

Mount A's gone *MAD*

The Mount Allison Dendrochronology Laboratory, affectionately known as the MAD Lab, had its official opening in January. The lab is the only one of its kind in Atlantic Canada and helps maintain Canada's position as one of the leaders in climate change investigations. Dr. Colin Laroque, of the department of geography, heads up the lab, working with colleague Dr. André Robichaud and a team of Mount Allison geography students.

The techniques used at the MAD Lab allow research into other important issues, many of which are pursued by students on Laroque's team. Fourth-year geography student Lanna Campbell is completing an analysis of the habitat of the endangered pine marten in an area of old-growth forest just outside Newfoundland's Gros Morne National Park. Lanna is one of the recipients of this year's Royal Canadian Geographical Society's research grants and was recently featured in *Canadian Geographic* magazine. Student Zachary Vanthournout is trying to establish a connection between the ring patterns of wind-affected trees and local wind data, research that will have commercial applications for wind-energy power production. Mount Allison alumna Monik Richard, now doing her master's at Acadia University, is using the lab for her work on turtles. Richard is using principles of dendrochronology to study the rings on the belly of the Blanding turtle, an endangered species in Nova Scotia.

Working in the Maritimes, Laroque and his students face a unique



problem. Because there has been extensive logging throughout the region, most living trees are too young for Laroque's purposes. He points out, "There are no 800-year-old trees and very few 300-year-old trees left in the area." Well, there may not be old trees, but there *are* old buildings, many of which have beams with the bark still on them. A building constructed in 1840 with lumber from a 200-year-old tree contains a record of the climate from 1640 to 1840. The idea to pursue the record locked in these structures is one of the innovations that makes the MAD Lab one of Canada's leading contributors to dendrochronological research.

The owners of these old buildings also benefit, as the lab provides accurate dating (to within a year) and other information about the structures. In contrast, radiocarbon dating is accurate to within only 25 to 50 years. Laroque and his team have dated a number of buildings, including the Campbell Carriage Factory in Sackville, NB, and Doucet House in Rustico, PEI.

MAD FACT SHEET

Composed by Dr. Colin Laroque, department of geography, Mount Allison University

Dendrochronology:

- is the study of tree rings, and allows one to travel back in time. Using core samples of both living and deceased trees, we are able to gain insight into past climates, past glacier activity, past ecosystem dynamics, and even past human activities over hundreds of years.

- can also be used to date historic structures that are important to the natural history of a region. By determining a more precise date of construction significant historical questions can be answered.

Mount Allison's Dendrochronology Lab (MAD Lab):

- is the only dendrochronology lab in Atlantic Canada formed to investigate tree rings.

- is fully equipped with the latest technology in dendro including a Nikon SMZ800 continuous zoom 63 power microscope hooked to a monitor via a Nikon CoolPix 4500 digital camera.

- offers opportunities for students to become involved in tree-ring research and develop research projects with the help of the lab resources, regardless of students' background and experience.

Mount A's *MAD* scientists *continued*



Third-year student Nigel Selig is conducting award-winning research with the help of Mount A's MAD Lab.



award since its inception in 1984. The Atlantic Geoscience Society (AGS), which sponsors the competition, has given this prize predominantly to students working on their doctorates or master's degrees.

AGS members include earth scientists from universities, government, and the mining, petroleum, and offshore exploration industries in Atlantic Canada. The organization shares current research and information about the Earth and earth sciences with both specialists and the general public.

Selig presented work that he carried out with Dr. Colin Laroque and Dr. André Robichaud of the geography department on a dendroarchaeological investigation at the Campbell Carriage Factory in Sackville. In his presentation he explained the basic methods of dendroarchaeology and how he and his colleagues are trying to solve the

mystery of when the museum was originally constructed.

He says, "This was the first time I have presented in front of scientists and academics. I had no expectations of getting an award but I thought it would be an excellent experience. I was there to represent Mount Allison



Dr. Colin Laroque in the MAD Lab with tree stump slices.

and the MAD Lab and present our joint work. It was great because I feel we all won." Selig, who graduates next year, is not sure what he wants to do in the future. He is thinking about continuing his studies by doing a master's in geography or a bachelor of education.

Dr. Laroque said, "Nigel did an exceptional job. He represented the University very well and this special recognition is well deserved." Three other students from the Mount Allison Dendrochronology Lab also presented papers at the conference.

Mount Allison student wins Rupert H. MacNeill Award

Geography student Nigel Selig from Bridgewater, NS, has won the Rupert H. MacNeill Award for best student paper at the 31st annual Atlantic Geoscience Conference in Saint John. His win is particularly significant because, according to the judges, Selig is the first undergraduate student to win the



Geography and environmental studies student Lanna Campbell was featured in Canadian Geographic magazine for her research on Newfoundland's only remaining old-growth forest. Lanna used the MAD Lab facilities to help analyze her findings. She is one of the recipients of this year's Royal Canadian Geographical Society's research grants.