Chris Burn held the NSERC Northern Research Chair in Permafrost in the Yukon and Northwest Territories at the Department of Geography and Environmental Studies, Carleton University 2002-2012. The emphasis of his research program is on the response of permafrost to surface disturbances, including climate change. He has concentrated his effort in the Mayo area, central Yukon, and in the western Arctic. He strives to describe the magnitude and rate of surface terrestrial processes, and to provide numerical or analytical solutions that reproduce ground behaviour.

His research program is distinctive in the extent of collaboration with northern agencies. At present the emphasis is with the Departments of Transportation in Yukon and NWT. He has led development of an interdisciplinary Master program in Northern Studies at Carleton, which will begin in September 2017.

Chris has published 160 articles relating to environmental conditions in northwest Canada, mostly concerning permafrost. He was involved in several public hearings of the National Energy Board and Joint Review Panel for the Mackenzie Gas Project, as part of INAC's review team (2003-10). He worked for the EIRB in the review of the Inuvik-Tuktoyaktuk Highway (2012-13). He was co-Chair of Transport Canada's network of Expertise in Northern Transportation Infrastructure Research (2011-13).