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4-9-2012

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Recommended Citation

University Relations, "Undergraduate Research Symposium to showcase student achievement" (2012).
Campus News Archive. 466.
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Undergraduate Research Symposium to showcase student achievement

Summary: The Undergraduate Research Symposium is Saturday, April 21, 2012.

(April 9, 2012)-On Saturday, April 21 2012, University of Minnesota, Morris students will have the opportunity to present work that has been months—in some cases years—in the making at the 12th annual Undergraduate Research Symposium (URS). The public is invited to attend the free event that celebrates the variety and quality of student scholarly achievement by providing a venue for students to present research and creative work to and perform art for an audience of peers, faculty, family, and community members.

A symposium at the undergraduate level is an unusual and important event. “I am always impressed by the breadth and depth of UMM student scholarly activities,” says Gordon McIntosh, professor of physics and URS coordinator. “In my opinion, independent student research represents one of the highest achievements of our students. It requires the development of an internal authority on a subject that is not possible through coursework. Developing such authority indicates the maturation of the scholar. The URS presents and celebrates the intellectual development of UMM students.”

Ruth Potter '12, Long Prairie, and Latysha Pankratz '12, Butte, Montana, are two such students, eager to share their learning with fellow students and the public.

Potter, a biology major, has been working on a joint project with Professor Peter Wyckoff and fellow student Sonja Smidt on the effects of climate change on Minnesota's forests.

“In summer 2011, I was part of a team that surveyed and collected tree core data from six separate sites across central Minnesota,” says Potter. “Over the fall, Smidt and I counted and measured tree rings and cross dated data from three of these sites that span a moisture and temperature gradient approximately equal to predicted climate change for the state during the remainder of the 21st century. These data were then de-trended to isolate the low-frequency growth pattern.

“In the next century, anthropogenic (man-made) climate change will lead to warmer temperatures and changing precipitation patterns. It is important to study the impact that these changes may have on native species and how our local ecosystem will change in the coming century,” says Potter. “The project Smidt and I will be presenting at the URS helps us understand how Minnesota's forests have and will evolve in the face of climate change. In a previous study by Peter Wyckoff it was shown that bur oak (*Quercus macrocarpa*) trees in Minnesota have responded to recent climate change by becoming more tolerant to drought.”

Latysha Pankratz, a geology major, will also present her findings on the effects of climate change in another part of the world—Sweden. Pankratz has conducted research on the recent changes in ice volume and geometry of Rabots Glaciär, a small glacier located in the Kebnekaise Massif of northern Sweden. In summer 2011, Pankratz took a detailed GPS survey designed to measure ice surface elevations and the ice margin of the glacier this data was then used to create a contour map of the glacier's surface via computer software. The map was used to compare the 2011 ice surface with data obtained from a similar survey conducted in 2003 by Professor Keith Brugger and former UMM students. With this

data, Pankratz was able to calculate the volume and area loss, and determine the retreat of the glacier over the past eight years.

“Long term studies of glaciers are relatively rare, especially in the Arctic, yet glacier behavior is one of the best indicators of climate change available,” says Pankratz. “Professor Brugger has monitored the glacier's response for three decades and my results add to that observational database. With the ever increasing interest in global climate change, I hope my research may also somehow contribute to a better understanding of both the long and short term effects of global climate change on glacier behavior.”

Both Potter and Pankratz appreciate the chance to share the fruits of their investigations, which, at the undergraduate level, is a rare opportunity.

“Presenting my project at the URS is a very exciting opportunity, and I look forward to contributing to something bigger than myself (with my work),” says Pankratz. “I hope to encourage other students to pursue their interests at UMM, to be involved in activities outside of their required coursework, and to stress the importance of active research at the university.”

“Research is more fun when you get to share your results with your peers,” says Potter, “and getting to see what other students have been working on is a great experience. The URS provides a place for students who have been going above and beyond what is required to get the recognition they deserve.”

For more information about the URS, including schedules, go to morris.umn.edu/urs/

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