**, biological sciences, working with Steve Whyard, biological sciences, Faculty of Science.

SOCIAL SCIENCES/HUMANITIES CATEGORY: First place: Kiana Wiebe, psychology, working with Raymond P. Perry, psychology, Faculty of Arts. **Second place: Sarah Rigby**, department of psychology, working with Lorna Jakobson, psychology, Faculty of Arts.

QUALITATIVE RESEARCH GROUP, SOCIAL SCIENCES/HUMANITIES CATEGORY: First place: Trevor Wideman, environment and geography, working with Jeff Masuda, environment and geography, Clayton H. Riddell Faculty of Environment, Earth and Resources.

SPOTLIGHT: UARCTIC INTERNATIONAL CONFERENCE

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At the international panel discussion that concluded the UArctic Rectors' Forum 2012, hosted by the U of M at The Fort Garry Hotel, researcher David Barber suggested that global climate change has its epicentre in the Arctic. "We've heard a lot about the fiscal cliff, but we're facing a "climate cliff" that has nothing to do with social structures and everything to do with the real, actual world we live in," he said. Barber, professor and Canada Research Chair in Arctic System Science at U of M, noted that we are heading towards that cliff "at an astonishing rate. What we are doing in the Arctic has consequences," he said.

With the dramatic and rapid change occurring in the Arctic, issues need to be considered and dealt with at an international level, he said. The point was echoed by other panel participants, including Brian Bech Nielsen, Århus University, Denmark, who summarized, "We cannot solve these problems alone." Bech Nielsen argued that the interdisciplinary excellence and cooperation needed in order to face the global challenges could be compared to a symphony orchestra, in which players operate at optimal levels individually while synchronizing their efforts, and work together through the leadership of a conductor.

The panel "Pan-Arctic Partnerships with Global Impact, Research Networks & Research Frameworks" also included: Søren Rysgaard, U of M's Canada Excellence Research Chair in Arctic Geomicrobiology and Climate Change; Uffe Jakobsen, Vice-Rector, *Ilisimatusarfik* (University of Greenland) and U of M President and Vice-Chancellor David Barnard.

In addition to outlining the U of M's Strategic Planning Framework with relation to Arctic research, Manitoba's North and commitment to Indigenous achievement, President Barnard also reviewed the Arctic Science Partnership (ASP). The agreement, between the U of M, Denmark's Århus University and the Greenland

Institute of Natural Resources, brings together more than 200 of the world's leading Arctic researchers and was signed by Barnard on behalf of the U of M in Nuuk, Greenland's capital, in August 2012.

The ASP will ensure synergy in research, education and dissemination of results to public, industry, policy-makers and northerners.

2012 marks the first time a Canadian institution has been selected to host the annual event of the University of the Arctic (UArctic), a cooperative network of universities, colleges and other organizations committed to higher education and research in the North. This year's forum drew nearly 90 presidents and representatives of academic institutions from across the eight circumpolar countries to Manitoba. The four days of panels and discussion finished with an evening gala event at Marshall McLuhan Hall and a trip to Churchill.

"The University of the Arctic Rectors' Forum is a unique opportunity for presidents of Northern and Arctic universities of circumpolar nations to meet and discuss issues related to education, challenging ourselves to pioneer new exchanges and research partnerships," said Barnard.

UArctic promotes education that is circumpolar, interdisciplinary, and diverse in nature, and draws on combined strengths to address the unique challenges of the region. It recognizes the integral role of Indigenous peoples in northern education, and seeks to engage their perspectives in all of its activities. The three-day conference focuses on collaboration in research and higher education, fostering research partnerships and increasing research and faculty mobility amongst the countries and institutions.

Next year's forum will take place at Northern Arctic Federal University, Arkhangelsk, Russia.

>>For more about UArctic and to view the UArctic Rectors' Forum 2012 Declaration (draft) see: uarctic.org/
>>See more on Arctic Science Partnership at: asp-net.org/



Photos by Mike Latschislaw

Top: President David Barnard welcomes attendees to the UArctic Rectors' Forum. Below: Lars Kullerud, president, University of the Arctic, in his opening remarks.