

CHRIS BURN

CAG Award for Scholarly Distinction in Geography

The substance of Dr. Burn's research is in the field of geocryology: the study of frozen rock, soils and ground; the origin, historical development, and conditions of existence of frozen strata in the Earth's crust and processes and phenomena that occur in freezing, frozen and thawing ground. Russia, Canada and the USA are the leading countries in this field. The late Ross Mackay (UBC) and Hugh French (Ottawa) have been among the world's leaders in geocryology and it is widely acknowledged by members of our field, myself included, that Michel Allard (UQAM) and Chris Burn have inherited their mantles.



Dr. Burn has provided insight in the following sub-fields of geocryology: permafrost ground temperature; snow cover influence on ground temperature, talik development (pockets of unfrozen ground within permafrost), tundra lakes, forest fire effects on permafrost, palaeogeography, recent climate warming, active layer and near surface permafrost, frost blisters, ice wedges, ice wedge polygons, thermokarst lakes and retrogressive thaw slumps. The field conditions for this research are challenging, the processes being investigated are slow, and the results take a long time to process. It is thus especially remarkable to see Dr. Burn's high level of productivity.

This output has been made possible by a truly unique record of fieldwork in the North: he has notched 25 months of Northern winter fieldwork and over 85 months of summer field experience since 1982. Only Ross Mackay, Dr. Burn's closest field collaborator among modern Canadian arctic scientists, has spent more time in the field in the Canadian Arctic.

Dr. Burn has received numerous honours, among which the Martin Bergmann Medal and the Camsell Medal, both of the Royal Canadian Geographical Society (RCGS), the Canadian Polar Medal and the Presidency of the International Permafrost Association are the most outstanding. His publication record is stellar and his citations in Google Scholar have exceeded 6,700 (10/01/2023). He is in constant demand for papers and lectures inside Canada and internationally, including the John Wiley Lecture, which is the most prestigious CAG lecture; similarly, he has given the Wiley Lecture of the UK Quaternary Association, the Camsell Lecture of the Yellowknife Geoscience Forum and the Mackay Lecture of the Canadian Permafrost Association. His research grants and awards from external sources have exceeded \$6M over 40 years. He has made five contributions to major public decision-making bodies in the Canadian Arctic during the past two decades, especially as advisor on the stability of the Inuvik-Tuktoyaktuk Highway (2012-13), as intervener to the National Energy Board (2003-10) and as expert witness to the Senate of Canada Committee on the future of the Arctic. These are just the highlights of an exceptional scholarly and public service record.

In 2017, Dr. Burn was appointed a Chancellor's Professor at Carleton University and, in the following year, he was recognized with a DSc honoris causa by the University of Durham in the

UK, of which he is an alumnus. In each case, this is the highest academic recognition achievable from his own University.

On the graduate teaching front, Dr. Burn has supervised 30 master's theses (six in progress), seven doctoral theses (two in progress), four postdoctoral fellows, and three research associates. He was the founding supervisor of the Interdisciplinary Graduate Program in Northern Studies, the first program of its kind in Canada. A significant portion of its alumni and current students are Northern residents who proudly live, study and work in the region. He has also provided eight short courses to build capacity in permafrost engineering for approximately 150 engineers who lacked specific geotechnical expertise, even while already practising in Yukon, Northwest Territories, and Québec.

Dr. Burn's illustrious research record continues to be brilliantly embellished. The aspect of his record that has materially improved since I submitted his nomination in 2021 is his work in collaboration with Indigenous communities and his writings on the social dimensions of permafrost in Canada's North. The awards of the Camsell and Bergmann medals by the RCGS have confirmed the high recognition that Dr. Burn deserves in his role as a leading Canadian public intellectual. He is, in my view, the finest geocryologist – together with Michel Allard – in Canada right now and is among the very best physical geographers in this country and the world.