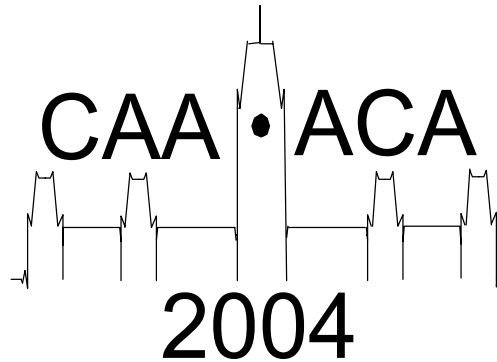


Canadian Acoustical
Association

Association Canadienne
d'Acoustique



Lord Elgin Hotel
Ottawa, Ontario
6-8 October/Octobre 2004

**Conference
Programme**

**Programme
du Congrès**

Conference Organising Committee:

John Bradley, Convenor
National Research Council

Brad Gover, Technical Chair
National Research Council

Christian Giguère, Student Awards & Translations
University of Ottawa

Hugh Williamson, Exhibits
Hugh Williamson Associates Inc.

Alf Warnock, Webmaster
National Research Council

Frances King, Audio-Visual
National Research Council

Sponsors:

Souvenir Portfolios:

Jade Acoustics Inc. <http://www.jadeacoustics.com>

Coffee/Tea Breaks:

LogiSon Acoustic Network <http://www.enviraco.com>

Brüel & Kjær North America <http://www.bkhome.com>

Eckel Industries of Canada Limited <http://www.eckel.ca>

Durisol Inc. <http://durisol.com>

Kinetics Noise Control/Vibron Products Group <http://www.kineticsnoise.com/vibron/vrs>

Exhibitors:

LogiSon Acoustic Network <http://www.enviraco.com>

Scantek Inc. <http://www.scantekinc.com>

Dalimar Instruments Inc. <http://www.dalimar.ca>

Brüel & Kjær North America <http://www.bkhome.com>

H. L. Blachford Ltd. <http://www.blachford.ca>

Novel Dynamics Inc. <http://www.noveldynamics.com>

Eckel Industries of Canada Limited <http://www.eckel.ca>

Acoutherm Insulation Limited <http://www.acoutherm.com>

Can-Cell Industries Inc. <http://www.can-cell.com>

Norseman Allfoam Industries Ltd. <http://allfoam.bc.ca>

Durisol Inc. <http://durisol.com>

Kinetics Noise Control/Vibron Products Group <http://www.kineticsnoise.com/vibron/vrs>

Conference Calendar

Wednesday	AM	Plenary: “Outdoor Sound Propagation” <i>Gilles Daigle</i>		
		Outdoor Sound	Signal Processing I	Hearing and the Workplace
	Guidelines for Environmental Noise	Lunch		
	PM	Guidelines for Environmental Noise (cont.)	Signal Processing II	Acoustics of Educational Facilities
	5:30	Open Meeting: ANSI/CSA Working Group on ISO 9613(2)		
	6:30	Open Meeting: Industrial Noise Subcommittee		
	7:30	Open Meeting: Standards Council Committee for TC 43, TC 43 SC1		
	8:30	Open Meeting: Main CSA Acoustics Committee		

Thursday	AM	Plenary: “From Acoustics to Cognition: Some Surprising Results” <i>Bruce Schneider</i>		
		Instrumentation and Measurements	Signal Processing III	Acoustical Materials
	Lunch			
	PM	Sound Transmission and Room Acoustics	Underwater Sound	Speech Understanding and Psychoacoustics
	5:00	CAA Annual General Meeting (All Welcome)		
	6:30	Reception (Cash Bar) – <i>Fountain Room, National Arts Centre</i>		
7:30	Banquet – <i>Fountain Room, National Arts Centre</i>			

Friday	AM	What's new at NRC-IRC?	Hearing Aids	Noise Emission and Noise Control
	Lunch			
	PM	Laboratory Tours – Information and Signup at Registration Desk		

Wednesday Morning 06 October 2004

8:50	Conference Welcome and Opening Remarks – Lady Elgin Room		
9:00	Plenary – Lady Elgin Room (Chair: Michael R. Stinson) “Outdoor Sound Propagation”, <i>Gilles A. Daigle</i>		
9:40	Coffee Break Sponsored by Kinetics Noise Control/Vibron Products Group – Ontario Room		
	Outdoor Sound - Lady Elgin Room (Chair: Cameron Sherry)	Signal Processing I – Macdonald Room (Chair: Scott Norcross)	Hearing and the Workplace - Quebec Room (Chair: Christian Giguère)
10:00	Woodyard sounds in the community <i>Cameron W. Sherry</i>	Acoustic Signal Processing Developments for Non-Invasive Monitoring of Vital Signs and Ultrasound Intracranial Systems <i>Stergios Stergiopoulos</i>	Risk factors for noise-induced hearing loss in Canadian Forces personnel <i>Sharon M. Abel and Stephanie Jewell</i>
10:20	Estimating community noise in a standard way: a discussion about and the status of ISO 9613-2 <i>Richard J. Peppin</i>	Performance of ultrasonic imaging with frequency-domain SAFT <i>D. Lévesque, A. Blouin, C. Néron and J.-P. Monchalain</i>	Hearing loss prevention in the military environment <i>Christian Giguère and Chantal Laroche</i>
10:40	Validation of ISO 9613 Part 2 <i>Ramani Ramakrishnan, Colin Novak, Helen Ule, and Robert Gaspar</i>	Analysis and Synthesis of the GuQin, a Chinese Traditional Instrument. <i>Ying Ding and David Gerhard</i>	Future directions for research on the combined effects of noise and vibration on cognition and communication <i>Ann M. Nakashima and Sharon M. Abel</i>
	Guidelines for Environmental Noise - Lady Elgin Room (Chair: Stephen Bly)	Panoram: Combining Panoramic Video with Acoustic Beamforming for Videoconferencing <i>David Green and Mark Fiala</i>	Noise Exposure Assessment – A New ISO Standard <i>Alberto Behar</i>
11:00	National Guidelines for Environmental Assessment: Health Impacts of Noise <i>Stephen Bly, David Michaud, Stephen Keith, Carl Alleyne, and Diane McClymont-Peace</i>		
11:20	The Current State of Noise Requirements for Federal Environmental Assessment Purposes <i>R. L. Scott Penton, Peter Vandelden, and David Chadder</i>	Audio for Committee Rooms <i>Jeff Bamford</i>	Étude de l'exposition professionnelle au bruit des conducteurs d'autobus scolaires <i>Pierre Marcotte, Paul-Émile Boileau, et Jérôme Boutin</i>
11:40	Environment noise impact assessment in Quebec <i>Jean-Luc Allard</i>	Human-centered design of acoustic and vibratory components for multimodal display systems <i>William L. Martens</i>	Music teachers' noise exposure <i>Dejan Zivkovic and Peter Pityn</i>
12:00	How Urban Hum Became the Noise Limit in Ontario <i>Tim Kelsall</i>	Extracting Semantically-Coherent Keyphrases from Speech <i>Diana Inkpen and Alain Desilets</i>	New method and device for customizing in situ a hearing protector. <i>J. Voix and F. Laville</i>
12:20	Lunch – Pearson Room		

Wednesday Afternoon 06 October 2004

	Guidelines for Environmental Noise (cont'd) <i>Quebec Room</i> (Chair: Stephen Bly)	Signal Processing II – Macdonald Room (Chair: David Havelock)	Acoustics of Educational Facilities <i>Lady Elgin Room</i> (Chair: John Bradley)
1:40	Application of environmental noise guidelines – two case studies <i>Ramani Ramakrishnan</i>	Maintaining speech intelligibility in communication headsets equipped with active noise control <i>A. J. Brammer, D. R. Peterson, M. G. Cherniack, S. Gullapalli and R. B. Crabtree</i>	Speech Recognition by Grades 1, 3 and 6 Children in Classrooms <i>John Bradley and Hiroshi Sato</i>
2:00	Developing Noise Control Legislation (Silencing the Critics) <i>Anita Lewis and David DeGagne</i>	Speaker Recognition in Reverberant Environments <i>Joseph Gammal and Rafik Goubran</i>	Questionnaire study of the effect of renovations on student perception of the listening environments in university classrooms <i>Murray Hodgson and Hugh Davies</i>
2:20	On Environmental Noise Impact Assessments: an Alberta Perspective <i>Corjan Buma</i>	A Recursive Least-Squares Extension of the Natural Gradient Algorithm for Blind Signal Separation of Audio Mixtures <i>M. ElSabrouy, T. Aboulnasr, and M. Bouchard</i>	Speech recognition in classroom noise by school-age children <i>Michel Picard, Tony Leroux, Benoit Juras</i>
2:40	Assessment and mitigation of community noise impacts from major highway projects – a proponent’s approach <i>C.W. Wakefield and M.J. Kent</i>	A Kalman Filter with a Perceptual Post-filter to Enhance Speech Degraded by Colored Noise <i>Ning Ma, Martin Bouchard, and Rafik. A. Goubran</i>	Impact of noise on academic skills in elementary school-aged children <i>Prudence Allen, Nashlea Brogan, Chris Allan and Michelle Baker</i>
3:00	Environmental Assessments of Rail Projects - the Noise Factor <i>Bill Aird</i>	Improved Packet Loss Concealment for PCM VoIP <i>Qi Li, Maha M. ElSabrouy, Martin Bouchard</i>	Investigation of the optimum acoustical conditions for speech using auralization <i>Wonyoung Yang and Murray Hodgson</i>
3:20	Coffee Break Sponsored by Durisol Inc. – Ontario Room		
3:40	Aircraft noise information for public consumption <i>Tom Lowrey</i>	Modified Spread Spectrum Audio Watermarking Algorithm <i>Libo Zhang, Sridhar Krishnan and Heping Ding</i>	Characteristics of the noise, reverberation time and speech-to-noise ratio found in day-care centers <i>Michel Picard</i>
4:00	Event-related potential measures of sleep disturbance by obtrusive acoustic stimuli <i>Kenneth Campbell and Alexandra Muller-Gass</i>	A Survey of Double-talk Detection Schemes for Echo Cancellation Applications <i>Thien-An Vu, Heping Ding, Martin Bouchard</i>	Classroom Acoustics and Architects <i>Terence Williams</i>
4:20	Aircraft noise and sleep disturbance: A review of field studies <i>David S. Michaud</i>	Double-Talk Detection Schemes for Echo Cancellation <i>Heping Ding and Frank Lau</i>	Canadian Acoustical Design Standards for K-12 Schools <i>Darron Chin-Quee, Nadine Munro, and R.L. Scott Penton</i>
4:40	Discussion	Parallel recognizer algorithm for automatic speech recognition <i>Akakpo Agbago and Caroline Barrière</i>	Design of a Classroom for Deaf / Hearing Impaired Student Educators <i>Darron Chin-Quee and Scott Penton</i>
5:00		On the stochastic properties of the neural encoding mechanism of sound intensity <i>Liz C. Chang, Willy Wong</i>	
5:30	Open Meeting: ANSI/CSA Working Group on ISO 9613(2) – Tim Kelsall/Rich Peppin – <i>Board Room 500 (5th floor)</i>		
6:30	Open Meeting: Industrial Noise Subcommittee – Stephen Bly – <i>Board Room 500 (5th floor)</i>		
7:30	Open Meeting: Standards Council Committee for TC 43, TC 43 SC1 – Stephen Keith – <i>Board Room 500 (5th floor)</i>		
8:30	Open Meeting: Main CSA Acoustics Committee – Tim Kelsall – <i>Board Room 500 (5th floor)</i>		

Thursday Morning 07 October 2004

8:50	Exhibit Opening Remarks – Lady Elgin Room		
9:00	Plenary – Lady Elgin Room (Chair: Kathy Pichora-Fuller) “From Acoustics to Cognition: Some Surprising Results”, <i>Bruce A. Schneider</i>		
9:40	Coffee Break Sponsored by Brüel & Kjær – Ontario Room		
	Instrumentation and Measurements <i>Lady Elgin Room</i> (Chair: George Wong)	Signal Processing III – Macdonald Room (Chair: Heping Ding)	Acoustical Materials – Quebec Room (Chair: Raymond Panneton)
10:00	Laboratory Accreditation of the Acoustical Standards Program at the Institute for National Measurement Standards <i>George S. K. Wong, Lixue Wu, and Won-Suk Ohm</i>	Evaluation of Objective Measures of Loudness <i>Gilbert A. Soulodre</i>	Sound radiation from poroelastic materials <i>F. C. Sgard and N. Atalla</i>
10:20	Acoustic audit of environmental noise impact assessment <i>C. A. Krajewski</i>	Audio processing in police investigations <i>David Luknowsky and Jeff Boyczuk</i>	From Microstructure to Acoustic Behaviour of Porous Materials <i>C. Perrot, R. Panneton, and X. Olny</i>
10:40	Measuring with Sound Level Meters: The real difference between Type 1 and Type 2 <i>Richard J. Peppin</i>	Aspects of Inverse Filtering for Loudspeakers <i>Scott G. Norcross</i>	A missing mass method to measure the open porosity of porous solids <i>Emmanuelle Gros and Raymond Panneton</i>
11:00	Angular Response of a Sound Intensity Probe at High Frequencies <i>Stephen Keith and Vincent Chiu</i>	Extension of the aggregate beamformer to filter-and-sum beamforming <i>David I. Havelock</i>	Acoustic Properties of Loose and Consolidated Granulates <i>Kirill V. Horoshenkov, Siow N. Ting, Ian Rushforth, and Mark J. Swift</i>
11:20	The effect of mass loading on the sensitivity of shock accelerometers <i>Lixue Wu, George S. K. Wong, Peter Hanes, and Won-Suk Ohm</i>	Practical applications of conformal microphone arrays <i>Stéphane Dedieu</i>	Influence of micro-structural properties on the acoustic performances of novel metallic foams <i>Dominic Pilon, Raymond Panneton, Franck Sgard, and Louis-Philippe Lefebvre</i>
11:40	Motion of microobject induced by the resonant vibration via acoustic power <i>Yujie Han, Furuichi Takuya, and Yuji Furukawa</i>	Acoustic pulse propagation through stably stratified lower atmosphere <i>Igor Chunchuzov and Sergey Kulichkov</i>	Designing layered sound absorbing materials <i>Youssef Atalla</i>
12:00	Lunch – Pearson Room		

Thursday Afternoon 07 October 2004

	Sound Transmission and Room Acoustics <i>Lady Elgin Room</i> (Chair: Corjan Buma)	Underwater Sound – Macdonald Room (Chair: Nicole Collison)	Speech Understanding and Psychoacoustics <i>Quebec Room</i> (Chair: Kathy Pichora-Fuller)
1:20	Wave propagation in curved laminate composite structures <i>Sebastian Ghinet, Noureddine Atalla, Haisam Osman</i>	Beamforming a Bent Array <i>Brian Maranda and Nicole Collison</i>	Effet de l'éclairage et du teint du locuteur sur l'intelligibilité visuelle de la parole <i>Ariane Laplante-Lévesque et Jean-Pierre Gagné</i>
1:40	On transmission of structure borne power from wood studs to gypsum board mounted on resilient metal channels – Part 1: Force and moment transmission <i>Andreas Mayr and T.R.T. Nightingale</i>	Data error estimation in matched-field geoacoustic inversion <i>Stan E. Dosso, Michael J. Wilmut, and Jan Dettmer</i>	Vision and Speech Perception <i>Julie N. Buchan and Kevin G. Munhall</i>
2:00	On transmission of structure borne power from wood studs to gypsum board mounted on resilient metal channels – Part 2: Some simplifications for modelling <i>T.R.T. Nightingale and Andreas Mayr</i>	Geoacoustic Inversion With Strongly Correlated Data Errors <i>Jan Dettmer, Stan E. Dosso, and Charles W. Holland</i>	Predicting speech perception in noisy environments from the clinical HINT <i>C. Laroche, C. Giguère, S. Soli, V. Vaillancourt</i>
2:20	Forward and Reverse Transmission Loss Measurements <i>A.C.C. Warnock</i>	SWAMI and ASSA for Geoacoustic Inversion <i>James A. Theriault and Colin Calnan</i>	Does a continuous masker make speech comprehension in noise effortful? <i>Antje Heinrich and Bruce A. Schneider</i>
2:40	Impact Sound Ratings: ASTM versus ISO <i>A.C.C. Warnock</i>	Field trials of geophones as arctic acoustic sensors <i>Stan E. Dosso, Garry J. Heard, Michael Vinnins, and Slobodan Jovic</i>	The influence of spectral and temporal acuities in hearing on speech intelligibility <i>Gaston Hilkhuyzen, Tammo Houtgast, and Joost Festen</i>
3:00	Coffee Break Sponsored by Eckel Industries of Canada – Ontario Room		
3:20	Practical Guidance for Seismically Restraining Piping and Ductwork <i>Paul Meisel</i>	Aural Analysis of the Harmonic Structure of Sonar Echoes <i>G. Robert Arrabito, Nancy Allen, Taresh D. Mistry, and Kyle Leming</i>	Hearing One or Two Voices: F0 and Vowel Segregation in Younger and Older Adults <i>Tara Vongpaisal and Kathy Pichora-Fuller</i>
3:40	Case Study: Retrofit Acoustic Treatments in a Heritage Apartment Building <i>Hugh Williamson</i>	The story behind the June 2004 issue of <u>Canadian Acoustics</u> <i>Francine Desharnais</i>	Perceived Spatial Separation Induced by the Precedence Effect Releases Chinese Speech from Informational Masking <i>J. Chen, C. Wang, H. Qu, W. Li, Y. Wu, X. Wu, B. A. Schneider, L. Li</i>
4:00	Using a spherical microphone array for identification of airborne sound transmission paths <i>Bradford N. Gover</i>		Location-Based Auditory Inhibition of Return Is Perceptually Driven <i>C. Wang, Y. Wang, H. Wu, Q. Huang, T. Qu, X. Wu, X. Zhou, L. Li</i>
4:20	Les lieux de la musique au Québec ; acoustique de six salles de concert <i>Jean-François Hardy et Jean-Gabriel Migneron</i>		Peripheral versus central processing of a gap between two complex tones in young and old adults <i>S. de la Rosa, A. Heinrich, and B. A. Schneider</i>
4:40	Comparison and validation of prediction models based on Modal and Image-Phase methods <i>Galen Wong</i>		Detection of Uncorrelated Sound Fragment Embedded in Correlated Noise Sounds: A Measurement of the Interaural Memory and Auditory Aging <i>Juan Huang, Xihong Wu, James G. Qi, Bruce A. Schneider, Liang Li</i>
5:00	CAA Annual General Meeting (All Welcome) – Lady Elgin Room		
6:30	Reception (Cash Bar) – Fountain Room, National Arts Centre		
7:30	Banquet – Fountain Room, National Arts Centre		

Friday Morning 08 October 2004

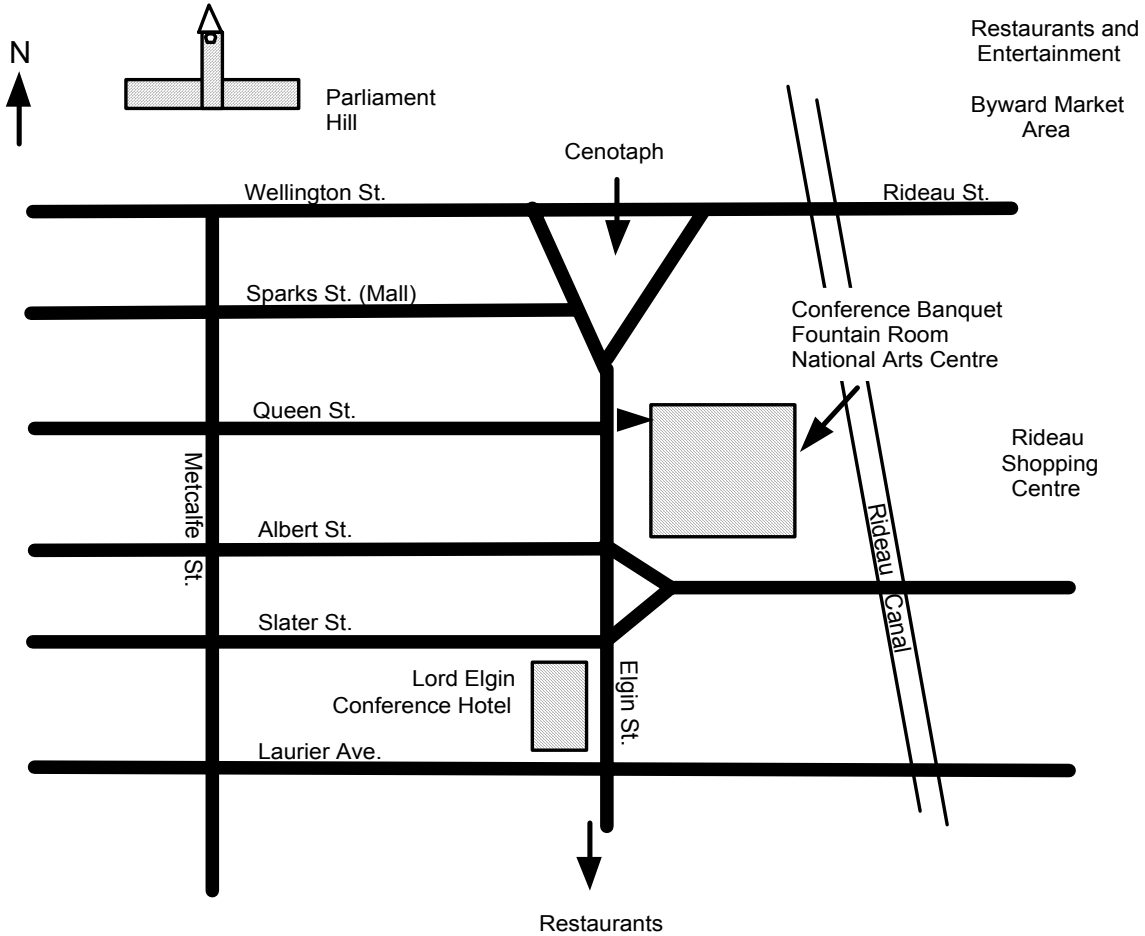
8:00	What's new at NRC-IRC? <i>Lady Elgin Room</i> (Chair: Dave Quirt)	Hearing Aids – Macdonald Room (Chair: Vijay Parsa)	Noise Emission and Noise Control <i>Quebec Room</i> (Chair: Stephen Keith)
			Simple a priori selection of sound power measurement standards <i>Stephen Keith</i>
8:20			Availability of noise emission data for machinery sold in Canada: a pilot survey <i>Stephen Bly and Bhawani Pathak</i>
8:40			Use of sound quality metrics for the analysis of automotive intake noise <i>Colin Novak, Helen Ule and Robert Gaspar</i>
9:00	Acoustical Design of Open-Plan Offices <i>J.S. Bradley</i>	Multiband compression and contrast-enhancing frequency shaping in hearing aids. <i>Ian C. Bruce, Shahab U. Ansari, Harjeet S. Bajaj and Kamran Mustafa</i>	Comparison of experimental and modeled insertion loss of a complex multi-chamber muffler with temperature and flow effects <i>Helen Ule, Colin Novak, Tony Spadafora, Ramani Ramakrishnan, and Robert Gaspar</i>
9:20		Machine learning and the auditory nerve <i>Jeff Bondy, Ian C. Bruce, Sue Becker, and Simon Haykin</i>	Acoustic Analysis of MRI Scanners <i>Wei Shao and Chris K. Mechefske</i>
9:40	Methods for assessment of architectural speech security of closed offices and meeting rooms <i>Bradford N. Gover and John S. Bradley</i>	Onset of feedback howl in hearing aids <i>Michael R. Stinson and Gilles A. Daigle</i>	The Influence of Area and Aspect Ratio on Sound Power Splitting at Duct Branches <i>Werner Richarz and Harrison Richarz</i>
10:00		Real-time Feedback Cancellation in Hearing Aids <i>Horst Arndt and Henry Luo</i>	The inexpensive noise control method, a case study <i>Ramani Ramakrishnan</i>
10:20	Coffee Break Sponsored by LogiSon Acoustic Network – Ontario Room		
10:40	Studies of Sound Transmission through Floors and Walls at NRC <i>Alf Warnock</i>	A Low-noise Directional Microphone System <i>Jim Ryan and Brian Csermak</i>	Expériences sur le niveau de bruit des ventilateurs domestiques personnels <i>Annie Ross, Marie-Josée Boudreau</i>
11:00		Objective and Subjective Evaluation of Noise Reduction Algorithms for Hearing Aids <i>Vijay Parsa, Gurjit Singh, Guo Chen, and Karthikeyan Umapathy</i>	Tire Noise Assessment of Asphalt Rubber Crumb Pavement <i>Steven Bilawchuk</i>
11:20	Design principles and details for control of flanking transmission in wood framed multifamily construction <i>T.R.T. Nightingale, R.E. Halliwell, J.D. Quirt</i>	Advanced Measures of Bone Anchored Hearing Aids: Do They Correlate with Perceptual Judgments? <i>W. E. Hodgetts, G. Chen, and V. Parsa</i>	Development of a sound masking system for road construction noise <i>Tony Leroux, Jean-Pierre Gagné, Pierre André, and Line Gamache</i>
11:40			Effectiveness of noise barriers tilted towards the traffic way over bridges <i>M.A. Ibrahim, M.A Kenawy, M. abd el Gawad Saif, and A.A Mahmoud</i>
12:00	Lunch, Announcement of Student Presentation Awards, and Conference Closing Remarks – Pearson Room		
1:20	Laboratory Tours – Information and Sign-up Sheet at Registration Desk		

CAA Conference Banquet

Time: Thursday October 7, Reception (cash bar) at 6:30 PM, Dinner at 7:30 PM

Location: Fountain Room at the National Arts Centre

Directions: The National Arts Centre is on the opposite side of Elgin St. to the Lord Elgin Hotel. When you leave the Lord Elgin Hotel, turn left and walk 2 blocks north on Elgin Street. The National Arts Centre will then be immediately across the street. Although you can enter from Elgin St., the main entrance to the National Arts Centre is on the far side of the building (east side) facing the Rideau Canal. Walk around the north end of the National Arts Centre complex to reach the main entrance and foyer. The Fountain Room is one floor above the main entrance foyer.



Meeting Room Locations in Lord Elgin Hotel

