CONFERENCE PROGRAM

DAY 1	Tuesday October 3			
15:00-18:30	CAA Board of Directors (on invitation only); Room : DOLLARD			
16:00-22:00	Advanced Registration			
18:30-20:30	Welcome Reception; Room: FOYER REGENCE ABC			

DAY 2	Wednesday October 4			
8:30-17:30	Exhibition / Trade show ; FOYER REGENCE ABC			
8:50-9:00	Welcome Note; REGENCE BC			
9:00-10:00	**Keynote : Christian Giguère (Univ. of Ottawa);** REGENCE BC			
10:00-10:20	Coffee break - Supported by Dalimar - FOYER REGENCE ABC			
Room	REGENCE A	VICTORIA	CARTIER A	CARTIER B
10:20-12:20	**Architectural and Building Acoustics**	**Hearing Protection**	**Speech and Hearing**	**Environmental Noise**
12:20-13:20	Lunch - REGENCE BC			
13:20-15:00	**Architectural and Building Acoustics**	**Hearing Protection**	**Speech and Hearing**	**Education in Acoustics**
15:00-15:20	Coffee break - Supported by HBK - FOYER REGENCE ABC			
15:20-17:20	**Architectural and Building Acoustics**	**Hearing Protection**	**Speech and Hearing**	**Artificial Intelligence in Acoustics**
17:20-18:00		**General Acoustics**		
18:15-20:00	Reception at EERS (open to all, on reservation only) / Beer&Pizza (only for students and volunteers)			

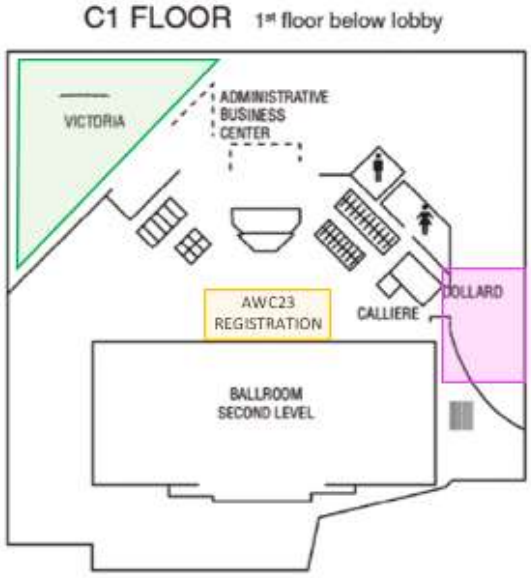
DAY 3	Thursday October 5			
8:30-17:00	Exhibition / Trade show ; FOYER REGENCE ABC			
8:50-9:00	Welcome Note ; REGENCE BC			
9:00-10:00	**Keynote : Noureddine Atalla (Univ. of Sherbrooke)**; REGENCE BC			
10:00-10:20	Coffee break - Supported by LogiSon - FOYER REGENCE ABC			
Room	REGENCE A	VICTORIA	CARTIER A	CARTIER B
10:20-12:00	**Architectural and Building Acoustics**	**Hearing Protection**	**Speech and Hearing**	**Materials for noise and vibration control**
12:00-13:00	Lunch - REGENCE BC			
13:00-15:00	**General Acoustics**	**Environmental Noise**	**Speech and Hearing**	**Materials for noise and vibration control**
15:00-15:20	Coffee break - FOYER REGENCE ABC			
15:20-17:00	**General Acoustics**	**Aeroacoustics**	**Biomedical Acoustics**	**Materials for noise and vibration control**
17:15-18:15	CAA Annual General Meeting (open to all CAA members) (REGENCE A)			
18:15-19:00	Coktail (FOYER REGENCE ABC) + PowerPoint Karaoke (REGENCE A)			
19:00-21:30	Gala Banquet - Supported by Pliteq (included to all delegates with the 3-day registration) (REGENCE BC)			
21:30-22:30	Music Jam Session (open to all)			

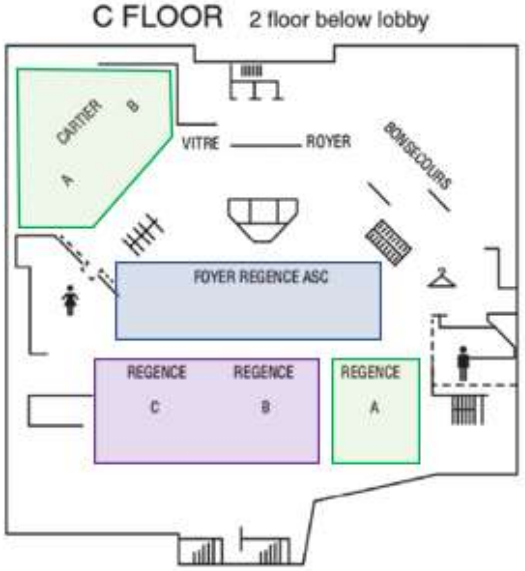
DAY 4	Friday October 6			
8:50-9:00	Welcome Note ; REGENCE BC			
9:00-10:00	**Keynote : Fabrice Marandola (Univ. McGill)**; REGENCE BC			
10:00-10:20	Coffee break - Supported by EERS; FOYER REGENCE ABC			
Room	REGENCE A	VICTORIA	CARTIER A	CARTIER B
10:20-12:20	**General Acoustics**	**Environmental Noise**	**Underwater Acoustics**	**Materials for noise and vibration control**
12:30-13:00	Award Ceremony and Closing Remarks			
12:20-13:00	Lunch - REGENCE BC			
14:00-16:00	Visit 1: Exclusive tour of CIRMMT (reservation required) Visit 2 : Exclusive tour ICAR (reservation required) Visit 3 : Exclusive visit of the Maison symphonique (reservation required)			

Note #1: All contributed presentations are scheduled for 18 minutes (15 minutes + 3 for questions)

Note #2: A "NoiseCapture" party is scheduled during this acoustic week to map the noise of Montréal. Download the app and input the code "AWC23" when conducting your measurements. Make sure to visit our booth for further details (and calibrate your smartphone).

MAP OF THE CONFERENCE CENTER





Parking is easy there, as is access to public transportation and the Central Station.
Plaza centre-ville: 777, boul. Robert-Bourassa, Montréal, QC, H3A 0B1
Parking lot entrance: 800 rue Gauvin
Web site: **https://plazapmg.com/plaza-centre-ville/**

PLENARY SPEAKERS

Christian Giguère is Professor in Audiology and Speech-Language Pathology at the Faculty of Health Sciences at the University of Ottawa. He teaches courses in acoustics, speech science, instrumentation in audiology, and hearing aids. His research interests include speech communication, warning sound perception, hearing protection, and hearing loss prevention. He has authored over 150 journal articles, conference proceedings and book chapters. Professor Giguère is active in standards organisations and member of several national (CSA, ANSI) and international (ISO) technical workgroups on topics related to occupational hearing loss, hearing protection and audiology. He was president of the Canadian Acoustical Association (2007-2013), co-chair of the International Commission on the International Commission on the Biological Effects of Noise (2008-2014), and chair of the Technical Committee on Occupational hearing loss with the Canadian Standards Organisation (2016-2022). He is currently Associate Editor with The International Journal of Audiology and Member of the NHCA's Task Force on Auditory Situational Awareness. He is a Distinguished International Member of the Institute of Noise Control Engineering (INCE-USA).

The keynote presented by Christian Giguère is entitled: *Back-up alarms on heavy vehicles: We are moving forward!* Audible back-up alarms are installed on heavy trucks and mobile equipment to alert workers and pedestrians of safety risks during reverse operations. Prompt reaction to back-up alarms by individuals nearby reversing vehicles depends on many acoustical (e.g., sound propagation pattern behind the vehicle) and psychoacoustical (e.g., perceived urgency and ability to localize alarm, effect of hearing loss and hearing protection) factors that are not comprehensively addressed in applicable standards such as SAE J994 and ISO 9533. This presentation will summarize results from a series of four collaborative studies conducted by the University of Ottawa and the IRSST in Montreal in the past twelve years. The focus was in comparing the relative benefits of two types of devices, the widely used tonal alarm and the emerging broadband alarm.

Noureddine Atalla is a professor of Mechanical Engineering at Université de Sherbrooke. His core expertise is in computational vibro-acoustics and acoustic materials. He has authored over 200 papers in acoustics and vibration, encompassing a wide range of domains. His research includes the modeling of poroelastic and viscoelastic materials, the study of coupled fluid-structure problems, the investigation of the acoustic and dynamic response of sandwich and composite structures, as well as computational vibroacoustics. In addition to his scholarly articles, he has co-authored a book on the modeling of sound porous materials and another book on finite and boundary elements in structural acoustics and vibrations.

Over the last decade, the author's team has explored various topics related to the modeling, characterization, and development of lightweight structures and their added sound packages, with a special focus on aircraft and aerospace applications. This talk will present a review of part of this body of research. In particular, the talk will demonstrate the effectiveness of employing the transfer matrix method, along with its numerous extensions, for accurately predicting the vibroacoustic response of a wide array of lightweight structures and noise control materials. The predictive capability of the method will also be illustrated for various types of excitations and systems with structured elements judiciously placed within the structure or the materials.

Fabrice Marandola is an Associate Professor of Percussion and Contemporary Music at the Schulich School of Music of McGill University (Montreal). Previously, he was a professor of percussion at the conservatories of Angers and Grenoble in France, a pedagogy instructor at the Conservatory of Paris, and an invited professor at the Crane School of Music (SUNY-Potsdam, NY). A founding member of Canadian percussion ensemble Sixtrum, he has an active career on the New Music scene, commissioning, performing and recording new works for solo and chamber ensembles. His artistic activities have received numerous distinctions and awards from Conseil Québécois pour la Musique, Académie Charles-Cros and Montreal English Theatre Awards. Marandola holds a PhD in Ethnomusicology from Paris IV-Sorbonne and has conducted in-depth field research in Cameroon with the Langues-Musiques-Sociétés Laboratory (CNRS, France). He is currently the Director of the Centre for Interdisciplinary

Research in Music Media and Technology of Montreal (CIRMMT). As Senior Research Chair at Sorbonne-Universités (2015-16), Marandola led a multidisciplinary research project on Musical Gesture (Geste-Acoustique-Musique). Author of over 30 scientific papers, his current research focuses on the study of the conception, production and perception of instrumental gestures in percussion performance, using 3D Motion Capture and wearable eye-tracking systems.

The keynote presented by Fabrice Marandola is entitled: *From cultural conception to expert performance*. The organization of pitches and durations plays a very important role in the characterization of musical systems and may vary greatly from one culture to another. Since studies on music and sound often relate to models and examples based on the Western musical tradition, it is important to keep in mind that there are a significant variety of principles that rely on different modes of organization found across the globe: for example, not all musical systems rely on a fixed number and distribution of intervals within an octave, nor does an octave always play a structural role within a musical scale. Concrete examples taken from my field work in different cultures of Cameroon will illustrate several modes of organization of musical scales in instrumental and vocal music. While the parameters that define musical systems are implicitly or explicitly known by all members of a cultural group, individuals within these groups have their own ways to build mental representations of the music they are performing. Uncovering the layers that constitute these mental representations reveals fascinating differences between performers that share the same culture. It also brings to the forefront how expert musicians develop consummate control of their movements in time and space. Research based on motion capture and gestural analysis, as well as on experiments realized with performers playing with or without their instruments (air-playing) will illustrate how musicians develop a signature in their sound production gestures, while remaining within the parameters of their cultural musical system.

SCIENTIFIC AND SOCIAL EVENTS

Welcome reception:

The AWC 2023 Welcome Reception will take place on the evening of Tuesday, October 3. All participants are cordially invited to attend. It's an ideal opportunity to make contacts in a friendly atmosphere with other scientists, engineers and conference participants.

Gala Dinner Event:

The AWC organizing committee is planning a congress banquet after the technical sessions on Thursday, October 5. Attendance at the gala is free of charge for all participants (except those attending the individual days on Tuesday, Wednesday and Friday).

Powerpoint Karaoke:

Powerpoint Karaoke (also called Powerpoint Roulette or Battledecks) is an improv game where volunteers give a presentation from a slide deck they've never seen, taken randomly from various slide decks presented in AWC2023. The name "Powerpoint Karaoke" comes from combining "PowerPoint", the presentation software, and "karaoke," the popular singing performance game. It is a game that tests the presenter's improvisation skills, gets people laughing, and keeps everyone wondering what will happen next… Simply register for this event by selecting the appropriate option during your registration process. It will also be possible to register at the last minute at the registration desk. (Picture credits: https://www.unix-ag.uni-kl.de/~guenther/powerpoint-karaoke-logo.html)

NoiseCapture Party:

Join us during AWC23 as we embark on an exciting endeavor to map the sound environment in Montréal, not only around the conference venue but also beyond. Wondering how to accomplish this task efficiently and objectively? We have the perfect solution for you - the NoiseCapture application. This Android app, developed as part of the NoisePlanet project by CNRS and Université Gustave Eiffel, is free and open-source. With NoiseCapture, you can easily measure and share your sound environment data. To facilitate your participation, Professor Olivier Robin (an ambassador and user of NoiseCapture) along with Professor Olivier Doutres (a user of the app), have set up a dedicated booth. At the booth, we will assist you in calibrating your phone and provide all the essential information about the app. You can also explore real-life examples of how NoiseCapture has been utilized in research and education. Our collective challenge during the conference is to surpass 1000 measurements, and we will provide daily updates on our progress. So, don't miss this opportunity to contribute to the sound mapping initiative and be part of an impactful project. See you at the booth! (Picture credits: https://www.uneoreilleavertie.com/quoi-de-neuf/noise-capture-party-et-hyperacousie).

Visit 1: Exclusive tour of CIRMMT

The Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT pronounced "kermit") is housed at the Schulich School of Music at McGill University, just a couple blocks north of the AWC2023 venue. CIRMMT is a multidisciplinary research group that seeks to develop innovative approaches to the scientific study of music media and technology, to promote the application of newer technologies in science and the creative arts, and to provide an advanced research training environment. CIRMMT occupies a unique position on the international stage having developed intense research partnerships with other academic and research institutions, as well as diverse industry partners throughout the world. Several volunteers of the AWC2023 local organising committee are regular members of CIRMMT and a special tour has been arranged to let AWC2023 delegates discover this unique center and visit its new Music Multimedia Room.

Visit 2: Exclusive tour ICAR

The ICAR laboratory (Infrastructure commune en acoustique pour la recherche ÉTS-IRSST) is housed at ÉTS (École de technologie supérieure), just a couple blocks away from the AWC2023 venue. ICAR is a training and research laboratory for industrial acoustics. Its creation results from the successful collaboration between ÉTS university and IRSST occupational health research institute. ICAR allows to test, improve and develop new products or processes that are more acoustically efficient: industrial machines, tools, transportation vehicles, household appliances, acoustic materials and metamaterials and hearing protection devices. The ultimate goal of ICAR activities is to increase the comfort, health and safety of workers (and the general public) through the operation of state-of-the-art acoustic testing facilities that meet the needs of both industry and academic researchers.

Visit 3: Exclusive visit of the Maison symphonique

Inaugurated in 2011, the Maison symphonique is internationally recognized for the excellence of its acoustics. What criteria were used to achieve this excellence? Located in the heart of downtown near the metro and numerous construction sites, how was it ensured that no noise would interfere with the music played inside? How was the hall designed so that each of the 2100 spectators would benefit from the same sound quality? From the shape of the hall to the choice of materials, from the design of the seats to the choice of the ventilation system, come and discover why the Maison symphonique is a true musical showcase. The tour of the hall will be guided by Romain Dumoulin, acoustician, senior consultant at Soft dB, together with SNC Lavalin and/or Artec.

Cocktails, Labs & Ghosts:

EERS Global Technologies Inc is a Montreal-based company that sponsors the "ÉTS-EERS Industrial Research Chair in In-Ear Technologies (CRITIAS)" led by Prof. Jérémie Voix. EERS specializes in enhancing hearables with advanced hearing protection, biometric and in noise communication solutions. Nick Laperle, CEO and founder of EERS, is conveying all AWC2023 delegates interested to attend a cocktail (registration free but mandatory through the online form), at its creative facilities located on the 7th floor of INGO Innovation building at 355 Peel Street (across the street from ETS), on Wednesday October 4th, from 5:30 to 8:00 pm. Technical tours of the EERS and CRITIAS laboratories will be offered to guests followed by a famous Ghost Tour of Griffintown. For those interested in the famous Ghost Tour of Griffintown facilitated by EERS, you can find more details here: https://hauntedmontreal.com/haunted-griff. It will be offered at the discounted price of 21$ per person. The tour is approximately 90 minutes, entirely on foot and outdoors. It concludes about a 5-minute walk from the start location. A theatrical guide/storyteller is included, who will walk the group to each haunted location and tell the ghost story and history. This is classic ghost storytelling, no other actors or jump scares.

ARCHITECTURAL AND BUILDING ACOUSTICS

Chair: Wilson Byrick (Pliteq), Joonhee Lee (Concordia) and Mahn Jeffrey (CNRC)

Wednesday October 4

- **Room REGENCE A**

10:20-10:40 *Apparent Transmission Loss through Stud Walls with Mass Timber Flanking Assemblies*
Jeremy Thorbahn

10:40-11:00 *Repeatability and Reproducibility of Apparent Sound Transmission Class (ASTC) Measurements*
Henning Schlechtriem

11:00-11:20 *Case Study: Variation in ASTC Ratings with Loudspeaker Position when Using Directional Loudspeakers*
Anil Joshi

11:20-11:40 *Comparison of Predicted and Measured ASTC in a Mass Timber Structure*
Sarah Mackel

11:40-12:00 *Airborne Sound Transmission in Cross-Laminated Timber Buildings: The Influence of Building Height*
Erik Nilsson, Sylvain Ménard, Delphine Bard

12:00-12:20 *Incidence des meneaux d'un mur-rideau sur l'indice ASTC de cloisons intérieures*
Julien Fenninger

LUNCH

13:20-13:40 *Recent Experience in the Design of Music Recital Halls*
Bill John Gastmeier, Mandy Chan

13:40-14:00 *Acoustique d'un établissement hospitalier – l'agrandissement du Centre hospitalier de l'Université de Montréal (CHUM)*
Vincent Chavand

14:00-14:20 *The Acoustical Challenges for Modular Buildings used for Residential Purposes*
Paul Marks

14:20-14:40 *Amplifying Change for Music Venues in Montreal: Rethinking the Technical Regulatory Framework Towards Harmonious and Sustainable Nightlife*
Romain Dumoulin

14:40-15:00 *Quantifying the Reduction in Sound Insulation and Speech Privacy in Offices Due to Typical Design and Workmanship Errors*
Roderick KT Mackenzie

COFFEE BREAK

15:20-15:40 *Critical Importance of Acoustical Design in New Developments*
Zoe Razavi

15:40-16:00 *Publication of a New Guide from the Gouvernement du Québec About Noise Protection of Dwellings*
Jean-Philippe Migneron, Jean-Gabriel Migneron, André Potvin

16:00-16:20 *Acoustic Properties of High-Rise Wood Residential Buildings*
Raphaël Duée, Hugo Vasseur

16:20-16:40 *Acoustic Design of Floor Ceiling Assemblies in High Seismic Zones*
Aedan Callaghan, William Thrall

16:40-17:00 *Physical and Perceptual Comparison Between Single and Multiple Diffraction for Thick Edge*
Clément Girin, Alain Berry, Philippe-Aubert Gauthier, Louis-Xavier Buffoni

17:00-17:20 *Apparent Impact Insulation Class (AIIC) Testing of Various Roof Terrace Assemblies and Evaluating the Need for Additional Mitigation*
Jessica Tsang

17:20-17:40 *Online Evaluation of Floor Impact Sounds: Who is More Likely to be Annoyed? Canadians, Germans or Koreans?*
Sabrina Skoda, Markus Müller-Trapet, Young-Ji Choi, Iara Batista da Cunha, Jeffrey Mahn

17:40-18:00 *Field Measurement and Finite Element Modeling of Vibration Propagation from Heavy HardIimpacts on Fitness Flooring*
Giulio Puglielli, Simon Edwards, Brian Howe

Thursday October 5

- **Room REGENCE A**

10:20-10:40 *Contextualizing Speech Privacy Criteria in WELL/LEED Guidelines*
Dorsa Fardaei

10:40-11:00 *Speech Level Variations by Office Type and Work Environments*
Rewan Toubar, Roderick Mackenzie, Joonhee Lee

11:00-11:20 *Evaluating Ambient Noise and Reverberation in Classrooms: A Case Study of a Native school*
Daniel Paromov, Victoria Duda, Julie McIntyre, Phaedra Royle, Adriana Lacerda

11:20-11:40 *Novel Method for Reverberation Time Measurements in Natatoriums*
Adam Collins

11:40-12:00 *Noise and Sleep Quality of Aging Adults -- An Open Question*
Iara B Cunha, Ashley Nixon, Jennifer A Veitch, Hiroshi Sato, Jeffrey Mahn, Markus Müller-Trapet, Sabrina Skoda

HEARING PROTECTION

Chair: Hugues Nélisse (IRSST) and Franck Sgard (IRSST)

This session is organized in memory of our colleague and friend Simon Benacchio [1988-2023], who worked with fervor on the enhancement of artificial ears and hearing protectors.

Wednesday October 4

- **Room VICTORIA**

10:20-10:40 *Effect of Aging on the Ear Canal Morphology: Measurements on Human Subjects*
Robin Petit, Pierre Buyssens, Gwenolé Nexer

10:40-11:00 *Effect of Aging on the Ear Canal Morphology: A Large Scale Study*
Pierre Buyssens, Robin Petit, Gwenolé Nexer

11:00-11:20 *Statistical Shape Modeling of the Human Ear Canal for Designing Hearing Protection Devices and Auditory Wearables*
Farshid Ghezelbash, Katrin Braun, Amir Jafari Bidhendi, Jacob Bouchard-Roy

11:20-11:40 *Functional Discomfort of Earplugs and its Influencing Variables*
Bastien Poissenot-Arrigoni, Alessia Negrini, Djamal Berbiche, Franck Sgard, Olivier Doutres

11:40-12:00 *Evaluating Mechanical Comfort of Ear Tips: An Experimental-Computational Approach*
Amir J Bidhendi, Katrin Braun, Jacob Bouchard-Roy, Farshid Ghezelbash

12:00-12:20 *Experimental Investigation of the Static Mechanical Pressure Induced by Roll-Down Foam Earplugs*
Luiz G. C. Melo, Ahmed Dalaq, Franck Sgard, Olivier Doutres, Éric Wagnac

	LUNCH
13:20-13:40	*3D Printed Meta-Earplug for Minimizing the Occlusion Effect* **Kévin Carillo, Franck Sgard, Olivier Dazel, Olivier Doutres**
13:40-14:00	*Design Considerations to Optimize Occlusion Effect Mitigation with Acoustic Noise Cancelling Hearing Protection* **Vincent Nadon**
14:00-14:20	*Assessment of the Effect of Earplug Type, Insertion Depth and Background Noise Level on the Occlusion Effect in Laboratory Conditions* **Hugo Saint-Gaudens, Hugues Nélisse, Franck Sgard, Olivier Doutres**
14:20-14:40	*Bandwidth Extension of In-Ear Speech Through Machine Learning-Based Dynamic Equalization* **Ajin Tom, Antoine Bernier**
14:40-15:00	*Finite Element Simulation of the Ear Canal Wall Vibrations* **Simon Kersten, Chalotorn Möhlmann, Michael Vorländer**
	COFFEE BREAK
15:20-15:40	*Effects of the Hardness of Acoustic Test Fixtures' Ears on the Evaluation of Earplug's Direct Transmissions Facing High-Level Impulse Noises* **Cyril Blondé-Weinmann, Pascal Hamery, Véronique Zimpfer, Thomas Joubaud**
15:40-16:00	*Development of a Realistic Artificial Ear Dedicated to Earplugs Attenuation Measurements* **Said Ezzaf, Luiz Melo, Bastien Poissenot-Arrigoni, Hugo Saint-Gaudens, Alain Berry, Franck Sgard, Olivier Doutres**
16:00-16:20	*Measurements in the Open and Closed Ear Canal: Comparison Between Different Artificial Head Concepts* **Véronique Zimpfer, Cyril Blondé-Weinmann, Pascal Hamery, Thomas Joubaud, Franck Sgard**
16:20-16:40	*Time Domain Numerical Investigation to Assess Noise Reduction Allowed by a Non-Linear Passive Earplug Facing Impulse Noises.* **Christophe Ruzyla, Pascal Hamery, Sébastien Roth, Cyril Blonde-Weinmann**
16:40-17:00	*On the Use of Wide Dynamic Range Compression and Other Algorithms to Improve Hearing Protection of Workers with Hearing Impairment: A Preliminary Study on Speech Intelligibility* **Solenn Ollivier, Hugues Nélisse, Jérémie Voix**
17:00-17:20	*Towards Adjustable Loudness Compensation in Hearing Protectors for Musicians* **Elliot Drees, Eugénie Segers, Caroline Traube, Jérémie Voix**

Thursday October 5

- **Room VICTORIA**

10:20-10:40	*Source-Separated Dosimetry in an Active Hearing Protection Device* **Max Henry**
10:40-11:00	*Providing Focused Hear-Through on Active Hearing Protection Devices Using Dipole and Omnidirectional Outer-Ear Microphones.* **Hugo Besnard**
11:00-11:20	*Binaural Beamformer: An early Proof of Concept for Wearables Audio Devices* **Stéphane Dedieu, Thomas Padois, Jérémie Voix**
11:20-11:40	*The Effect of Training Material on the Personal Attenuation Rating Achieved by an Initially Untrained Population* **Lucas Carneiro, Lydia Behtani, Antoine Bernier**
11:40-12:00	*Development of the Subjective Evaluation Method of Hearing Protectors* **Farhad Forouharmajd, Adrian Fuente, Hadi Asady, Siamak Pourabdian**

SPEECH AND HEARING

Chair: Victoria Duda (U. de Montréal) and Rachel Bouserhal (ÉTS)

Wednesday October 4

- **Room CARTIER A**

10:20-10:40	*A 3D Voice-Hearing Simulator Co-Created by Voice Hearers and Researchers: Preliminary Sound Quality Evaluation* **Philippe-Aubert Gauthier, Kevin Zemmour, Sylvain Grignon, Bálint Demers, Catherine Lejeune, Sandrine Rousseau, Mouloud Boukala, Sofian Audry, Sylvio Arriola, Alain Berry, Kevin Whittingstall**
10:40-11:00	*Timing of Perioral Muscle Suppression in Smiled Speech* **Yadong Liu, Kyra Hung, Melissa Villasenor, Shannon Colcleugh, Eunhee Chung, Bryan Gick**
11:00-11:20	*Biomechanical Simulation of Lateral Asymmetry in Tongue Bracing* **Jasia Azreen, Connor Mayer, Yadong Liu, Arian Shamei, Ian Stavness, Bryan Gick**
11:20-11:40	*Tongue Adjustments in the Chest-Head Register Transition of Operatic Singers* **Grace Bengtson, Elena Massing, Cindy Zhao, Maria Samarskaya, Jahurul Islam, Bryan Gick**
11:40-12:00	*VOT Analysis of L1 and L2 Speakers of Itza'* **Jack Mahlmann**
12:00-12:20	*Perceptual Compensation of Intrinsic F0 Effects in English Monolingual Speakers* **Connie Ting, Meghan Clayards**
	LUNCH
13:20-13:40	*Articulation and Acoustics of Korean Liquids: A Case Study in Loanword Adaptation* **Naim Lim, Alexei Kochetov, Yoonjung Kang**
13:40-14:00	*Vowel Articulation in Closed-Skull Concussion Patients with no Language Impairment* **Arian Shamei, Bryan Gick**
14:00-14:20	*Prenasal Coarticulation and Allophonic Merger of /ɪ/ and /ɛ/ Across Dialects of English* **Irene Smith, Morgan Sonderegger**
14:20-14:40	*Variation in Articulation Rate in New Brunswick French* **Wladyslaw Cichocki, Luke Hagar, Yves Perreault**
14:40-15:00	*Creaky Voice in Canadian English: An Acoustics-Focused Method* **Jeanne Brown**
	COFFEE BREAK
15:20-15:40	*The Acoustics of Borrowed /ɚ/ in Quebec French* **Massimo Lipari**
15:40-16:00	*Speech Rate Effects on Length Distinctions in Japanese Vowels and Stops* **Hironori Katsuda, Yoonjung Kang**
16:00-16:20	*The Glottal Stop in Garo* **Cheman Baira A'gitok**
16:20-16:40	*Acoustic Variation in Speech: Contrasting Initial and Later Stages of Conversations Showing Opinion Convergence and Divergence* **Charlize Ma, Jahurul Islam, Effie Kao, Raechel Kitamura, Stephanie Wang, Marcell Maitinsky, Bryan Gick**
16:40-17:00	*Size of Velopharyngeal Opening and Nasality Measurements from Acoustic Features* **Jahurul Islam, Bryan Gick**
17:00-17:20	*Elimination of Nasality in Typical Speakers Using Forward Voice Focus, Phonetic Replacement, and Biofeedback* **Somayah Al-Ees, Tim Bressmann**
17:20-17:40	*Acoustic Analysis for Automatic Identification and Classification of Nasality in Simulated Oral-Nasal Balance Conditions using only the nasal speech signal* **Fatemeh Abnavi, Heather Flowers, Hilmi Dajani, Suzy Ahn, Tim Bressmann**
17:40-18:00	*The Temporal Modulation of Infant Directed Speech and the Role of Positive Affect* **Samin Moradi, Linda Polka**

Thursday October 5

- **Room CARTIER A**

10:20-10:40 *A New Individualized, Ecological and Immersive Approach to Measuring Noise-Related Annoyance: Feasibility Study*
Pierre H Bourez, Guillaume T Vallet, François Bergeron, Nathalie Gosselin, Philippe Fournier

10:40-11:00 *Hearing Health in Remote Quebec: A Case Study from a Native School*
Daniel Paromov, Victoria Duda, Julie McIntyre, Phaedra Royle, Adriana Lacerda

11:00-11:20 *Tinnitus Residual Inhibition Through Contralateral Acoustic Stimulation*
Bérangère Margaux Villatte, Arnaud Norena, Sylvie Hébert

11:20-11:40 *Improving the Detectability of Alarms by Adding High Harmonics*
Connor Wessel, Michael Schutz

11:40-12:00 *Classifying Sounds Encountered in Two Million YouTube Videos: Insights for the Future of Auditory Perception Research*
Andrés E. Elizondo López, Michael Schutz

LUNCH

13:00-13:20 *Investigating Gender Differences in the Perception of Human Infant Vocalizations as a Cuteness Component*
M. Fernanda Alonso Arteche, Leatisha Ramloll, Lucie Menard, Linda Polka

13:20-13:40 *A Listening Effort Based Comparative Analysis of CROS Hearing Aids and Bone-Anchored Hearing Devices for Single-Sided Deafness Patients*
Olivier Valentin, François Prévost, Don Luong Nguyen, Alexandre Lehmann

13:40-14:00 *Development of a Method to Assess In-Ear Speech Intelligibility Through Listening Effort*
Alexis Pinsonnault-Skvarenina, Philippe Chabot, Ajin Tom, Antoine Bernier

14:00-14:20 *The Analysis of Speech Perception with the Use of Hearing Protection Earplugs using the Canadian Digit Triplet Test*
Ahmed El Mawazini

14:20-14:40 *Electroacoustic Performance of Alternative Listening Devices: Candidates for Individuals with Mild to Moderate Hearing Loss?*
Alexis Pinsonnault-Skvarenina, Fabien Bonnet, Mathieu Hotton, Hugues Nélisse, Jérémie Voix

14:40-15:00 *Psychoacoustic Parameters and Ear Canal Role*
Hadi Asady, Siamak Pourabdian, Adrian Fuente, Mehdi Jalali, Ali Ahmadi, Fatemeh Ansari, Farhad Forouharmajd

MATERIALS FOR NOISE AND VIBRATION CONTROL

Chair: Thomas Dupont (ÉTS) and Raymond Panneton (U. of Sherbrooke)

Thursday October 5

- **Room CARTIER B**

10:20-10:40 *Assessment of Equivalent Properties for Multilayered Panels*
Diego Martin Tuozzo, Noureddine Atalla

10:40-11:00 *On the Use of Condensation Models for Describing Highly Damped Multilayered Structures*
Rafael da Silva Raqueti, Noureddine Atalla, Morvan Ouisse, Emeline Sadoulet-Reboul

11:00-11:20 *Adding Layers of Gypsum Board Inside the Cavity of Double Stud Walls. A Sound Idea?*
Jeffrey Mahn, Sabrina Skoda, Markus Müller-Trapet, Iara Cunha

11:20-11:40 *Added Viscous Damping of a Microperforated Plate in an Acoustic Non-Linearity Regime*
Lucie Gallerand, Mathias Legrand, Thomas Dupont, Raymond Panneton, Philippe Leclaire

11:40-12:00 *In-Situ Measurement of Acoustic Impedance in Presence of Grazing Flow*
Xukun Feng, Zacharie Laly, Noureddine Atalla

	LUNCH
13:00-13:20	*CFD Simulations of the Static Airflow Resistivity of a Perforated Solid: Effects of Size and Flow Velocity* **Alla Eddine Benchikh Lehocine, Tenon Charly Kone, Maël Lopez, Raymond Panneton, Thomas Dupont, Kévin Verdière**
13:20-13:40	*Engineered Materials for Acoustics: Metamaterials, Sonic Crystals and Calculated Microstructures* **Raymond Panneton**
13:40-14:00	*Investigations on a Periodic Acoustic Metamaterial for Multi-Tonal Noise Attenuation* **Zacharie Laly, Christopher Mechefske, Sebastian Ghinet, Behnam Ashrafi, Charly T. Kone**
14:00-14:20	*On the Use of Weakly Coupled Absorber for Low Frequency Sound Absorption* **Mohamed Amin Ben Lassoued, Edith Roland Fotsing, Annie Ross**
14:20-14:40	*Sonic Crystal Acoustic Attenuation Applied to Exhaust Air Systems* **Jeremy Plé, Tenon Charly Kone, Allaeddine Benchikh Lehocine, Raymond Panneton**
14:40-15:00	*Bragg Bands Generation in Beams and Plates for Mass Reduction and Vibroacoustic Performance* **Nicolas Bohmwald, Vania Gonzalez, Olivier Robin, Viviana Meruane**
	COFFEE BREAK
15:20-15:40	*Acoustic Metamaterials for Low-Frequency Noise Reduction: A Review* **Niloofar Rastegar Dehkordi, Davide De Cicco, David Vidal, Annie Ross**
15:40-16:00	*Method for Characterizing the Acoustic Properties of Thin Metamaterials Capable of Attenuating Broadband Noise at Low Frequencies* **Tenon Charly Kone, Sebastian Ghinet, Raymond Panneton, Anant Grewal**
16:00-16:20	*Finite Element Study of Perfect Sound Absorbing Porous Material with Periodic Conical Hole Profile* **Zacharie Laly, Noureddine Atalla, Raymond Panneton, Sebastian Ghinet, Christopher Mechefske**
16:20-16:40	*Mass-Spring Model for a Resonant Metamaterial at High Sound Pressure Level* **Maël Lopez, Alla Eddine Benchikh Le Hocine, Charly Tenon Kone, Thomas Dupont, Raymond Panneton**
16:40-17:00	*Creating Optimized Sound-Proofing Structure Via Concentrated Emulsions* **Mina Saghaei, Annie Ross, Edith-Roland Fotsing, Louis Fradette**

Friday October 6

- **Room CARTIER B**

10:20-10:40	*Development of an Eco-Acoustic Absorber Based on Local Recycled Granular Materials* **Islam Ben Amara, Raymond Panneton, Richard Gagné**
10:40-11:00	*Novel Acoustic Materials Made from Wood Processing Residues* **Suzhou Yin**
11:00-11:20	*Waste Corn Husk Fibers for Sound Absorption Applications* **Umberto Berardi**
11:20-11:40	*Mycelium Based Acoustic Panels* **Alexis Boisvert, Saïd Elkoun, Olivier Robin, Félix-Antoine Bérubé Simard**
11:40-12:00	*Acoustic Properties of Cork Fiber Reinforced Micro-Perforated Panel Made with Polylactic Acid Through Additive Manufacturing* **Umberto Berardi**
12:00-12:20	*Predicting Acoustic Absorption in Additively Manufactured Porous Microlattices: A Sensitivity Analysis Approach* **Ayoub Ait Aariba**

GENERAL ACOUSTICS

Chair: Viken Koukounian (Parklane), Mathias Legrand (McGill) and Thomas Padois (IRSST)

Wednesday October 4

- **Room VICTORIA**

17:20-17:40 *Turbulence Distortion Effect on Leading Edge Noise from Wind Turbine Blades*
Vasishta Bhargava Nukala, Chinmaya Prasad Padhy

17:40-18:00 *Characterization and Sustainable Acoustic Correction of the Mosque. Case study of two Mosques in Constantine, Algeria*
Zohra Bemaghsoula Hammou

Thursday October 5

- **Room REGENCE A**

13:00-13:20 *Value Engineering 'Acoustics' into Projects*
Michael Bolduc, Viken Koukounian

13:20-13:40 *On the Robustness of a Decoupling Procedure Used in Conjunction with an Indirect Method to Assess the Full Mobility of an Aircraft Hydraulic Pump*
Simon Prenant, Thomas Padois, Manuel Etchessahar, Olivier Doutres

13:40-14:00 *A Criterion Based on the Calculation of a Solid Angle to Assess the Quality of Acoustic Images Obtained With a Spherical Microphone Array*
Kevin ROUARD, Julien St-Jacques, Olivier Doutres, Franck Sgard, Hugues Nélisse, Loic Boileau, Alain Berry, Nicolas Quaegebeur, François Grondin, Thomas Padois

14:00-14:20 *Influence of the Scattering Effect on Acoustic Image Obtained with a Spherical Microphone Array*
Julien St-Jacques, Kevin Rouard, Franck Sgard, Hugues Nélisse, Alain Berry, Nicolas Quaegebeur, François Grondin, Loic Boileau, Olivier Doutres, Thomas Padois

14:20-14:40 *Robust Continous Health Monitoring and Occupational Safety with Hearables*
Alexandre Petrosky, Jérémie Voix, Rachel Bouserhal

14:40-15:00 *Digital Earplug Featuring Combined Noise Dosimetry and Electrocochleography: A Proof of Concept*
Adélaïde Douchet, Alexis Pinsonnault-Skvarenina, Gabrielle Crétot-Richert, Malo Richard, Valentin Pintat, Jérémie Voix

COFFEE BREAK

15:20-15:40 *Assessing Automatic Musical Mode Extraction*
Konrad Swierczek, Michael Schutz

15:40-16:00 *Use of Carillons in Building New Musical Instruments*
Rama Balike Bhat

16:00-16:20 *Detectability and Reducing Annoyance of Alarm Design Using Acoustic Structures of Musical Instruments*
Andres Eugenio Elizondo Lopez, Joseph Schlesinger, Michael Schutz

16:20-16:40 *Dynamics of Harmonic Active Sound Control with a Harmonic Acoustic Pneumatic Source*
Alexandre Schiavini

16:40-17:00 *Rigid Body Motion of Nail Guns: Modal Analysis and 2D Dynamic Modelling*
Maxime Vincent, Marc-André Gaudreau, Thomas Dupont, Pierre Marcotte

Friday October 6

- **Room REGENCE A**

10:20-10:40 *Étude sur la fréquence d'apparition d'aptonymes acoustiques et musicaux en France métropolitaine*
Odile Clavier, Nicolas Trompette, Stéphanie Viollon, Jérémie Voix

10:40-11:00 *Characterization of Typical Music Activities in China: Identification, Classification and Quantification*
Chang MIAO

11:00-11:20 *How Does Interpretation of Acoustic Features Affect Perceived Musical Emotion?*
Cameron Anderson, Jamie Ling, Michael Schutz

11:20-11:40 *Deaf Gain: Enhancements in Vibrotactile Rhythm Perception for Deaf Individuals*
Sean Alexander Gilmore, Frank Russo

11:40-12:00 *Sign Language Handshapes, Similarly to Speech Sounds, Exploit Biomechanical Endpoints*
Oksana Tkachman, Shannon Hsu, Maria Samarskaya, Cindy Zhao, Bryan Gick

12:00-12:20 *Preliminary Numerical and Experimental Studies of Active Acoustic Control of Double-Glazed Partition Walls*
Jonathan Mifundu Nzengi, Pierre Grandjean, Alain Berry, Philippe Micheau

ENVIRONMENTAL NOISE

Chair: Anthony Gérard (Soft dB), Olivier Robin (U. of Sherbrooke) and Joana Rocha (Carleton University)

Wednesday October 4

- **Room CARTIER B**

10:20-10:40 *Relationship Between Community Complaints and Noise Level During the Construction of a Large Road Infrastructure in Montréal*
Alexis Pinsonnault-Skvarenina, Véronique Guay, Renaud Leblanc-Guindon, Mathieu Carrier, Tony Leroux

10:40-11:00 *Effective Methods for Reducing Construction Noise in Densely Populated Environment*
Loic Sauvageot

11:00-11:20 *Design and Dissemination of Environmental Noise Maps: Recommendations for the Province of Québec*
Frédéric Hubert, Jean-Philippe Migneron

11:20-11:40 *Urban Noise Observatory and Management Tool - Application to Quebec Case*
Raphaël Duée, Paul Otis-Bouchart D'Orval, Djesone Gomis

11:40-12:00 *Noisemonitor: A Python Package for Sound Level Monitor Analysis*
Valérian Fraisse

12:00-12:20 *The Introduction of Acoustics in Environmental, Social and Governance (ESG) Frameworks*
Viken Koukounian, Ethan Bourdeau, Michael Bolduc

Thursday October 5

- **Room VICTORIA**

13:00-13:20 *... empty slot...*

13:20-13:40 *Designing and Evaluating Public Space Sound Installations: A Collaborative Research-Creation Approach*
Valérian Fraisse, Étienne Legast, Simone D'Ambrosio, Catherine Guastavino

13:40-14:00 *Lessons Learned Monitoring Near and Further from Wind Turbines*
William Keith Gregory Palmer

14:00-14:20 *Auralisation: A Valuable Consultation and Engagement Tool for Infrastructure Projects – Case Study of Airspace Change for a Regional Airport*
Vincent Jurdic, Calum Sharp, David Hiller, Ryan Biziorek, Caroline Harvey

14:20-14:40 *Bridging the Gap Between Sound and Non-Sound Professionals with Virtual Reality*
Richard Yanaky, Catherine Guastavino

14:40-15:00 *Effect of Acoustic Treatment and Table Dividers on Diners' Experience in a Montreal Restaurant*
Catherine Guastavino

Friday October 6

- **Room VICTORIA**

10:20-10:40 *Vibration Impacts of Tunneling in Transit Construction*
Christopher Bosyj

10:40-11:00 *Manufacturers' Sound Data – Application Experiences*
Pier-Gui Lalonde

11:00-11:20 *Is Friday the New Saturday? The Impact of Using Standard Traffic Distribution Models for Friday Traffic Data on Noise Assessment*
Kathryn Joanne Katsiroumpas, Morgan Austin

11:20-11:40 *Impact of Speed and Throttle Adjustments on FTA Noise Model in Transit Rail Analysis Including Case Study*
Ian Matthew, Anthony Amarra

11:40-12:00 *Predicting the Noise Impact of Large-Scale Battery Storage Sites in Ontario*
Hillary Fung

ARTIFICIAL INTELLIGENCE IN ACOUSTICS

Chair: François Grondin (U. of Sherbrooke)

Wednesday October 4

- **Room CARTIER B**

15:20-15:40 *Enhancing Noise Management Through Siamese Convolutional Neural Networks for Identification of Principal Sound Sources*
Jean-Pierre Côté, Marc-André Gaudreau, Sousso Kelouwani

15:40-16:00 *Wall-Pressure Spectrum Model Based on Artificial Neural Networks Predictions*
Andrea Arroyo Ramo, Michaël Bauerheim, Stéphane Moreau

16:00-16:20 *Deep Learning-Based Approach for Acoustic Source Localization in Turbulent Flows*
Arnav Joshi, Jean-Pierre Hickey

16:20-16:40 *Use of Logistic Regression Models as a Supervised Learning Algorithm to Identify Impulsive Sounds in Monitored Sound Data*
Harry Ao Cai

16:40-17:00 *Accuracies in Algorithmic Predictors of Musical Emotion*
Jackie Zhou, Cameron Anderson, Michael Schutz

17:00-17:20 *Enhancing Automatic Speech Recognition of a Regional Dialect: A Pilot Study with Québécois French*
Xinyi Zhang, Lucia Eve Berger, Duc-Hoa Tran, Rachel Bouserhal

17:20-17:40 *Modeling of Field Sound Insulation for Multi-Layered CLT Floor Assemblies Using Artificial Neural Networks*
Mohamad Bader Eddin

17:40-18:00 *Detecting Ringed Seal Vocalizations Using Deep Learning*
Karlee Zammit, William Halliday, Fabio Frazao, Stan Dosso

UNDERWATER ACOUSTICS

Chair: Pierre Cauchy (Université du Québec à Rimouski)

Wednesday October 4

- **Room CARTIER A**

10:20-10:40 *Assessment of Propeller Cavitation Inception Speed Based on Onboard Vibration Data*
Kamal Kesour, Paul Camerin, Jean-Christophe Gauthier Marquis, Cédric Gervaise

10:40-11:00 *Multi-Domain Approach for Prediction of Vortex-Induced Hull Pressure Fluctuations on a Model-Scale Ship*
Duncan McIntyre, Shameem Islam, Peter Oshkai

11:00-11:20 *Ship Noise Quantification and Source Level Estimation in the Arctic Ocean*
Najeem Shajahan, William D Halliday, Stephen J Insley

11:20-11:40 *The MARS Database – Source Levels Measured for the Fleet Navigating the St-Lawrence Estuary*
Pierre Mercure-Boissonnault, Pierre Cauchy, Faniry Fitiavana Rabetoandro, Cédric Gervaise, Guillaume St-Onge, Jeanne Mérindol, Cécile Perrier de la Bathie, Hugo Catineau

11:40-12:00 *Analysis of the Variability of Ship Acoustic Signatures Measured as a Function of Hydrophone Configuration*
Cecile Perrier de la Bathie, Pierre Cauchy, Guillaume St-Onge

12:00-12:20 *Measurement of Vessel Underwater Acoustic Signature at The MARS Station – Repeatability and Uncertainties Assessed on a 1000 Vessels Database*
Pierre Cauchy, Pierre Mercure-Boissonnault, Cécile Perrier de la Bathie, Faniry Rabetoandro, Guillaume Saint-Onge, Cedric Gervaise, Sylvain Lafrance

BIOMEDICAL ACOUSTICS

Chair: Nicolas Quaegebeur (U. of Sherbrooke)

Thursday October 5

- **Room CARTIER A**

15:20-15:40 *Miniaturized Acoustic Concentrators for Local Generation of Ultrasonic Waves*
Ibrahima Touré, Nicolas Quaegebeur

15:40-16:00 *Printing Beyond Barriers Using Ultrasound in Direct Sound Printing*
Mohsen Habibi, Shervin Foroughi, Muthukumaran Packirisamy

16:00-16:20 *Characterization of Noise Produced During Continuous and Sparse Sampling Functional Magnetic Resonance Imaging*
Olivier Robin, Félix Le Moigne - Le Dem, Pascal Tétreault, Domnique Lorrain, Vivien Staehle

16:20-16:40 *Numerical Analysis of Energy Density Distribution in the Human Lungs Under Low-Frequency Acoustic Excitation*
Arife Uzundurukan, Sébastien Poncet, Daria Camilla Boffito, Philippe Micheau

AEROACOUSTICS

Chair: Joana Rocha (Carleton University) and Marlène Sanjosé (ÉTS)

Thursday October 5

- **Room VICTORIA**

15:20-15:40 *Derivation of an Empirical Model for the Estimation of Power Spectral Density in the Turbulent Boundary Layer of Aircraft with Machine Learning Regression Techniques*
Zachary Huffman, Joana Rocha

15:40-16:00 *Aeroacoustic Optimization of a Metacage to Block the Noise Emitted by an Exhaust Fan*
Marco Lizotte, Jean-Bernard Piaud, Raymond Panneton, Tenon Charly Kone, Jean-Christophe Cuillière, Vincent François

16:00-16:20 *Interaction Noise for a Rotor-Stator Assembly in a Short Duct*
Marlene Sanjose, Baahirham Shanthalingam

16:20-16:40 *Evaluation of Wall Pressure Spectrum Models for Fan Noise Prediction*
Marlene Sanjose, Natacha Galand, Teddy Garnier, Stéphane Moreau

16:40-17:00 *High-fidelity Acoustic Simulation of a Recorder Using Powerflow*
Elissa El Hajj, Davide De Cicco, Annie Ross, David Vidal

EDUCATION IN ACOUSTICS

Chair: Olivier Robin (U. of Sherbrooke)

Wednesday October 4

- **Room CARTIER B**

13:20-13:40 *Teaching Architectural Acoustics Using Project-Based Learning with Real-World Building Projects*
Christoph Hoeller, Adrian Bloedt

13:40-14:00 *Understanding the Skill Gap of Post-Secondary Graduates Entering the Acoustic Consulting Profession*
Abigail Farkas

14:00-14:20 *Teaching Concepts of Acoustical Waves in Air - Part 2*
William John Gastmeier

14:20-14:40 *Noise Evaluation at the École de Technologie Supérieure Campus in Montréal: A Student Project*
Olivier Doutres, Maël Lopez, Kévin Rouard, Louis-Philippe Campagna, Titouan Cougoulic, Anthony Jutras, David Lauzon, Pierre-Luc Pépin-Pagé, Alexis Purson

14:40-15:00 *Improving Audiology Student Training by Clinical Simulation of Tinnitus: A Glimpse of Tinnitus Lived Experience*
Pierre H Bourez, Guillaume T Vallet, Philippe Fournier