MEMBER COUNTRY: **CANADA**

National Report to SCAR for year: 2011–2012

Activity	Contact Name	Address	Telephone	Fax	Email	web site
National SCAR Committee						
Canadian Committee on Antarctic Research		Suite 1710, 360 Albert Street, Ottawa, Ontario, K1R 7X7, Canada	[1](613)943-8605	[1](613)943-8607	mail@polarcom.gc.ca	www.polarcom.gc.ca
	Prof. Marianne S.V. Douglas	CCAR Chair, Director, Canadian Circumpolar Institute, University of Alberta, 1-37 Pembina Hall, Edmonton, Alberta T6G 2E1, Canada	[1](780)492-0055	[1](780)492-1153	marianne.douglas@ualberta.ca	www.uofaweb.ualberta.ca/polar
	C. Simon L. Ommanney	CCAR Secretary, 56 Spinney Road, P.O. Box 730, R.R. #1, Glenwood, Yarmouth County, Nova Scotia B0W 1W0, Canada	[1](902)643-2527		simon.ommanney@ns.sympatic	
SCAR Delegates						
1) Delegate	Dr David J. Scott	Executive Director, Canadian Polar Commission, Suite 1710, Constitution Square, 360 Albert Street, Ottawa, Ontario, K1R 7X7, Canada	[1](613)943-8605	[1](613)943-8607	davidj.scott@polarcom.gc.ca	www.polarcom.gc.ca
2) Alternate Delegate	C. Simon L. Ommanney	Secretary, Canadian Committee on Antarctic Research, 27 Glen Davis Crescent, Toronto, Ontario, M4E 1X6, Canada	[1](902)643-2527		simon.ommanney@ns.sympatic	
Standing Scientific Groups						
Life Sciences						
1) Chief Officer	Dr Kathleen Conlan	Canadian Museum of Nature, Life Sciences, P.O. Box 3443, Station D, Ottawa, Ontario, K1P 6P4, Canada	[1](613)364-4063	[1](613)364-4027	kconlan@mus-nature.ca	www.nature.ca
2) Member	Prof. Marianne S.V. Douglas	Director, Canadian Circumpolar Institute, University of Alberta, 1-37 Pembina Hall, Edmonton, Alberta T6G 2E1, Canada	[1](780)492-0055	[1](780)492-1153	marianne.douglas@ualberta.ca	www.uofaweb.ualberta.ca/polar
3)						
4)						
Geosciences						
1) Member	Prof. Wayne H. Pollard	Department of Geography, McGill University, Burnside Hall, 805 Sherbrooke Street W., Montréal, Quebec, H3A 2K6, Canada	[1](514)398-4454	[1](514)398-7437	wayne.pollard@mcgill.ca	www.geog.mcgill.ca/mag2/pollard.htm
2) Member	Dr Peter L. Pulsifer	Geomatics and Cartographic Research Centre, Carleton University and National Snow and Ice Data Center, 449 UCB, University of Colorado, Boulder, CO 80309, USA	[1](613)620-7195	[1](613)249-7067	pulsifer@nsidc.org	

3)						
4)						
Physical Sciences						
1) Member	Dr Thomas S. James	Geological Survey of Canada, Natural Resources Canada, 9860 West Saanich Road, P.O. Box 6000, Sidney, British Columbia, V8L 4B2, Canada	[1](250)363-6403	[1](250)363-6565	tjames@nrcan.gc.ca	www.pgc.nrcan.gc.ca/geodyn/people/tj_home.htm
2)						
3)						
4)						

Activity	Contact Name	Address	Telephone	Fax	Email	web site
Scientific Research Program						
ACE						
1)						
2)						
3)						
4)						
AGCS						
1)						
2)						
3)						
4)						
EBA						
1) Ex Officio	Dr Kathleen Conlan	Canadian Museum of Nature, Life Sciences, P.O. Box 3443, Station D, Ottawa, Ontario, K1P 6P4, Canada	[1](613)364-4063	[1](613)364-4027	kconlan@mus-nature.ca	www.nature.ca
2)						
3)						
4)						
ICESTAR						
1) TAG D	Prof. Eric Donovan	Department of Physics and Astronomy, University of Calgary, Calgary, Alberta T2N 1N4, Canada	[1](403)220-5385	[1](403)282-5016	edonovan@ucalgary.ca	http://phas.ucalgary.ca/profiles/eric-donovan
2)						
3)						
4)						
SALE						
1)						
2)						
3)						
4)						
AAA (2010-)						
1) Working Group B, Vice-chair	Dr Eric Steinbring	Canadian Gemini Office, Dominion Astrophysical Observatory, National Research Council Canada, 5071 West Saanich Road, Victoria, British Columbia V9E 2E7, Canada	[1](250)363-3452	[1](250)363-0045	eric.steinbring@nrc-cnrc.gc.ca	
2)						
3)						
4)						

Activity	Contact Name	Address	Telephone	Fax	Email	web site
ACTION GROUPS						
1) Antarctic Fuel Spills (AGAFS)	Dr Kathleen Conlan	Canadian Museum of Nature, Life Sciences, P.O. Box 3443, Station D, Ottawa, Ontario, K1P 6P4, Canada	[1](613)364-4063	[1](613)364-4027	kconlan@mus-nature.ca	www.nature.ca
2) WCRP/SCAR IPAB Co-ordinato	Dr Christian Haas	Department Earth and Atmospheric Sciences, University of Alberta, Edmonton, Alberta, T6G 2E3, Canada	[1](780)492-8171	[1](780)492-2030	chaas@ualberta.ca	http://easweb.eas.ualberta.ca/index.php?page=14&person=haasc
3) SERCE PPG	Dr Thomas S. James	Geological Survey of Canada, Natural Resources Canada, 9860 West Saanich Road, P.O. Box 6000, Sidney, British Columbia, V8L 4B2, Canada	[1](250)363-6403	[1](250)363-6565	tjames@nrcan.gc.ca	www.pgc.nrcan.gc.ca/geodyn/people/tj_home.htm
4) SALE Code of Conduct, Chair	Prof. Warwick F. Vincent	Département de biologie, Université Laval, 1045 avenue de la Médecine, Québec, Québec G1V 0A6, Canada	[1](418)656-2131x	[1](418)656-2043	warwick.vincent@bio.ulaval.ca	www.cen.ulaval.ca/wvincent.html
5) IPICS Steering Committee	Dr David A. Fisher	National Glaciology Program, Geological Survey of Canada, Natural Resources Canada, 562 Booth Street, Ottawa, Ontario K1A 0E4, Canada	[1](613)996-7623	[1](613)996-5448	david.fisher@nrcan-rncan.gc.ca	http://gsc.nrcan.gc.ca/glaciology/national/contact_e.php
6) AntETR	Dr Irene R. Schloss	Institut des sciences de la mer de Rimouski, Université du Québec à Rimouski, C.P. 3300, 310, allée des Ursulines, Rimouski, Québec G5L 3A1, Canada	[1](418)723-1986x	[1](418)724-1842	irene_schloss@uqar.qc.ca	http://ismer.uqar.ca/cvismer/?153/Schloss-Irene-R
7) AntETR	Dr Kathleen Conlan	Canadian Museum of Nature, Life Sciences, P.O. Box 3443, Station D, Ottawa, Ontario, K1P 6P4, Canada	[1](613)364-4063	[1](613)364-4027	kconlan@mus-nature.ca	
8) AntEco	Dr Kathleen Conlan	Canadian Museum of Nature, Life Sciences, P.O. Box 3443, Station D, Ottawa, Ontario, K1P 6P4, Canada	[1](613)364-4063	[1](613)364-4027	kconlan@mus-nature.ca	
9) GWSWF	Dr Paul Prikryl	Earth-Space Propagation, Communications Research Centre Canada, 3701 Carling Avenue, P.O. Box 11490, Station H, Ottawa Ontario K2H 8S2, Canada	[1](613)998-2068	[1](613)998-4077	paul.prikryl@crc.gc.ca	

EXPERT GROUPS						
1) GIANT	Dr Thomas S. James	Geological Survey of Canada, Natural Resources Canada, 9860 West Saanich Road, P.O. Box 6000, Sidney, British Columbia, V8L 4B2, Canada	[1](250)363-6403	[1](250)363-6565	tjames@nrcan.gc.ca	www.pgc.nrcan.gc.ca/geodyn/people/tj_home.htm
2) ANTPAS Steering Committee	Dr Charles T. Tarnocai	Research Branch (ECORC), Agriculture and Agri-Food Canada, 960 Carling Avenue, Ottawa, Ontario K1A 0C6, Canada	[1](613)759-1857	[1](613)759-1926	tarnocaict@agr.gc.ca	http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1181923002120&lang=eng
3) PPE	Prof. Wayne H. Pollard	Department of Geography, McGill University, Burnside Hall, 805 Sherbrooke Street W., Montréal, Quebec, H3A 2K6, Canada	[1](514)398-4454	[1](514)398-7437	wayne.pollard@mcgill.ca	www.geog.mcgill.ca/mag2/pollard.htm
4) PPE	Prof. Kevin J. Hall	Geography Program, University of Northern British Columbia, 3333 University Way, Prince George, British Columbia, V2N 4Z9, Canada	[1](250)960-5864	[1](250)960-6533	hall@unbc.ca	http://www.unbc.ca/geography/faculty/hall/
5) ADMAP	Dr Jacob Verhoef	Director, UNCLOS Program, Geological Survey of Canada, Natural Resources Canada,1 Challenger Drive, P.O. Box 1006, Dartmouth, Nova Scotia B2Y 4A2, Canada	[1](902)426-3448	[1](902)426-1466	jacob.verhoef@nrcan-rncan.gc.	
6) Human Biology and Medicine	Prof. Peter Suedfeld	Department of Psychology, University of British Columbia, 3533 - 2136 West Mall, Vancouver, British Columbia V6T 1Z4, Canada	[1](604)822-5713	[1](604)822-6923	psuedfeld@psych.ubc.ca	
SCADM						
1) Member	Dr Peter L. Pulsifer	Geomatics and Cartographic Research Centre, Carleton University and National Snow and Ice Data Center, 449 UCB, University of Colorado, Boulder, CO 80309, USA	[1](613)620-7195	[1](613)249-7067	pulsifer@nsidc.org	
SC-AGI						
1) Member	Dr Peter L. Pulsifer	Geomatics and Cartographic Research Centre, Carleton University and National Snow and Ice Data Center, 449 UCB, University of Colorado, Boulder, CO 80309, USA	[1](613)620-7195	[1](613)249-7067	pulsifer@nsidc.org	
2) Member	C. Simon L. Ommanney	CCAR Secretary, 56 Spinney Road, P.O. Box 730, R.R. #1, Glenwood, Yarmouth County, Nova Scotia B0W 1W0, Canada	[1](902)643-2527		simon.ommanney@ns.sympatic	

ATCM, CEP & permitting	Paul Mudroch	Marine Pollution Prevention Section, Environmental Stewardship Branch, Environment Canada, 16th Floor, 351 St. Joseph Blvd., Gatineau, Quebec K1A 0H3, Canada	[1](819)953-0663	[1](819)953-0913	antarctique-antarctic@ec.gc.ca	www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=AEB7D114-1
Antarctic Names	Heather Ross	Antarctic Working Group, Geographical Names Board of Canada, 634 – 615 Booth Street, Ottawa, Ontario K1A 0E9, Canada	[1](613)992-4136	[1](613)943-8282	heross@nrcan.gc.ca	http://geonames.nrcan.gc.ca/pdf/antarcticguidelines_e.pdf
Antarctic Map Depository	David L. Jones	William C. Wonders Map Collection, 1-55 Cameron Library, University of Alberta, Edmonton, Alberta T6G 2J8, Canada	[1](780)492-3433	[1](780)492-2721	david.jones@ualberta.ca	http://guides.library.ualberta.ca/content.php?pid=45635&sid=817949

NATIONAL ANTARCTIC DATA CENTRE
No centre yet established

SCAR DATABASE
Canada not responsible for an Antarctic database

A BRIEF SUMMARY OF SCIENTIFIC HIGHLIGHTS:

Canadian research in the Antarctic is strongly influenced by the ability of individual scientists to develop partnerships within the scientific programs of other Antarctic nations. The assistance of these national programs is greatly appreciated. Canadian work fits within the broad categories of the three Standing Scientific Committees, but is not necessarily specific to any group or project. As reflected in the attached bibliography, many Canada-based scientists have been active in the collection and analysis of Antarctic data, and publication of results, but have not necessarily reported on their current work in this annual report.

A Students-on-Ice (SOI), high-school level, expedition visited the Antarctic Peninsula between 27 December 2011 and 10 January 2012, under the leadership of Geoff Green (geoff@studentsonice.com; www.uantarctic.org). The next university-level Antarctic field courses will be offered on the SOI University Expedition that will take place from 27 December 2013 to 19 January 2014.

LIFE SCIENCES

The barcoding projects iBOL (International Barcode of Life) and MarBOL (Marine Barcode of Life) have been working with researchers from various international institutions to help with sequencing samples obtained on cruises over the years. The main facility for DNA barcoding is the Biodiversity Institute of Ontario (Dirk Steinke; dsteinke@uoguelph.ca) where some 12,000 Antarctic specimens representing about 2000 species have been sequenced (COX region of the mtDNA). Further progress is now jeopardized by a serious cut back in funding and the change from free sequencing to a cost-recovery model.

Jack Terhune, of the University of New Brunswick (terhune@unbsj.ca), is continuing studies of Weddell seal (*Leptonychotes weddellii*) underwater vocal behaviours using previously obtained recordings from Davis and Mawson. The focus is on background noises and masking avoidance.

Irene Schloss, with Gustavo Ferreyra, Serge Demers and Dany Dumont, of the Institut des sciences de la mer de Rimouski (ISMER) at the Université du Québec à Rimouski (irene_schloss@uqar.qc.ca), are investigating the combined effects of increased temperature and decreased salinity on marine plankton communities in Antarctic (Potter Cove) and Arctic (Cambridge Bay) coastal ecosystems The project, funded by Argentina, includes researchers from the Universities of Victoria (Diana Varela) and British Columbia (Brian Hunt), as well as Spain and Argentina.

During the austral summer 2008/09, Glenn Crossin (gtc@dal.ca), a PDF with Tony Williams at Simon Fraser University (tdwillia@sfu.ca), spent 8 months at Bird Island in South Georgia. With colleagues from the British Antarctic Survey, he conducted research on the physiology and ecology of breeding Antarctic seabirds.

Kristen Gorman (kgorman@sfu.ca), a PhD student with Tony Williams at Simon Fraser University, has investigated nutritional and physiological correlates of variation in breeding performance by *Pygoscelis* penguins west of the Antarctic Peninsula, demonstrating divergent population responses to regional climate warming. Using stable isotopes, in conjunction with field studies of nutritional condition, the relationships between diet and reproductive effort are being examined, including physiological parameters associated with nutritional condition in birds (i.e., corticosterone and immune function), as well as offspring sex allocation; suggested to be condition-dependent in other avian systems. A population genetics component is being developed using microsatellite markers to assess genetic structuring and gene flow among the penguins.

Warwick Vincent (warwick.vincent@bio.ulaval.ca), of the Centre d'études Nordiques at the Université Laval, continued his activities on environmental protection and stewardship of Antarctic microbial ecosystems. The Code of Conduct for the Exploration and Research of Subglacial Aquatic Environments (IP 33), developed by an international SCAR Action Group chaired by Warwick Vincent, was accepted at the 34th Antarctic Treaty Consultative Meeting. The Minutes recorded that the U.K. noted it had been useful in drafting its CEE (Comprehensive Environmental Evaluation) on the exploration of Subglacial Lake Ellsworth. Warwick Vincent has worked with international colleagues to develop a risk assessment of microbial contamination of Antarctic environments. With funding from IASC, he collaborated with Cynan Ellis-Evans and APECS to organize and support a young-researcher session on polar molecular microbiology, held within the Symposium on Life in Extreme Environments (CAREX) in Dublin, Ireland in 2011, that resulted in a webinar, available on the APECS website.

In February and March 2012, Steven Siciliano, of the University of Saskatchewan (steven.siciliano@usask.ca), worked with Ian Snape, of the Australian Antarctic Division (AAD), on the development of a predictive model for Antarctic terrestrial microbial biodiversity across the Windmill Islands; to identify regions of sensitivity and vulnerability to climate change and human impacts. From February to August 2011, Erin Karpinnen, an M.Sc. student, spent 6 months with the AAD preparing samples for analysis. Work continued with the development of toxicity tests and risk assessments for Antarctic sites including at the sub-Antarctic Macquarie (Macca) Island. In September 2010, Siciliano was invited to the Australian Eastern Antarctic Science Policy 2011–2020 planning meeting to discuss how the ability to calculate evidence-based concentrations for TPH (Total Petroleum Hydrocarbons) cleanup in Antarctic soils could be incorporated into the forthcoming Antarctic Treaty negotiations. In 2012, Tristrom Winsley, a PDF, will be working with the AAD to finalize a model to predict regions of sensitivity and vulnerability to climate change.

PHYSICAL SCIENCES

Nathan Gillett, of Environment Canada (nathan.gillett@ec.gc.ca), and others compared observations of stratospheric temperature and ozone change with coupled chemistry–climate model simulations using a detection and attribution analysis. 1979–2005 cooling over Antarctica was weaker than that simulated, though the influence of ozone and depleting substances and natural forcings on temperature and ozone in the lower stratosphere were both detectable.

Graeme Nott (gno@faam.ac.uk) and Thomas Duck (tom.duck@dal.ca), of Dalhousie University, have reviewed tropospheric LIDAR techniques and measurements from the polar regions, including the Antarctic. There are significant findings relating to aerosols, clouds, water vapour, and ozone, based on measurements from a LIDAR operated at the South Pole in the 1970s through to current systems throughout Antarctica and satellite-based LIDAR.

Tom McElroy (c.t.mcelroy@gmail.com), of Environment Canada, previously delivered a Brewer Ozone Spectrophotometer to the U.S. Amunsden–Scott Base and installed it there. Calibration and operation is now in the hands of Johan Booth, who works for NOAA, a partner in this project.

Nathan Gillett, of Environment Canada (nathan.gillett@ec.gc.ca), and Seok-Woo Son (McGill University) have concluded that Antarctic ozone depletion has driven a cooling and strengthening of the polar vortex in austral spring; has been associated with a strengthening and poleward shift of the midlatitude westerly winds in the Southern Hemisphere troposphere in austral summer; and has cooled the Antarctic troposphere. It has also been associated with summer trends in surface temperature over Antarctica, precipitation over the Southern Hemisphere, Southern Ocean circulation, and ocean-atmosphere fluxes of carbon dioxide over the Southern Ocean. Both radiative and dynamical mechanisms are thought to be involved .

Charles McLandress (charles@atmosp.physics.utoronto.ca) and others, from the University of Toronto, performed a study with the Canadian Middle Atmosphere Model (CMAM) to isolate the effect of the ozone hole on surface climate. It was the first study to use a chemistry–climate model coupled to an ocean, needed to assess the effect of the ozone hole on surface climate in a self-consistent way. It was found that the ozone hole has been the primary driver of past changes in summertime Southern Hemisphere high-latitude climate, and that ozone recovery over the next half-century should roughly offset the effects of climate change in that season.

Michael Sigmond, of the University of Toronto (sigmond@atmosp.physics.utoronto.ca), and others report that, over the historical period, greenhouse gas and ozone changes have contributed approximately equally to a strengthening of the Ferrell cell and the Antarctic Circumpolar Current. In the near future, ozone recovery is the dominant influence on ACC trends in the CanESM2 model.

Brad De Young, of Memorial University (bdeyoung@mun.ca), and his PDF Oleg Derzhov, is working on the Antarctic Circumpolar Current and how non-linear wave theory can explain its dynamics.

Hayley Hung, of Environment Canada (hayley.hung@ec.gc.ca), is co-investigator on a proposal to establish an air monitoring program for persistent organic pollutants (POPs) in Antarctica in coordination with the network of monitoring stations under the Arctic Council's Arctic Monitoring and Assessment Programme (AMAP). An Environment Canada-designed flowthrough air sampler, suitable for use in cold environments and requiring no direct power supply during sampling, is currently deployed at Casey Station to measure atmospheric POPs.

Nathan Gillett, of Environment Canada (nathan.gillett@ec.gc.ca), and others, using the Canadian Earth System Model CanESM2, have simulated the climate response to ongoing emissions of CO_2 to 2100 followed by their complete cessation. Although global mean surface temperatures remained almost constant over the next 900 years, the Southern Hemisphere continued to warm, Antarctic sea ice experienced an ongoing decrease, and the Southern Ocean warmed strongly at intermediate depths. This suggests such warming could lead to enhanced ice-shelf melting long after carbon dioxide emissions cease.

Reza Tareghian, of the University of Manitoba (umtaregh@cc.umanitoba.ca), has applied quantile regression to analyze trends in the mean, maximum, and minimum sea-ice extent in the Antarctic. The results show a small positive trend of 2.3% per decade from 1979 through 2010. In the case of Antarctic minimum ice cover, selected quantile regressions yield slope estimates that differ from trends in the mean. Variability in Antarctic sea ice extent is higher than in the Arctic.

In November and December 2011, Christian Haas (chaas@ualberta.ca) and Justin Beckers, of the University of Alberta, were invited by New Zealand colleagues for a second survey of sub-sea-ice platelet ice in McMurdo Sound. After a very successful airborne survey in 2009, using helicopter-borne electromagnetic sounding, 2011 was focused more on in-situ measurements for calibration and validation of the airborne measurements. More that 500 km of ground-based EM data were obtained from profiles across McMurdo Sound, with regular extensive drill-hole measurements of snow, ice, and platelet-layer thicknesses to establish regional characteristics. The data were complemented with satellite radar-altimetry measurements by CryoSat and oceanographic surveys of supercooling.

Denis Lacelle, of the University of Ottawa (dlacelle@uottawa.ca), Wayne Pollard, Lyle Whyte and Jackie Goordial, of McGill University (wayne.pollard@mcgill.ca, whyte@nrs.mcgill.ca), are involved in a NASA-ASTEP and ASTID supported research project (ASTEP-IceBite) to develop an ice auger and sampling bit able to sample subsurface ice-cemented ground on Mars. As part of this project, the origin, age and habitability of ice-cemented permafrost in a Martian analogue, the ultraxerous environment of the McMurdo Dry Valleys of Antarctica, is being examined using geophysics, isotope geochemistry, microbial and numerical modelling approaches.

GEOSCIENCES

Wayne Hocking, of the University of Western Ontario (whocking@uwo.ca), is continuing studies of circulation in the upper atmosphere above Antarctica, with particular emphasis on momentum flux measurements, as well as annual and seasonal meteor flux variability, and southern polar mesosphere summer echoes. Comparisons are being made between the Argentinian radar at Rio Grande and the Brazilian one at Comandante Ferraz on King George Island.

Stefan Elieff and Sander Geophysics Limited (selieff@sgl.com) continued to participate in NASA's IceBridge campaign. Working with the Lamont-Doherty Earth Observatory, an SGL AIRGrav airborne gravity meter was installed and operated on-board the NASA DC-8. Building on data acquired in 2009 and 2010, the DC-8 surveyed key areas of Antarctica in October and November 2011. (www.ldeo.columbia.edu/res/pi/icebridge/; www.nasa.gov/mission_pages/icebridge/mission/index.html.)

Thomas James, of Natural Resources Canada(tjames@Nrcan.gc.ca), and University of Victoria M.Sc. student Andrea Darlington, are modelling geophysical constraints on Antarctic mantle viscosity.

Current and past research by Noel James, of Queen's University (james@geol.queensu.ca), and collaborators, is focused on the origin and diagenesis of cool water biogenic carbonate sediments and sedimentary rocks. The three major areas of interest are: carbonate deposition in the Southern Ocean kelp forests, particularly off Kaikura, New Zealand; carbonate sedimentology and paleodepositional environments in the Ross Sea Pleistocene sediments; and, modern Antarctic biosiliceous sponge spicule deposits.

ASTRONOMY

In November 2011, the South Pole Telescope (SPT) completed a 2,500 deg² survey of the fine angular scale Cosmic Microwave Background radiation. The data are being used to catalog the largest number of galaxy clusters discovered with the Sunyaev Zel'dovich effect and to trace cosmic history; providing new measurements to constrain Dark Energy. The survey maps are also used for a range of other astrophysics and cosmology measurements. In January 2012, a newly installed polarization-sensitive camera saw first light on the SPT, using a readout system developed, built and commissioned at McGill University. It may reveal the signature of gravity waves emitted a faction of a second after the Big Bang. Three Canadian researchers were present at the South Pole station for the installation of the new camera and readout system. The SPT was built, and is operated, by a collaboration of several universities that includes Matt Dobbs and his colleagues at McGill (mdobbs@physics.mcgill.ca).

The IceCube Neutrino Observatory, located at the South Pole and completed in December 2010, was designed, constructed and is now operated by an international collaboration consisting of approximately 220 scientists at 38 institutes. In January 2010, the University of Alberta was established as the first IceCube institute in Canada; the group originating in part from the established expertise and leadership that developed the DeepCore detector. Since 2011, the group (with Darren Grant, drg@ualberta.ca) has grown to six members, including two graduate and three undergraduates researchers. In 2011, two of them attained full IceCube collaboration status and became authors on IceCube publications. Members' roles include convener for Low-Energy working, Lead Scientist for Future Detector Upgrades, leaders of analyses in indirect Dark Matter detection, atmospheric neutrino oscillations and investigators of the potential use of in-ice detectors for measuring neutrino mass hierarchy and proton decay.