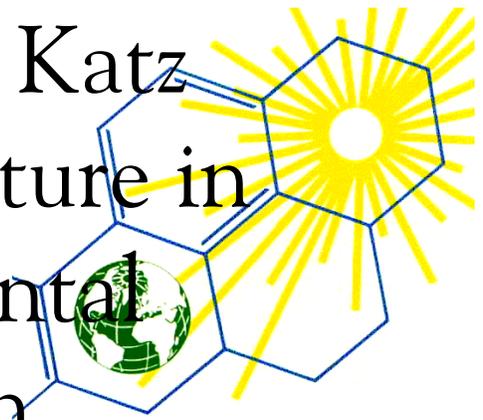


2005 Morris Katz
Memorial Lecture in
Environmental
Research



Professor John P. Smol

Paleoecological Environmental Assessment and Research Lab
Department of Biology, Queen's University

**Warnings from Lake Mud: Long-term perspectives
on climatic and environmental change**

Wednesday, May 25, 2005
2:30 p.m.

York University
Senate Chamber, N940 Ross Bldg.
4700 Keele Street, Toronto

Centre for Atmospheric Chemistry



Abstract

Interest in climate change research has taken on new relevance with the realization that human activities, such as the accelerated release of the so-called greenhouse gases, are altering the thermal properties of our atmosphere. Important social, economic, and scientific questions include: Is climate changing? If so, can these changes be related to human activities? Are episodes of extreme weather, such as droughts, increasing in frequency? Long-term meteorological data, on broad spatial and temporal scales, are needed to answer these questions. Unfortunately, such data were never gathered and so indirect proxy methods must be used to infer past climatic trends. Fortunately, aquatic systems archive a tremendously important library of information of past changes in their sediments. For example, a large number of organisms leave fossils in lake muds, which paleolimnologists can then use to track past environmental conditions. These studies have provided important insights into the natural modes of climate change, have determined the frequency of extreme climatic events, and have tracked the influence of human activities on our planet's ecosystems. This lecture will summarize some recent studies that have documented marked climatic variability that is outside the range captured by the instrumental record, and other proxy data that have a strong bearing on sustainability of human societies. As arctic ecosystems are often the first to show signs of environmental change, and do so to the greatest degree, examples from polar regions will be highlighted. Only with such long-term perspective can we understand natural climatic variability and the potential influences of human activities on climate, and thereby increase our ability to understand future climate.

Biographical Sketch

Professor John Smol FRSC, and holder of the Canada Research Chair in Environmental Change, is the founding editor of the *Journal of Paleolimnology*. John co-directs the Paleoeological Environmental Assessment and Research Laboratory (PEARL) at Queen's University, a group of about 30 paleolimnologists working throughout the world on a variety of limnological and paleoecological problems. John has over 300 journal publications and book chapters to his credit. He has edited and authored 14 books, including one textbook.

PEARL's paleolimnological work was used extensively in the acid rain debates, and John received a citation from the US government for "outstanding contributions" to the NAPAP program. John was awarded an N.S.E.R.C. E.W.R. Steacie

Memorial Fellowship in 1990. In 1992 he was awarded the Botanical Society of America Darbaker Prize, and in 1993 John, along with his lab, was presented with the North American Lake Management Society (NALMS) Research Award. In 1993 he was also awarded the National Research Council's Steacie Prize, as Canada's most outstanding young scientist or engineer. In 1994, he received an award from the Atomic Energy of Canada, Ltd., and was presented with the Queen's University Prize for Excellence in Research. Other recent awards include the 1995 Rigler Prize from the Society of Canadian Limnologists and the Canada Council Killam Fellowship (1995-1997). In 1996, he was elected as a fellow of the Royal Society of Canada, Academy of Sciences, and in 1997 he received the University of Helsinki Award Medal, as well as the Geological Association of Canada's (GAC) Past-President's Medal for outstanding contributions to the geosciences. The GAC also elected him as one of their Distinguished Fellows. In 1998 and 2001, he was chosen to receive the Best Professor Award for excellence in undergraduate teaching by the Queen's Biology DSC, and in 2000 he received the W.T Barnes Teaching Excellence Award. In 1999 he was awarded the Turku Academia Medal, the Canada Research Chair in Environmental Change in 2000, and in 2001 he was presented with the Miroslaw Romanowski Medal from the Royal Society of Canada for contributions to the resolution of scientific aspects of environmental problems. In 2002, he was granted an Ontario Distinguished Researcher Award (ODRA). St Francis Xavier University conferred John with the honorary degree of Doctor of Laws (LLD) in June 2003, in recognition of his work on aquatic ecology and environmental change. In November 2003, John was presented with the NSERC Award for Excellence. In December 2004, John was awarded the NSERC Gerhard Herzberg Gold Medal, as Canada's top scientist or engineer.

The Lectureship Fund

The Morris Katz Lectureship was made possible by the establishment of an Endowment Fund created through contributions from his family, his friends, his colleagues, private companies, universities and government. It is intended that this lectureship become self sustaining. Major contributions in support of this year's lecture have been made by:

The Centre for Atmospheric Chemistry
and
The Ontario Ministry of the Environment

If you share in Morris Katz' enthusiasm and commitment to having a cleaner environment, please make a contribution to support this ongoing educational activity. Send your contribution in care of: The Morris Katz Memorial Lectureship, Centre for Atmospheric Chemistry, York University, 4700 Keele Street, Toronto, Ontario, M3J 1P3 Canada.

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