



ROCKY MOUNTAIN OUTLOOK

CRSI speakers' series features U.S., European mountain snow studies

By Lynn Martel - Rocky Mountain Outlook

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The Canadian Rockies Snow and Ice Initiative (CRSI) will host a double header for the fourth event of its speakers' series taking place at Canmore Collegiate High School, Wednesday, March 24.

Dr. Matthias Bernhardt, assistant professor from the department of geography at

Munich's Ludwig-Maximilians-University will share a presentation on research being conducted on snow and glaciers in the European Alps. A geographer and hydrologist, Bernhardt's work focuses on developing, testing and applying hydrological models of snow cover and alpine hydrology in the upper Danube catchment in Germany's Berchtesgaden National Park.

Danny Marks, a research hydrologist with the U.S. Department of Agriculture based at the Northwest Watershed Research Center (NWRC) in Boise, Idaho focuses his work on snow physics and snow hydrology. He is responsible for the cold regions hydrology program at the Reynolds Creek Experimental Watershed (RCEW) in Idaho's Owyhee Mountains.

Both said they are enthusiastic about being invited to present at the CRSI speakers' series, and also to collaborate with Canmore-based Dr. John Pomeroy, head of the University of Saskatchewan's Centre for Hydrology.

"I am very excited to come over to Canmore," Bernhardt said. "I think it is a big honour and an outstanding chance to come to Canmore and talk about my work."

Bernhardt said he was looking forward to presenting his talk before an interested audience – previous CRSI event have been well attended with audiences of 50 to 90 people, many of whom have engaged the speakers in dynamic and informative question and answer sessions.

Ultimately, the speakers find value in sharing information and findings with the public and with Pomeroy, and in learning and comparing the realities of snow cover and stream hydrology from their

geographical regions with conditions in the Canadian Rockies.

"I am very happy that I can talk in front

of interested people and outstanding

experts like John Pomeroy and

Danny Marks," Bernhardt said. "(While in Canmore) we will do some comparisons

for finding out which characteristics of our test sites are similar and which ones are different. The findings will help us to find to a better understanding of alpine catchments. Furthermore, we will compare methods and models which we are using."

Marks said he too appreciated the

opportunity to compare findings from his research sites in the snow dominated mountains of Idaho,


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Oregon, Utah, Colorado, California and Washington with the research Pomeroy and his team are conducting at Marmot Creek in Kananaskis and other Rockies sites. Having collaborated with Pomeroy on research projects at Lake O'Hara, Wolf Creek and Marmot Creek, Marks said he was also working with Pomeroy on a publication.

With many similarities and connections between the snowy alpine terrain of Western Canada and the U.S. Northwest, Marks said the effects a changing climate will have on seasonal stream flows generated by winter snows will be shared on both sides of the border.

"Much of the 'snow-zone' in the U.S. and Canada is climatically close to the transition between rain and snow and global warming is likely to accelerate this transition," Marks said. "The consequences to ecosystems and water supplies will be substantial."

While the scientists find they have much to share and compare in regards to the findings of their research projects, they also share other similarities, including the inability to access their remote study sites with adequate frequency.

"We access our site by ski during winter and we have to walk during summer - bicycles are unfortunately forbidden because of the National Park status of the area," Bernhardt said. "We have to prepare a lot of our measurements in summer. We have done field campaigns in winter, measuring snow depth and density. The most dangerous thing within our area are avalanches, most of the area is not accessible during winter. Hence, we are limited to a few test sites in winter. It is hard to install equipment where we need it - at crests, at the base of faces and so on."

In addition to logistical challenges of gathering data, they also share the challenges of not having sufficient long-term data to help them thoroughly understand their findings, not to mention the challenges of continuously trying to secure adequate funding to support their work.

"The biggest challenges (we face) are limited long time-series - more than 10 years - of quality data from field sites," Marks said. "I want to increase the interest in and funding for snow and alpine hydrology and mountain science and research in general within our universities and science agencies."

No matter their country or home regions, the scientists also share a professed love for mountain terrain, the knowledge they gain from their research projects and the value those findings have toward knowing from where our crucial water resources originate and how they are responding to climactic changes.

"I like the nature and I don't like to do the same thing every day," Bernhardt said. "And I like the other scientists; most of them are extremely likeable and funny people."

The CRSI Speakers Series presentation takes place at CCHS Wednesday, March 24, at 7 p.m. Admission is free, refreshments will be served afterward and questions are welcome.

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