

Bringing Research to LIFE

In Brief

Fish for thought

Dr. John Geoffrey Eales, biological sciences, distinguished professor emeritus, was recognized at the 6th International Symposium on Fish Endocrinology with the Lifetime Achievement Award in Fish Endocrinology. The award recognizes a number of distinguished fish endocrinologists each year who have retired.

Geoff Eales has been a dominant force in fish endocrinology for more than 30 years. His specialty is in the field of thyroid endocrinology in fish. The rainbow trout is his favourite animal model, although he has also worked on other fish species including agnathans and cartilaginous fishes. His work has provided clarity on the role of thyroid hormones in fish physiology and has set the standard for investigations in comparative endocrinology.

Quirks and Quarks

For a little something quirky, check out CBC Radio's Quirks & Quarks archive of the June 14, 2008 show. It was taped in Winnipeg and featured seven University of Manitoba researchers who answered questions sent in by avid listeners. Featured professors were Linda Wilson (psychology), Alison Elliot (biochemistry & medical genetics), Phil Hultin (chemistry), Martin Scanlon (food science), John Page (physics), Susan Arntfield (food science), and Janine Johnston (ophthalmology). Questions ranged from why cats see so well in the dark to what a loaf of bread would look like if baked in zero gravity.

<http://www.cbc.ca/quirks/archives/07-08/jun14.html>

Upcoming

New Faculty Orientation Animal Care and Use Workshops

Tuesday, Sept. 4, 2008
12 pm - 1 pm

Brodie Centre,
Bannatyne Campus

Wednesday, Sept. 5, 2008
12 pm - 1 pm

Helen Glass Centre,
Fort Garry Campus

To register, please contact Denise Borowski at (204) 789-3960 or e-mail borowski@cc.umanitoba.ca

Studying an ancient catastrophe

BY SEAN MOORE
Research Communications Officer

Between 13,000 and 8,000 years ago, or thereabouts, the world's largest lake played an integral part in a catastrophe that changed the world, but what, exactly, was its role?

The body of water was Glacial Lake Agassiz, and to put it in perspective it was larger than present day Hudson Bay and at some stages in its life it covered what is now Winnipeg in 200 meters of water, which is about the height of two Richardson Buildings.

For many people, the 2008 lake season is in its twilight days, but lake season never ends for Geological Sciences Professor James Teller because he has been studying this lake for the past 30 years.

"People don't think much about what happened in flat old Manitoba, but when they learn about giant Lake Agassiz they realize how important that lake was to past climate and early human history of the mid-continent, and to past ocean circulation and global climate change," he said.

Teller researches past climate and hydrological changes, using sedimentary records from lakes as a guide. His research primarily focuses on Lake Agassiz; its birth, death, and its outbursts in between.

"It's a formidable undertaking because of the complexity of the lake's history," Teller said.

"Spatially it's huge and you have roughly 5,000 years of history to cover. In addition, areas covered by the lake changed throughout time, and if you drill a hole at one spot, what you find may not be the same as what you will at another. So there's a lot of puzzle pieces and they don't all fit perfectly yet, but we're working on that."

Teller was the first to publish that overflow from Lake Agassiz was periodically catastrophic. His eureka moment came in 1980 when he spent



Geological scientist James Teller shows a map of Lake Agassiz, a lake he's been studying for 30 years. Photo by Sean Moore

a field season in the Thunder Bay region.

The fire season was serendipitously harsh that year and "we saw acres of giant boulders and deeply eroded bedrock that led me to conclude that there had been a gigantic flush of water across that area from glacial Lake Agassiz into the Great Lakes."

Then, in 1989, at the urging of oceanographers from Columbia University and the University of California, he co-authored a paper for the journal *Nature* describing, for the first time, how 10,000 km³ of water burst from Lake Agassiz into Lake Superior near Thunder Bay and spilled into the Atlantic Ocean.

Importantly, this flood coincided with the advent of the Younger Dryas, a 1000-year global cold snap, which began about 12,900 years ago.

"We concluded that the Thermohaline Circulation in the North Atlantic Ocean – or as it's also known, the Gulf Stream – was slowed or stopped as a result of this giant influx of fresh water from Lake Agassiz, impacting on ocean circulation throughout the world," Teller said.

As would be the case today if the warm Gulf Stream waters stopped flowing into arctic latitudes, there was an abrupt cooling of many degrees around the North Atlantic Ocean in

Europe, Greenland, and Maritime Canada that lasted until Lake Agassiz stopped overflowing into the North Atlantic.

After this paper came out, climate modelers saw how climate changes could be linked to a single dramatic event, and now they are asking what would happen if Antarctica or Greenland suddenly experienced a catastrophic melt.

To answer such questions though, modelers need a better idea of the timing of the flood bursts and their volumes, and Teller is trying to provide that information.

In his quest for answers though, he's found a new avenue to explore. About the time the Younger Dryas cooling period occurred, a comet seems to have collided with the Pleistocene ice sheet that dammed Lake Agassiz.

Evidence comes from the sedimentary record of other lakes scattered across North America, where concentrations of elements like Iridium and Helium 3, and microscopic diamonds (commonly associated with extraterrestrial events) have been found in beds dated at 12,900 years ago – a time when Lake Agassiz and many other lakes in the Canadian Prairies catastrophically drained.

Could this extraterrestrial event have triggered the Lake Agassiz outburst, which in turn induced the Younger Dryas cooling? Stay tuned.

Keselman joins another council

BY SEAN MOORE
Research Communications Officer

Joanne Keselman, Vice-President (Research) at the University of Manitoba was recently appointed to the Social Sciences and Humanities Research Council of Canada (SSHRC).

The announcement was made in May by the Honourable Jim Prentice, Minister of Industry and Minister responsible for SSHRC, an independent federal government agency that funds university-based research and graduate training.

Just last October her seven-year term at the Natural Sciences and Engineering Research Council of Canada (NSERC),

where she served as Vice-President, ended.

As Minister Prentice said in a release, "Her years of expertise in research administration will make a strong contribution to the Council as we continue to promote and support research in the social sciences and humanities."

Keselman also sits on a variety of other boards. She is a member of the Premier of Manitoba's Economic Advisory Council, a member of the board of directors of Destination Winnipeg, ISIS Canada, ArcticNet, and the International Centre of Infectious Diseases.

Currently, each federal granting council has a University of Manitoba



Submitted Photo
Joanne Keselman, Vice-President (Research)

faculty member on its board. James Blatz, civil engineering, is a council member for NSERC and Harvey Chochinov, psychiatry, is on the council for the Canadian Institutes of Health Research (CIHR).

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