

# Matthew C. Peros

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Department of Environmental Studies and Geography  
Bishop's University  
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Canada

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## EDUCATION

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- **Ph.D.: University of Toronto – Physical Geography; Nov. 2005**
  - Dissertation: *Middle to late Holocene environmental change and archaeology on the north coast of central Cuba* (Supervisor: A.M. Davis)
- **M.Sc.: York University – Physical Geography; Nov. 2000**
  - Thesis: *Coastal Environments and Taino Occupation at Los Buchillones, Cuba* (Supervisor: E.G. Graham)
- **B.Sc.: University of Toronto – Archaeological Sciences; Nov. 1997**
  - Honours Thesis: *Pollen analysis of Cootes Paradise Marsh, Hamilton Harbour, Ontario, Canada* (Supervisor: J.H. McAndrews)

## POSITIONS

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| <b>July 2011 – present</b>     | <b>Tier II Canada Research Chair in Climate and Environmental Change and Associate Professor</b> , Department of Environmental Studies and Geography, Bishop's University |
| <b>October 2013 – present</b>  | <b>Professeur associé</b> , Département de géomatique appliquée, l'Université de Sherbrooke   |
| <b>December 2012 – present</b> | <b>Adjunct Professor</b> , Department of Geography, McGill University   |
| <b>Sept. 2007 – June 2010</b>  | <b>Sessional Instructor and Research Associate</b> , Carleton University, University of Ottawa, University of Toronto   |
| <b>Sept. 2005 – Aug. 2007</b>  | <b>Postdoctoral Fellow</b> , Laboratory for Paleoclimatology and Climatology, University of Ottawa  |
| <b>Sept. 1998 – Sept. 2005</b> | <b>Graduate student, course instructor, and teaching assistant</b><br>University of Toronto; York University  |
| <b>Summer 1998</b>             | <b>Research Assistant</b> , Botany Department, Royal Ontario Museum <ul style="list-style-type: none"><li>• Undertook paleobotanical analysis of lake sediments</li></ul> |
| <b>Summers 1993 – 1998</b>     | <b>Archaeological Assistant</b> , Parks Canada <ul style="list-style-type: none"><li>• Participated in the excavation of numerous prehistoric sites</li></ul>             |

## HONOURS

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- J. Warren Nystrom Award for Best Dissertation from the Association of American Geographers – 2006
- Alexander Sisson Award from the Geological Society of America for Outstanding Student Research Proposal – 2003
- L.R. Wilson Best Student Paper Award from the annual meeting of the American Association of Stratigraphic Palynologists – 2003
- William G. Dean/Ontario Graduate Scholarship in Science and Technology – 2001

## RESEARCH GRANTS

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### *Awarded*

- Bishop's University Senate Research Committee Grant (\$8000) for 2014-2015.
- PI for National Geographic Society/Waite Program "Prehistoric extinct mammal and human remains from a subaquatic cave in Cuba: a pilot project linking archaeology, paleontology, and the ancient environment" (\$15,000 USD for 2013-2014)
- PI for Canada Foundation for Innovation (Leaders Opportunity Fund) grant for new climate and environmental change research laboratory at Bishop's University (\$302,650, matched by the Government of Quebec)
- PI for NSERC Discovery Grant for "Atlantic hurricane variability during the Holocene", \$90,000 from 2011 to 2016.
- Co-PI for "Ciboney and Taino heritage: Biological and cultural landscapes of indigenous people in pre- and post-Contact Cuba". Granted by the Social Sciences and Humanities Research Council of Canada, with 5 others. Total budget is \$72,000 for 2010-2011.
- PI for "Climate, fire, and vegetation history of the Kluane River region, southwest Yukon Territory. Granted by the Yukon Territorial Government for 2008.
- Co-PI for "Paleotempestology of the Caribbean Region: A Multi-proxy, Multi-site Study of the Spatial and Temporal Variability of Caribbean Hurricane Activity". My budget was \$43,000 from 2007 to 2011. Funded by the Inter-American Institute for Global Change Research.

## PEER-REVIEWED PUBLICATIONS

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[22] Peros, M.C., Gregory, B.R., Matos, F., Reinhardt, E.G., Desloges, J.P. (accepted). Late Holocene record of lagoon evolution, climate change, and hurricane strikes from south-eastern Cuba. The Holocene.

[21] Roksandic, M., Buhay, W.M., Rodríguez Suárez, R., Chinique des Armas, Y., Peros, M.C., Roksandic, I., Vieira, L.M., Arredondo, C., Martínez Fuentes, A., Smith, D.G. (in press). Radiocarbon and stratigraphic chronology at Canímar Abajo, Matanzas, Cuba. Radiocarbon.

- [20] Gregory, B.R., **Peros, M.C.**, Reinhardt, E.G., Donnelly, J.P., (2015). Foraminiferal and XRF elemental analysis of two Cuban lagoons document increased aridity during the mid-late Holocene. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 426: 229-241.
- [19] Milne, G.A., **Peros, M.C.** (2013). Data–model comparison of Holocene sea-level change in the circum-Caribbean region. *Global and Planetary Change*. 107: 119–131.
- [18] Gajewski, K., Munoz, S., **Peros, M.**, Viau, A., Morlan, R., Betts, M. (2011). The Canadian Archaeological Radiocarbon Database (CARD): archaeological radiocarbon dates in North America and their paleoenvironmental context. *Radiocarbon*. 53: 371–394.
- [17] Munoz, S., Gajewski, K., **Peros, M.C.** (2010). Synchronous environmental and cultural change in the prehistory of the northeastern United States. *Proceedings of the National Academy of Sciences*. 107: 22008–22013.
- [16] **Peros, M.C.**, Gajewski, K. (2010). On the glacial and postglacial history of the western Canadian Arctic Islands. *Quaternary Research*. 75: 307-308.
- [15] **Peros, M.C.**, Gajewski, K., Paull, T., Ravindra, R., Podritske, B. (2010). Multi-proxy record of postglacial environmental change, south-central Melville Island, Northwest Territories, Canada. *Quaternary Research*. 73: 247-258.
- [14] Cooper, J., **Peros, M.C.** (2010). The archaeology of climate change in the Caribbean. *Journal of Archaeological Science*. 37: 1226-1232.
- [13] **Peros, M.C.**, Munoz, S.E., Gajewski, K., Viau, A.E. (2010). Prehistoric demography of North America inferred from radiocarbon data. *Journal of Archaeological Science*. 37: 656-664.
- [12] Kaufman, D.S., Schneider, D.P., McKay, N.P., Ammann, C.M., Bradley, R.S., Briffa K.R., Miller, G.H., Otto-Bliesner, B.L., Overpeck, J.T., Vinther, B.M., Arctic Lakes 2k Project Members (Abbott, M., Axford, Y., Bird, B., Birks, H.J.B., Bjune, A.E., Briner, J., Cook, T., Chipman, M., Francus, P., Gajewski, K., Geirsdóttir, Á., Hu, F.S., Kutchko, B., Lamoureux, S., Loso, M., MacDonald, G., **Peros, M.**, Porinchu, D., Schiff, C., Seppä, H., Thomas, E.). (2009). Recent warming reverses long-term Arctic cooling. *Science* 325: 1236-1239.
- [11] **Peros, M.C.**, Gajewski, K. (2009). Pollen-based reconstructions of late Holocene climate from the central Canadian Arctic. *Journal of Paleolimnology*. 41: 161-175.
- [10] Gabriel, J.J., Reinhardt, E.G., **Peros, M.C.**, Davidson, D.E., van Hengstum, P.J., Beddows, P.A. (2009). A reconstruction of the environmental evolution of an open system cenote in the Yucatan Peninsula, Mexico. *Journal of Paleolimnology*. 42: 199-213.
- [9] **Peros, M.C.**, Gajewski, K., Viau, A. (2008). Continental-scale tree population response to rapid climate change, competition, and disturbance. *Global Ecology and Biogeography*. 17: 658-669.
- [8] **Peros, M.C.**, Gajewski, K. (2008). Testing the reliability of pollen-based diversity estimates. *Journal of Paleolimnology*. 40: 357-368.

- [7] Cowling, S.A., Cox, P.M., Jones, C.D., Maslin, M.A., **Peros, M.**, Spall, S.A. (2008). Simulated glacial and interglacial vegetation across Africa: implications for species phylogenies and trans-African migration of plants and animals. *Global Change Biology*. 14: 827-840.
- [6] **Peros, M.C.**, Gajewski, K. (2008). Holocene climate and vegetation change on Victoria Island, western Canadian Arctic. *Quaternary Science Reviews*. 27: 235-249.
- [5] **Peros, M.C.**, Reinhardt, E.G., Davis, A.M. (2007). A 6000 cal yr record of ecological and hydrological changes from Laguna de la Leche, north coastal Cuba. *Quaternary Research*. 67: 69-82.
- [4] **Peros, M.C.**, Reinhardt, E.G., Schwarcz, H.P., Davis, A.M. (2007). High-resolution paleosalinity reconstruction from Laguna de la Leche, north coastal Cuba, using Sr, O, and C isotopes. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 245: 535-550.
- [3] **Peros, M.C.**, Graham, E., Davis, A.M. (2006). Stratigraphic Investigations at Los Buchillones, a Taino site on the North Coast of Central Cuba. *Geoarchaeology*. 21: 403-428.
- [2] Finkelstein, S.A., **Peros, M.C.**, Davis, A.M. (2005). Integrating paleoecological indicators: a case study using pollen and diatoms from a Great Lakes coastal wetland. *Journal of Paleolimnology*. 33: 1-12.
- [1] Moalem, S., Storey, K.B., Percy, M.E., **Peros, M.C.**, Perl, D.P. (2005). The sweet thing about Type 1 diabetes: A cryoprotective evolutionary adaptation. *Medical Hypotheses*. 65: 8-16.

## OTHER PUBLICATIONS

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- [6] **Peros, M.C.** 2013. Book review of “Climate Change: the Science, Impacts and Solutions (by A. Barrie Pittock)”. *The Northeastern Geographer*. 4: 95-96.
- [5] Gajewski, K., **Peros, M.C.**, Finkelstein, S. and Fortin, M.-C. 2009. Holocene Paleoclimates of the Canadian Arctic Islands: the ACVAST Project. *PAGES Newsletter*.
- [4] Zabenskie, S., **Peros, M.** and Gajewski, K. 2006. The use of heavy-liquid in the separation of pollen from Arctic lake sediments. *Canadian Association of Palynologists Newsletter*. 29:5-7.
- [3] **Peros, M.C.** 2000. Sickle Blade Design and Hafting Strategies at Tabaqat al-Buma, a Late Neolithic Farmstead in Northern Jordan. *Neo-Lithics*. 2/3:2-4.
- [2] Ross, B.D. and **Peros, M.C.** 1998. The Pit Monitoring and Recording Project at Pukaskwa National Park: 1995. Report on File, Department of Canadian Heritage, Cornwall, Ontario.
- [1] Smith, D. G., Ormerod, T., Davis, A. M., and **Peros, M.C.** 1997. Prehistoric native ecology at Cootes Paradise, Royal Botanical Gardens, Hamilton, Ontario, in Ramsey, D. and Powell, S. (eds.). *The Edge and the Point, Proceedings of the Leading Edge Conference*: 277-281.

## TEACHING EXPERIENCE

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- **Instructor**, *Climate Change* (Bishop's University, winter 2015)
- **Instructor**, *Research Methods* (Bishop's University, fall 2014)
- **Instructor**, *Climate Change* (Bishop's University, winter 2014)
- **Instructor**, *Research Methods* (Bishop's University, fall 2013)
- **Instructor**, *Climate Change* (Bishop's University, winter 2013)
- **Instructor**, *Research methods* (Bishop's University, fall 2012)
- **Instructor**, *Climate Change* (Bishop's University, winter 2012)
- **Instructor**, *Ancient Civilizations and their Environments* (Bishop's University, winter 2012)
- **Instructor**, *Wetlands* (University of Toronto, Mississauga, winter 2011)
- **Instructor**, *Advanced Geomorphology* (Carleton University, winter 2011)
- **Instructor**, *Statistics* (Carleton University, winter 2011)
- **Instructor**, *Geographic Approaches to Environmental Issues* (University of Ottawa, fall 2011)
- **Instructor**, *Methods in Geographic Research* (University of Ottawa, fall, 2011)
- **Instructor**, *Climate and Atmospheric Change* (Carleton University, winter 2010)
- **Instructor**, *Global Climate Change* (University of Ottawa, fall 2009)
- **Instructor**, *Cold Regions Processes and Climate Change* (University of Ottawa, winter 2009)
- **Instructor**, *Geomorphology* (University of Ottawa, winter 2008)
- **Instructor**, *Geomorphology* (University of Toronto, summer 2005)
- **Instructor**, *Introduction to Physical Geography* (University of Toronto, summer 2004)
- **Head TA**, *Introduction to Physical Geography* (University of Toronto, 2002 – 2004)
- **TA**, *Geographic Field Methods* (University of Toronto, Sept. 2003)
- **TA**, *Global Environmental Change* (University of Toronto, 2002)
- **TA**, *Introduction to World Geography* (York University, 1999 – 2000)

## INVITED SEMINARS

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- McGill University (November 2013)
- University of Sherbrooke (March 2013)
- McGill University (November 2011)
- Bishop's University (April 2010)
- University of Maryland (March 2010)
- Carleton University (scheduled for Nov. 2008)
- Brock University (Nov. 2007)
- University of Ottawa (Mar. 2006 and Feb. 2007)
- University of Toronto (Nov. 2003)
- McMaster University (Apr. 2003)

## CONFERENCE PAPERS AND POSTERS

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### 2015

- Peros, M.C.,** Daradich, A., and Buhay, B. 2015. Reconstructing Caribbean Paleotopography during the Holocene: Implications for Archaeology and Biogeography. Poster presented at the Annual Meeting of the Society for American Archaeology. San Francisco, CA.
- Peros, M.C.,** Marquis, B., and Vachon, J. 2015. Recent afforestation of the Johnville Peat Bog, southern Québec, Canada, investigated using dendroecological and paleoecological techniques. Paper presented at the Joint Assembly of the American Geophysical Union, Montréal, QC.
- Peros, M.C.,** Roksandic, M., Buhay, B., Smith, D., Chinique, Y., and Roksandic, I., 2015. Human migration, climate change, and prehistoric extinctions? New data and perspectives from Cuba. Paper presented at the Association of American Geographers Annual Meeting. Chicago, USA.

### 2014

- Peros, M.C.,** Chan, K., Ponsford, L., Carroll, L., Magnan, G. 2014. High-resolution Record of Holocene Climate, Vegetation, and Fire from a Raised Peat Bog, Prince Edward Island, Canadian Maritimes. Poster presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA.
- Peros, M.C.** and Cooper J. 2014. Geoarchaeological investigations at Los Buchillones, a Taino site on the north coast of central Cuba. Paper presented at Society for Historical Archaeology Annual Meeting, Québec City, Québec.

### 2013

- Milne, G.A., **Peros M.C.,** Austermann, J., Mitrovica, J.X., Latychev, K. 2013. Data-model comparison of Holocene Sea-Level change in the Circum-Caribbean Region. Paper presented at the PALSEA2 conference, Rome, Italy.
- Peros, M.C.,** Ponsford, L., Fortier, E., Chan, K., and McCloskey, T. 2013. Holocene development of sphagnum peatlands in Eastern Canada: preliminary results from Prince Edward Island and Les Îles de la Madeleine, Québec. Paper presented at the Association of American Geographers Annual Meeting, Los Angeles.

### 2012

- Peros, M.C.** and Matos, F. 2012. High-resolution record of Late Holocene climate recorded in the sediments of a cenote, Cayo Coco, Cuba. Paper presented at the Association of American Geographers Annual Meeting, New York.

### 2011

- Peros, M.C.,** Matos, F., Rodrigues, V., Gregory, B., and Reinhardt, E. 2011. Evidencia sedimentaria

para la actividad de los huracanes durante el Holoceno en Cuba. Poster presented at the VI Congreso Cubao de Meteorología, Havana, Cuba.

**Peros, M.C.** 2011. Vegetation change and the Younger Dryas: a continental-scale perspective. Paper presented at the XVIII INQUA Congress, Bern, Switzerland.

**Peros, M.C.** 2011. Holocene sea level rise, storms, and coastal change in southwestern Cuba. Poster presented at the XVIII INQUA Congress, Bern, Switzerland.

## **2010**

**Peros, M.C., Gajewski, K.** 2010. High-latitude palynology, vegetation change, and climate: recent research from the Canadian Arctic. Paper presented at the Joint Meeting of the AASP-CPC-CAP, Halifax, Nova Scotia.

## **2009**

**Peros, M.C. and Milne, G.A.** 2009. Data-model comparison of Holocene sea level change in the Caribbean: implications for eustasy, isostasy, and tectonics. Paper presented at the IGCP 495 Project meeting at Myrtle Beach, South Carolina.

**Peros, M.C. and Gajewski, K.** 2009. Testing the reliability of pollen-based diversity estimates. Paper presented at the Joint Assembly of the American Geophysical Union, Toronto.

## **2008**

Cooper, J. and **Peros, M.C.** 2008. The Archaeology of Climate Change in the Caribbean: An inter-disciplinary perspective from Cuba. 6<sup>th</sup> World Archaeological Congress, Dublin.

**Peros, M.C. and Gajewski, K.** 2008. Holocene climate cyclicity recorded in productivity indicators from a small arctic lake. Annual meeting of the Association of American Geographers, Boston.

## **2007**

**Peros, M.C. and Gajewski, K.** 2007. Late Holocene vegetation and climate change from the central and western Canadian Arctic inferred from fossil pollen data. Fall Meeting, American Geophysical Union, San Francisco.

**Peros, M.C., Davidson, D., and Davis, A.M.** 2007. Quantitative paleosalinity reconstructions from mangrove ecosystems using modern and fossil pollen data. Annual meeting of the American Association of Stratigraphic Palynologists, Panama City, Panama.

**Peros, M.C., and Gajewski, K.** 2007. Pollen records of late Holocene climate and vegetation changes from the Canadian Arctic. CANQUA 2007 Congress, Ottawa.

**Peros, M.C.**, and Gajewski, K. 2007. Holocene climate and vegetation change on Victoria Island, western Canadian Arctic. CMOS, CGU, AMS Joint Congress, St. John's, Nfld.

Gajewski, K., Podritske, B., **Peros, M.**, Zabenskie, S., Finkelstein, S., Fortin, M-C., Paull, T., Mustaphi-Courtney, C., and Viau, A. 2007. Postglacial paleoenvironmental variability across the Canadian Arctic. 30th Congress of the International Association of Theoretical and Applied Limnology, Montreal.

Gajewski, K., Viau, A., **Peros, M.**, and Ladd, M. 2007. Paleoclimates of northern Canada - a synthesis. CMOS, CGU, AMS Joint Congress. St. John's, Nfld.

## **2006**

**Peros, M.C.**, Podritske, B., Zabenskie, S., Finkelstein, S., Gajewski, K., and Viau, A. 2006. High resolution records of Holocene environmental change from the western and central Canadian Arctic. Joint annual meeting of the Geological Association of Canada and the Mineralogical Association of Canada, Montreal.

**Peros, M.C.**, Gajewski, K., and Viau, A. 2006. Rapid continental-scale vegetation response to the Younger Dryas Cool Episode. Fall Meeting, American Geophysical Union, San Francisco.

Finkelstein, S., Gajewski, K., **Peros, M.**, Podritske, B., Zabenskie, S., Fortin, M-C., Paull, T., and Viau, A. 2006. High-resolution paleoclimate reconstructions of the Canadian Arctic. Fall Meeting, American Geophysical Union, San Francisco.

Bunbury, J., Viau, A., Gajewski, K., and **Peros, M.** 2006. Regional climate change in northern North America during the Holocene. Fall Meeting, American Geophysical Union, San Francisco.

## **2005 and earlier**

**Peros, M.C.**, and Davis, A.M. 2005. Late Holocene sea-level rise on the north coast of central Cuba: Implications for Taino archaeology. Developing International Geoarchaeology, Saint John, New Brunswick, Canada.

**Peros, M.C.** 2004. A 7000 <sup>14</sup>C year record of environmental change from Laguna de la Leche, Cuba, with implications for regional sea level and climate variability. Fall meeting, American Geophysical Union, San Francisco.

**INVITED: Peros, M.C.** 2003. Micropaleontological Research in North Central Cuba: Implications for Prehistoric Archaeology. Joint meeting of the American Association of Stratigraphic Palynologists, the Canadian Association of Palynologists, and the North American Micropaleontological Society, St. Catharines, Ontario.

Davis, A.M., Finkelstein, S.A., and **Peros, M.C.** 2003. A Diatom and Pollen Record of Paleoenvironmental Change at Cootes Paradise Marsh, Southern Ontario, Canada. Joint meeting of the AASP, the CAP, and the NAMS, St. Catharines, Ontario.



**Peros, M.C.** 2003. Late Holocene Sea Level Change, Mangrove System Response, and Taino Archaeology: New Evidence from Cuba. Poster presented at the 16th INQUA Congress, Reno.

**INVITED: Peros, M.C.** and Davis, A.M. 2003. Late Holocene Environmental Change on the North Coast of Central Cuba: Implications for Taino Archaeology. Annual meeting of the Association of American Geographers, New Orleans.

**Peros, M.C.,** Davis, A.M., and La O, José. 2002. Coastal Geoarchaeology in North Central Cuba. Annual meeting of the Association of American Geographers, Los Angeles.

Davis, A.M., **Peros, M.C.,** Smith, D. G., and Poaps, S. 2002. Prehistoric use of Wild Rice at Cootes Paradise Marsh, Hamilton Harbour, Ontario. Annual meeting of the Canadian Association of Geographers, Toronto.

**Peros, M.C.** 2001. Preliminary Paleoenvironmental Research at Los Buchillones, Cuba. Annual meeting of the Society for American Archaeology, New Orleans.

**Peros, M.C.** 2000. Coastal Environments and Taino Occupation at Los Buchillones, Cuba. Annual meeting of the Canadian Archaeological Association, Ottawa.

**Peros, M.C.** 1998. The Standardization of the Sickle Blades from Tabaqat al-Buma, A Late Neolithic Site in the Wadi Ziqlab, Northern Jordan. *Material, Thought, and Action: Technological Perspectives on Prehistory*, Toronto.

## ACADEMIC SERVICE

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- Coordinator of the Multi-scale Climate and Environmental Change Research Cluster, Bishop's University ([www.muscle.ubishops.ca](http://www.muscle.ubishops.ca))
- Co-organizer of three special sessions at the 2011 Association of American Geographers Annual Meeting titled: New Perspectives to Paleoenvironmental Change and Geoarchaeology
- President, Canadian Association of Palynologists (January 2010 to December 2011)
- Reviewer for *National Science Foundation* (proposal), New York Sea Grant (proposal), National Geographic (proposal), *Quaternary Research*, *Journal of Paleolimnology*, *Journal of Archaeological Science*, *Quaternary Science Reviews*
- Brokered a formal Memorandum of Understanding among the Department of Geography at the University of Toronto, the Coastal Ecosystem Research Center, Cayo Coco, Cuba, and the Cuban Ministry of Science, Technology, and the Environment (CITMA) (2003)
- Organized the visit of Dr. Jim Dickson, University of Glasgow, to the University of Toronto. Title of Dickson's talk: Life and Death of the Tyrolean Iceman: Clues from Palynology, Bryology, Stable Isotopes and DNA (2003)
- Co-organized two special sessions at the Canadian Association of Geographers Annual Meeting, Toronto, titled: Holocene Environmental Change in the Great Lakes Region (2002)
- Organized the visit of Dr. Eduard Reinhardt, McMaster University, to the University of Toronto. Reinhardt's talk was on geoarchaeological research at Caesaria Maritima, Israel (2002)

- Physical geography graduate student representative on the department committee for the restructuring of the Ph.D. program in the Department of Geography at the University of Toronto (2001 – 2003)

## **PROFESSIONAL MEMBERSHIPS**

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Society for American Archaeology (SAA)  
Canadian Association of Palynologists (CAP)  
American Geophysical Union (AGU)  
Association of American Geographers (AAG)