

PRELIMINARY
2nd CLIMATE CHANGE TECHNOLOGY CONFERENCE
2ième Conférence sur les technologies du changement climatique
May 12 - 15 mai 2009
McMaster University
Hamilton, Ontario

6-May-09
cctc2009 program

All sessions at the McMaster University "Michael DeGroote Centre for Learning" unless otherwise noted.

Day 0 Tuesday May 12, 2009

Time

7:00 AM Registration for Workshops

9:00 AM Workshops Begin

"Projecting A Future Climate: the science, the tools, and what is coming" by the Ouranos Consortium.

Ms. Diane Chaumont & Mr. Ramon de Elta

Room tba 9:00 am till 12 noon. Cost \$50.00 / Students \$25.00

"Engineering Vulnerability of Infrastructure to Climate Change" by Engineers Canada, Ottawa

Mr. Joel Nodelman, P.Eng & Ms. Joan Nodelman, Nodelcorp Consulting Inc.

Room tba 1:30pm to 4:30pm Cost: \$50.00 / Students \$25.00

"Moving From Impacts To Adaptation: Responding To A Changing Climate"

Don Lemmen (Natural Resources Canada), Elizabeth Bush (Environment Canada); Quentin Chiotti (Pollution Probe)

Room tba 9:00 am till 12:00 noon Cost \$50.00 / Students \$25.00

"Nuclear Energy and Managing Climate Change" - Dr. Douglas Boreham, McMaster University

Coordination by Dr. Douglas Boreham, Canadian Nuclear Society

Room tba 1:30pm till 4:30pm Cost \$50.00 / Students \$25.00

Note: Lunch ticket provided for those who register in both a morning and an afternoon workshop.

Note: A minimum of 10 participants required for each workshop.

Day 1 Wednesday May 13, 2009

Time

Event

7:30 AM Registration and Continental Breakfast - Foyer
Speaker's Breakfast Room 1009

8:00 AM **WELCOME Room 1105 "Michael DeGroote Centre for Learning", McMaster University, Hamilton, Ontario**
Call To Order: David Jackson, Conference Chair

Welcome Address by Peter George, President and Vice Chancellor, McMaster University

Introductory Address by Marc Rosen, President, Engineering Institute of Canada

8:10 AM OPENING PLENARY 1A - THE BIG PICTURE - Vision, Policy, Strategy, Issues & Opportuniites

Room : 1105

- 1 - Chair and Opening Speaker: Dr. John Boyd, Past President Golder Associates,
President of the International Federation of Consulting Engineers (FIDIC)
PS192 **"The Professional Implications of Climate Change"**, Review CCTC 2006 Call to Action
- 2 - David Sanborn Scott, Vice President - International Association For Hydrogen Energy
PS194 **"It's the System, Stupid! Reflections on the Role of Services, Currencies, Hydricity, Nuclear and Renewables"**.
- 3 - David Layzell, Executive Director - Institute of Sustainable Energy, Environment, and Economy (ISEEE)
PS191 **"Engineering the Carbon Cycle in an Energy Hungry World"**
- 4 - Samuel Rosenbloom, US Department of Energy
PS193 **"Energy for Life"**

10:10 AM Refreshment Break / Networking - Foyer

10:30 AM PLENARY 1B - ENGINEERING FOR MITIGATION - Programs and Measures for Green House Gas Reduction

Room: 1105

- 1 - Chair and Opening Speaker - Hans-Holger Rogner, Department of Nuclear Energy, IAEA, Vienna, Austria
"Carbon Free Energy"
- 2 - Eric Beynon, Director, Strategy & Policy, Integrated CO2 Network, ICO2N
"Carbon Capture and Storage In Canada: A Clean Energy Superpower Opportunity"
- 3 - Lisa Prime, Director of Sustainability, Waterfront Toronto
"GHG Perspective on Waterfront Revitalization Project"
- 4 - David Helliwell, Pulse Energy
PS188 **"Using Software to Improve Energy Efficiency in Buildings"**

12:30 PM Lunch / Networking - McMaster University Student Centre, Room 319

2:00 PM PARALLEL TOPICS SESSION 1

Mitigation 1A - Room: 1105 - **"Residential & Commercial Buildings"** - Session Chair: David Helliwell, Pulse Energy

20PF	Mitigation 1A-1	A Comparative Study Of Ground Source Heat Pump And Conventional Natural Gas Furnace Systems	Tayfun Ibrahim Marc	Yilmaz Dincer Rosen	University of Ontario Institute of Technology University of Ontario Institute of Technology University of Ontario Institute of Technology
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103PF	Mitigation 1A-2	Review of Geothermal Heating And Cooling In Buildings	Cynthia	Coles	Memorial University of Newfoundland
135PF	Mitigation 1A-3	Using Stored Heat Extracted From Air To Reduce Carbon Dioxide Production and Electricity Demand	Ron Volker	Tolmie Thomsen	HEAT Networks, Kanata Retired (St Lawrence College)
Modelling 1B - Room: 1010 - " Modelling I " - Session Chair: Douglas Lightfoot (Québec)					
139PF	Modelling 1B-1	Small Scale Renewable Energy Resource Assessment for Newfoundland	Kyla Tariq Andrew	Fisher Igbal Fisher	Memorial University of Newfoundland Memorial University of Newfoundland Memorial University of Newfoundland
145P	Modelling 1B-2	Assessment of Climate Change Scenarios for Saudi Arabia Using Data From Global Climate Models	Tahir	Husain	Memorial University of Newfoundland
67	Modelling 1B-3	Evaluate Prevailing Climate Change On Great Lakes Water Levels	Monirul	Islam	Toronto
Education 1D Room: 1008 - " Education I " - Session Chair Annette Bergeron (Ontario Society of Professional Engineers)					
46	Education 1D-1	Electronic Teaching (Training) Confrontation With A Natural Disaster Earthquake	Leila Babak Saeed	Mansourian Esmailpoor Setayeshi	
49PF	Education 1D-2	Injecting "Design" into the Formula	Eric	Nay	Ontario College of Art and Design
107PRF	Education 1D-3	Climate Change and Infrastructure Engineers - Addressing the Knowledge Gaps	Jeff	Walker	Canadian Standards Association
181PRF	Education 1D-4	Building Climate Change Into Infrastructure Codes and Standards	H R S S D D J	Auld Morris Eng Fernandez MacIver Bernstein Klaassen	Adaptation and Impacts Research Division, Environment Can Adaptation and Impacts Research Division, Environment Can Adaptation and Impacts Research Division, Environment Can Adaptation and Impacts Research Division, Environment Can Adaptation and Impacts Research Division, Environment Can Adaptation and Impacts Research Division, Environment Can Adaptation and Impacts Research Division, Environment Can
Adaptation 1E Room 1009 - " Hydro Power Infrastructure " - Session Chair - Chris Feetham (Environment Canada)					
68PF	Adaptation 1E-1	Interdependency Control: Compensation Strategies For The Inherent Vulnerability of Critical Infrastructure Networks	DeTao Jose K. Mandana	Mao Marti Srivastava Sotoodeh	University of British Columbia University of British Columbia University of British Columbia University of British Columbia

			Kafui	Monu	University of British Columbia
62PF	Adaptation 1E-2	Thermal Protection Of Power Transmission Line Foundations Against Permafrost Due To Climate Change	Xili G.F.	Duan Naterer	University of Manitoba University of Ontario Institute of Technology
154PF	Adaptation 1E-3	Hydro Power and Climate Change - Dealing With An Uncertain Future	Jonas Ken Marion	Roberts Snelgrove Organ	Memorial University of Newfoundland Memorial University of Newfoundland Nalcor Energy, Newfoundland and Labrador

3:30 PM Refreshment Break / Networking - Foyer

4:00 PM **PARALLEL TOPICS SESSION 2**

Mitigation 2A - Room: 1105 - "**Generation**" - Session Chair: Nigel Fitzpatrick (Azure Dynamics Corporation)

136PF	Mitigation 2A-1	A GHG Solution - Long Term Nuclear Energy and Permanent High Level Waste Disposal by Subduction	F.Peter	Ottensmeyer	University of Toronto
48PF	Mitigation 2A-2	Optimizing Greenhouse Gas Mitigation Strategies To Suppress Energy Cannibalism	Joshua M.	Pearce	Queen's University
36PF	Mitigation 2A-3	Different Scenarios to Reduce Greenhouse Gas Emissions of Thermal Power Stations in Canada	Farshid Alan S.	Zabihian Fung	Ryerson University Ryerson University

Modelling 2B - Room: 1010 - "**Modelling II**" - Session Chair - Jen Shih Chang (McMaster U)

43PRF	Modelling 2B-1	Assessing Trends In Temperature, Precipitation, and Streamflow Due To Climate Change In The Credit River Watershed	A. J. C. J. M. C.	Singh Dougherty Zimmer Kinkead Hulley Dohertt	Credit Valley Conservation Authority Credit Valley Conservation Authority Credit Valley Conservation Authority Credit Valley Conservation Authority Credit Valley Conservation Authority Credit Valley Conservation Authority
45PF	Modelling 2B-2	Integrated Assessment, Water Resources, and Science Policy Communication	E. M.K. G. Slobodan	Davies Akhtar McBean Simonovic	University of Western Ontario University of Western Ontario University of Western Ontario University of Western Ontario
50AF	Modelling 2B-3	Development Of Energy And Emission Diagrams For The Province Of Alberta	Veena Amit	Subramanyam Kumar	University of Alberta University of Alberta

Impacts 2C Room: 1016 - "**Impacts II**" - Session Chair: Professor Bale Reddy (UOIT)

7:00 AM Continental Breakfast - Location: Michael DeGroote Centre for Learning, Foyer
Speaker's Breakfast - Room 1009

7:30 AM Registration (7:30am - 4:30pm)

8:30 AM **PLENARY SESSION 2 - ENGINEERING FOR ADAPTATION**

Rooms: 1105

1 - Chair and Opening Speaker: Professor David Pearson, Laurentian University
Chair - Ontario Centre for Climate Impacts and Adaptation Resources (OCCCIAR)
Title: to be announced

2 - Barry Gear, President, World Federation of Engineering Organizations
"The Global Technical Picture of Dealing With Climate Change"

3 - Robert Tremblay, Insurance Bureau of Canada
"Adapting to Climate Change: The Insurance Industry's Role"

4 - Lawson Oates, Director, Toronto Public Works
"Adapting to Climate Change: - Strategies for Municipalities"

10:00 AM Refreshment Break / Networking - Foyer

10:30 AM **PARALLEL TOPICS SESSION 3**

Mitigation 3A - Room: 1105 - **"Industrial Processes I"** - Session Chair: Nigel Fitzpatrick (Azure Dynamics Corporation)

PF93	Mitigation 3A-1	Adding Regenerative Burners To Improve Efficiency Of An Aluminium Melting Furnace In A Die Cast Plant Energy and Exergy Assessment	Dennis Lee Marc Rosen	Generation Engineering, BC Hydro University of Ontario Institute of Technology
19PF	Mitigation 3A-2	Mitigation Of Climate Change Via A Copper - Chlorine Hybrid Thermochemical Water Splitting Cycle For Hydrogen Production From Nuclear Energy	Mehmet Fatil Orhan Ibrahim Dincer Marc Rosen	University of Ontario Institute of Technology University of Ontario Institute of Technology University of Ontario Institute of Technology
PF92	Mitigation 3A-3	Hydrogen Production From Coal Using Two Carbon Dioxide Capture Sequences Based On Chemical Looping Combustion	N.V. B.V. M.A.	Gnanapragasam Reddy Rosen University Of Ontario Institute of Technology University Of Ontario Institute of Technology University Of Ontario Institute of Technology

Modelling 3B - Room: 1010 - **"Modelling III"** - Session Chair: Andy Fisher (Memorial University)

118PF	Modelling 3B-1	Potential Carbon Mitigation By Vertical Axis Wind Turbines In Urban Regions	Kevin Pope Greg Naterer	University Of Ontario Institute of Technology University Of Ontario Institute of Technology
163AF	Modelling 3B-2	Case Study: Practical Engineering Approaches For Assessing	Nicole Vadori	RWDI Air Inc.

		Future Climate Conditions	Xin Mike	Qui LePage	RWDI Air Inc. RWDI Air Inc.
56PRF	Modelling 3B-3	The Impact of Climate Change on US Power Grids	Ning Pak Lai-Yung Mike Todd Wei James	Lu Wong Leung Scott Taylor Jang Correia	Pacific Northwest National Laboratory Pacific Northwest National Laboratory Pacific Northwest National Laboratory Pacific Northwest National Laboratory Pacific Northwest National Laboratory Pacific Northwest National Laboratory Pacific Northwest National Laboratory

Policy & Regulation 3D, Room: 1008 - **"Policy & Regulations Presentations"** - Session Chair - Douglas Lightfoot P.Eng (Global Environmental & Climate Change Centre, McGill U)

76PF	Pol & Reg 3D-1	Evaluating the Impacts of Energy Supply Technology Options	Bruce	Peachey	New Paradigm Engineering Limited
98PF	Pol & Reg 3D-2	Lifting the Moratorium on Offshore Wind: the Role of Institutions, Non State Actors, and Competing Ideas	Jennifer	Taylor	York University

Adaptation 3E Room: 1009 - **"Water Resources"** - Session Chair - David Lapp (Engineers Canada)

42PF	Adaptation 3E-1	Development Decision Support System For Water Resource Management Under Changing Climate	Xianghui Gordon	Nie Huang	University of Regina University of Regina
148PRF	Adaptation 3E-2	Multi Criteria Decision Making Analysis Method For Supporting Adaptation Planning To Climate Change Impacts On Water Resources	Xiaosheng Gordon H.	Qin Huang	University of Regina University of Regina
149PRF	Adaptation 3E-3	Climate Change and Water Management: Should We Wait Until The Expected Changes Happen, Or Can We Already Adapt Based on The Information Available, Uncertain As It Is?	René Claude	Roy Demers	Hydro-Québec Hydro-Québec

12:00 noon LUNCH / NETWORKING: McMaster University Student Centre, Room 319

1:30 PM PARALLEL TOPICS SESSION 4

Mitigation 4A - Room: 1105 - **"Wind Power"** - Session Chair: Malcolm Metcalfe (Sempa Power Systems, Limited)

108PF	Mitigation 4A-1	Wind Power In Ontario: Quantifying The Benefits Of Geographic Diversity	Tom Francois	Adams Cadieux	Consultant University of Toronto
66PF	Mitigation 4A-2	CFD Modelling Of A Vertical - Axis Wind Turbine For Efficiency Improvement And Climate Change Mitigation	John Greg Mark	Ajedegba Naterer Rosen	University Of Ontario Institute of Technology University Of Ontario Institute of Technology University Of Ontario Institute of Technology

			Ed	Tsang	Zephyr Alternative Power Inc.
32PRF	Mitigation 4A - 3	Urban Small Wind Turbine Applications For Reducing GHG Emissions	S.	Tullis	McMaster University
Modelling 4B - Room: 1010 - " Modelling IV " - Session Chair: Cynthia Coles (Memorial University)					
53PF	Modelling 4B-1	What Engineers Should Know About Scales For Measuring Primary Energy: Why They Are Necessary and How To Use Them	H. Douglas	Lightfoot	Québec
55PF	Modelling 4B-2	A Method For Constructing Scenarios of Future World Energy Demand	H. Douglas	Lightfoot	Québec
157PF	Modelling 4B-3	Limits Imposed By Second Law Of Thermodynamics On Reducing Greenhouse Gas Emissions To The Atmosphere	Richard C. M.A.	Berthiaume Bouchard Rosen	Universite' Laval University of Laval University Of Ontario Institute of Technology

Monitoring & Standards 4D Room: 1008 - "**Quantification Protocols and Infrastructure Standards**" - Session Chair - Tom Baumann (ClimateCHECK)

110PF	Mon & Std 4D-1	Quantifying Environmental Sustainability Using An Environmental Footprint Calculator	B. Adam C. A. Douglas C. Valerie	Loney B. Smith Chan	Connestoga - Rovers and Associates Connestoga - Rovers and Associates Connestoga - Rovers and Associates
165PF	Mon & Std 4D-2	Biomass To Energy: GHG Reduction Quantification Protocols and Case Study	Gordon W. Gordon C.	Reusing Nolan Kerr Taylor	Connestoga - Rovers and Associates Liberty Energy, Hamilton Index Energy, Ajax Connestoga - Rovers and Associates

Adaptation 4E Room: 1009 - "**Adaptation Tools & Techniques**" - Session Chair: Jean Van Dusen (Ministry of the Environment, Ontario)

180PF	Adaptation 4E-1	Climate (Temperature) Design Criteria For Permafrost Regions Under Climate Change	Igor Heather Sharon B.	Holubec Auld Fernandez Wang	Holubec Consulting Inc Adaptation and Impacts Research Division, Environment Can Adaptation and Impacts Research Division, Environment Can Adaptation and Impacts Research Division, Environment Can
182AF	Adaptation 4E-2	Municipalities Acting On Climate Protection - Tools and Techniques To Align Mitigation and Adaptation	D	Causley	
183PRF	Adaptation 4E-3	Failure To Adapt Infrastructure: Is Legal Liability Lurking For Infrastructure Stake Holders?	Sabrina	Gherbaz	Torys L.L.P.

3:00 PM Refreshment Break / Networking - Foyer

3:30 PM **PARALLEL TOPICS SESSION 5**

Mitigation 5A - Room: 1105 - "**Industrial Processes II**" - Session Chair: Nigel Fitzpatrick (Azure Dynamics Corporation)

80PF	Mitigation 5A-1	Clean Processing Of Sour Gas For Heat / Power Applications	R. A.K.	Azargohar Dalai	University of Saskatchewan University of Saskatchewan
82PF	Mitigation 5A-2	The Non Thermal Plasma Technologies For Strategy Of Climate Change	Kuniko	Urashima	National Institute Of Science and Technology, Japan
94PF	Mitigation 5A-3	Abatement Of Global Warming Gas Emissions From Semi-Conductor Manufacturing Processes By Non-Thermal Plasma-Catalyst Systems	Jen-Shih Kuniko	Chang Urashima	McMaster University McMaster University

Modelling 5B - Room: 1010 - "**Modelling V**" - Session Chair: Tahir Husain (Memorial University, Newfoundland)

38PF	Modelling 5B-1	Analysis and Comparison Life Cycle Assessments of Ethanol Fuel From Corn	Philip Jesse	La Flemming	University of Waterloo Natural Resources Canada
28PF	Modelling 5B-2	Conjugate Heat Transfer With Slip Flow Irreversibilities In PEM Fuel Cell Micro-Cooling	E.O.B. Marc	Ogedengbe Rosen	Energhx Consulting, Nepean University of Ontario Institute of Technology
185PR	Modelling 5B - 3	Carbon Emissions And CES In Manufacturing	Jack Il-Yong P.	Jesweit Kim Nava	Queen's University, Kingston, Ontario Queen's University, Kingston, Ontario Queen's University, Kingston, Ontario
70PF	Modelling 5B - 4	Méthode Physique D'Estimation D'une Précipitation Maximale Probable Sur Un Bassin Non Jaugé	Josée	Beauchamp	Université de Québec Ecole de technologie superior

Monitoring & Standards 5D Room: 1008 "**Guidelines For GHG Inventories and Reduction Credits**" - Session Chair - Jim McConnach (IEEE Canada)

73PF	Mon & Std 5D-1	The Role of Industry Guidelines in Harmonizing Methodology for Estimating GHG Emission Reductions from Carbon Capture and Storage Projects	Karin J. T. M.	Ritter Keating Shires Lev-On	API BP America Inc URS Corp The LEVON Group, LLC
111PRF	Mon & Std 5D-2	Making It Easier for Clean Technologies to Get Returns From GHG Credits	Tom	Baumann	Climate - Check
114AF	Mon & Std 5D-3	Establishing a Greenhouse Gas Inventory and Reduction Goal - Case Study	Greg Shannon L.	Carli Richardson	Connestoga - Rovers & Associates Connestoga - Rovers & Associates

Bio-Refining 5E Room: 1016 - "**Bio-Refining**" - Session Chair: Catherine Mulligan (Concordia University)

18PF	Bio-Refine 5E-1	Assessment Of The Carbon Dioxide Impacts And Energy Balance	John	Abraham	University of St. Thomas, Minnesota
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		of Bio Fuels	Fushcia-Ann Hoover	University of St. Thomas, Minnesota
176PF	Bio-Refine 5E-2	Bio Fuel Merits in Basket of Energy	H. Banijamali	University of Toronto
			A. Badakhshani	University of Toronto
51PRF	Bio-Refine 5E-3	Development of Water Consumption Factors for Biomass Utilization Pathways	Shikhar Singh	University of Alberta
			Amit Kumar	University of Alberta

5:00 PM Close Day 2 Sessions

6:30 PM **Conference Banquet - LIUNA STATION, Hamilton, by conference bus**

to The **Honourable John Gerretson**, Ontario Minister of the Environment

10:30 PM After Dinner Speaker - **Mr. Duncan Hawthorne**, President and Chief Executive Officer, Bruce Power LLP

Day 3 **Friday May 15,2009**

Time	Event
7:00 AM	Continental Breakfast - Location tba - (7:00am - 8:15am) Speaker Breakfast - Room 1009
7:30 AM	Registration (7:30am - 4:30pm)

8:00 AM **PLENARY SESSION 3 - ENGINEERING OF SMART TECHNOLOGIES**

Room: 1105

1 - Moderator and Opening Speaker - Thomas F. Garrity, Vice President, Sales and Business Development
Siemens Power Transmission & Distribution, Inc.

"Getting Smart: An Overview of Smart Technologies In Power Networks"

PS189 2 - Malcolm Metcalfe, CTO, Sempa Power

"A Century of Reaction Brings Crisis and Opportunity"

3 - Frank Fabiano, Director Customer Services, Horizon Utilities Corp., Hamilton, Ontario

"Smart Metering Implementation"

PS186 4 - Alexandre Sorokine, Oak Ridge National Laboratories, Oakridge, Tennessee

"Integrative Real-Time Geographic Visualization Of Energy Resources"

10:00 AM Refreshment Break / Networking - Foyer

10:30 AM **PARALLEL TOPICS SESSION 6**

Mitigation 6A - Room: 1105 - **"Mitigation VI"** - Session Chairs: Catherine Mulligan (Concordia U) & Nigel Fitzpatrick (Azure Dynamics Corporation)

33PF	Mitigation 6A - 1	An Innovative Treatment Method For An Aqueous Waste From The	Mahmood Alimahmoodi	Concordia University
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		Enhanced Oil Recovery Process	Catherine Mulligan	Concordia University
146PR	Mitigation 6A - 2	Emerging Large Scale Solar Heating Applications	Larry W.P.	McClung Wong Science Applications International Corporation (SAIC Canada) Science Applications International Corporation (SAIC Canada)
23PF	Mitigation 6A - 3	Electric Drive Choices For Light, Medium, and Heavy Duty Vehicles To Reduce Their Climate Change Impact For Canada	Nigel Fitzpatrick	Acquire Innovations, Vancouver, BC
Modelling 6B Room: 1010 - " Modelling VI " - Session Chair: Jack Jesweit (Queen's U)				
77PF	Modelling 6B - 1	Thermodynamic Contributions of Deforestation To Global Climate Change	Andrew T. Bell	
74PRF	Modelling 6B - 2	Design & Analysis of Small Scale Vertical - Axis Wind Turbines for Roof Top Power Generation	John P. G.S. R.A.	Abraham Mowry Erickson University of St. Thomas, Minnesota University of St. Thomas, Minnesota University of St. Thomas, Minnesota
65	Modelling 6B - 3	Evaluating Effects Of Atmospheric Carbon Dioxide On Stability Of Global Climate - A Cell To Cell Mapping Approach	X. L. C.Q.	Liu Huang Jia Chongqing U, China Chongqing U, China University of Toronto
113PR	Modelling 6B - 4	Water Budget Studies In Ontario	David Van Viet	Aqua Resource Inc.
Adaptation 6E Room: 1009 - " Vulnerability To Climate Change " - Session Chair: Ross Rettie (Retired)				
PF75	Adaptation 6E - 1	Climate Change Impacts and Adaptation Strategies For The Forest Sector In Canada	M. S. G. T. K.	Johnston Webber O'Neill Williamson Hirsch Saskatchewan Research Council Canadian Forest Service BC Ministry of Forests and Ranges Canadian Forest Service Canadian Forest Service
168PF	Adaptation 6E - 2	Roads And Associated Structures: Infrastructure Impacts, Vulnerabilities, And Design Considerations For Future Climate Change	Susan David	Tighe Lapp University of Waterloo Engineers Canada
172PF	Mon & Std 4D-3	Adapting Canada's Northern Infrastructure to Climate Change: The Role of Codes and Standards	Paul Steenhof	Canadian Standards Association

12:00 noon **LUNCH / NETWORKING - McMaster University Student Centre, Room 319**

1:30 PM **CLOSING PLENARY**
Room: 1105

1 - Richard Normandin, Vice President, Physical Sciences, National Research Council
"Science At Work For Canada - NRC's Strategy Approach To Providing Science and Technology Solutions Towards Canada's Priorities In Sustainable Energy and Environment"

PS187 2 - Marc Rosen, President, Engineering Institute of Canada
"Climate Change and Sustainable Energy: Actions and Transition to a Lower Carbon Economy"

PS188 3 - Moderator and Keynote Speaker - The Right Honourable Edward Schreyer, Former Governor General of Canada
"Have any lessons been learned as a result of the past two decades of laissez faire in fiscal / monetary policy,energy / environmental policy (or lack there of)?"

3:30 PM CLOSE OF CONFERENCE