

PERSONAL DATA FORM: David G. Barber. *Ph.D.*

AFFILIATED ORGANIZATION

Centre for Earth Observation Science, Clayton H. Riddell Faculty of Environment, Earth and Resources, University of Manitoba, 474 Wallace Bldg., R3T 2N2

CONTACT INFORMATION:

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CITIZENSHIP: Canadian

PROFESSIONAL EMPLOYMENT RECORD: (1986 – Present)

2004 – present Associate Dean (Research), Faculty of Environment, University of Manitoba
2002 – present Canadian Research Chair, Arctic System Science
1999 - present Director, Centre for Earth Observation Science (CEOS), Department of
& **1994-1997** Geography, University of Manitoba, MB.
1992 – 1993 Research Manager, Global Change Program, Earth Observations Lab, Department of
Geography, University of Waterloo, ON.
1988 – 1992 Research Scientist, Marine Cryosphere Project, Earth Observations Lab, Department of
Geography, University of Waterloo, ON.
1986 – 1989 Contract Scientist, GIS and Remote Sensing Specialist, Clients: Ice Centre, Environ-
ment Canada; Manitoba Natural Resources Department; Manitoba Hydro; Fisheries
and Oceans, Winnipeg; Inland Waters Directorate, Environment Canada, MB.

EDUCATION:

Ph.D. University of Waterloo, Waterloo, Ontario, 1988-1992
M.N.R.M. (Masters in Natural Resources Management), University of Manitoba,
Winnipeg, Manitoba, 1985-1988
B.P.E. University of Manitoba, Winnipeg, Manitoba, 1978-1982

PROFESSORSHIPS:

Canada Research Chair in Arctic System Science (2003-present)
Professor of Environmental Science, University of Manitoba, Department of
Geography, 1999-present
Associate Professor, University of Manitoba, 1995-present
Assistant Professor, University of Manitoba, 1993-1995
Current Ph.D. students: 7, Total 13, Current M.Sc. students: 4, Total 14,
Current Post Docs: 2, Total 6

PUBLICATIONS:

Refereed Publications - Journals (1990-2006): 68
Refereed Publications - Books: 7
Primary authorship: 28

PEER REVIEWED PUBLICATIONS - Journals (2003-2006):

- Ehn, J.K., M. A. Granskog, T. Papakyriakou, R. Galley, and D. G. Barber. 2005. Surface albedo observations of Hudson Bay landfast sea ice during melt onset. *Annals of Glaciology*. In Press (Jan'06).
- Barber, D.G., L. Fortier and M. Byers. 2005. The Incredible Shrinking Sea Ice. *Policy Options*. 27(1):66-71.
- Langlois, A., C.J. Mundy and D. G. Barber. On the winter evolution of snow thermophysical properties over landfast first-year sea ice. *Hydrological Processes*. In Press (Dec'05).
- Carmack, E., D. Barber, J. Christensen, R. Macdonald, B. Rudels and E. Sakshaug. Climate Variability and Physical Forcing of the Food Webs and the Carbon Budget on Panarctic Shelves. *DeepSea Research*. In press (Nov'05).
- Fortier, L. P. Sirois, J. Michaud and D. G. Barber. Sea Surface temperature, sea ice concentration and the survival of Arctic cod larvae (*Borgeogadus saida*) in the Northeast Water polynya (Greenland Sea). *Canadian Journal of Fisheries and Aquatic Sciences*. In press (Oct'05).
- Yackel, J.J., D. G. Barber, T.N. Papakyriakou, and C. Breneman. First-year sea ice spring melt transitions in the Canadian Arctic Archipelago from time series SAR data, 1992-2002. *Hydrological Processes*. In Press (Aug'05).
- Yackel, J. and D. G. Barber. Towards development of a snow water equivalent algorithm for smooth landfast first-year sea ice using spaceborne synthetic aperture radar data. *Journal of Geophysical Research (Oceans)*. In Press (Aug'05).
- Lukovich, J. and D. Barber. Atmospheric controls on sea ice motion in the Southern Beaufort Sea. *Journal of Geophysical Research*. In press (Aug'05).
- Barber, D.G., and R.A. Massom. The role of sea ice in bipolar polynya processes. In. W.O. Smith and D. G. Barber. *Polynyas: Windows into Polar Oceans*. Elsevier Series in Oceanography. In press (Aug'05).
- Lukovich, J. and D. Barber. On Sea Ice Concentration Anomaly Coherence in the Southern Beaufort Sea. *Geophysical Research Letters*. In Press (April'05).
- Barber., D.G. 2005. Microwave Remote Sensing, Sea Ice and Arctic Climate Processes. *Physics in Canada*. Sept/Oct. 105-111.
- Mundy, C.J., D. Barber, and C. Michel. On the scale dependent variability of thermophysical, optical and sub-ice microalgae properties in spring season landfast first-year sea ice. 2005. *Journal of Marine Systems*. 58(2005):107-120.
- Hwang, B. and D. G. Barber. Pixel-scale evaluation of the SSM/I sea ice algorithms in the marginal ice zone during early fall freeze-up. *Hydrological Processes*. In press (March'05).
- Barber, D.G. and J. Hanesiak. 2004. Meteorological forcing of sea ice concentrations in the Southern Beaufort Sea over the period 1978 to 2001. *Journal of Geophysical Research*. 109 C06014.
- Barber, D.G. and J. Iacozza. 2004. Historical analysis of sea ice conditions in M'Clintock Channel and Gulf of Boothia, Nunavut; Implications for Ringed Seal and Polar Bear Habitat. *Arctic*. 57(1):1-14.
- DeAbreu, R.A., J. Yackel, D. Barber and M. Arkett. 2003. Operational Satellite Sensing of Arctic First Year Sea Ice Melt. *Canadian Journal of Remote Sensing*. 24:487-501.
- Barber, D., J. Iacozza, and A. Walker. 2003. On the Estimation of Snow Water Equivalent (SWE) using microwave Radiometry over First-Year Sea Ice. *Hydrological Processes*. 17(17):3503-3517.
- Cooley, P. and D.G. Barber. 2003. Remote Sensing of the Coastal Zone of Tropical Lakes using Synthetic Aperture Radar and Optical Data. *Journal of Great Lakes Research*. 29(2):62-75.

CONFERENCE AND WORKSHOP PRESENTATIONS: 87 (1993-present)

SERVICE TO SCIENTIFIC AND MANAGEMENT COMMITTEES: 31

(2000-present)

Member, Research Management Committee, ArcticNet
Theme 3 leader, ArcticNet
Member, NSERC Grant Selection Committee (1999-2003)
Member, CASES Scientific Steering Committee (2001-ongoing)
Member, Canadian Research Icebreaker Steering Committee, (2002-ongoing)
External Reviewer, Geography Dept., University of Regina (Apr '02) and University of Western Ontario (Apr '01)

FUNDING: 142 Grants for a total of \$17,428,376 (1993-present)

(Recent Funding)

Environment Canada, CRYSYS project
Manitoba Hydro, (Peatlands Project, Helicopter Support for the Ice-Plume Study, Summer Nelson River Program, Annual Mooring for the Nelson River)
Polar Continental Shelf Project (support for Churchill sea ice camp, logistics support CASES 4)
Network of Centres of Excellence (ship time funds for Theme 3)
Manitoba Centres of Excellence Fund to support Theme 3 of ArcticNet
European Space Agency (ESA) data from ENVISAT and MERIS (2003-04)
NSERC Equipment Grant (Air/Ice boat), Discovery Grant (5 years)
Canadian Space Agency (purchase of ENVISAT data)
Canadian Arctic Shelf Exchange Study (CASES) NSERC
Canadian Research Icebreaker (Capital equipment, support for ship time & access to infrastructure for research group)
ArcticNet – a Network of Centres of Excellence to study the changing Arctic
CRYSYS support from Meteorological Service of Canada (for modeling snow on sea ice)
Canada Foundation for Innovation (Chair infrastructure Award)

MAJOR INTERNATIONAL PROJECTS

Canada Research Chair 'Arctic System Science' (2002-2009)
The Agassiz Centre (2000-continuing)
ArcticNet – a Network of Centres of Excellence (2002-2009)
A Canadian Research Icebreaker (2002-2017)
The Canadian Arctic Shelf Exchange Study (CASES) (2001-2006)
Convection: Greenland Sea Convection mechanisms and Their Climate Implications (2000-2005)
National Aeronautics and Space Administration (USA) (2000-2003)
Autosub Under Ice (2001-2003)
Canadian Globe SAR program (1998-2001)
The Arctic Ice Regime Shipping System (AIRSS) (1997-2000)
National Aeronautics and Space Administration (NASA) (1994-present)
North Water Polynya Study (NOW) (1987-2001)