GARY PAUL SCAVONE

Music Technology Area
Schulich School of Music of McGill University
Montreal, Quebec H3A 1E3 Canada
514-398-4535, x-089834
http://www.music.mcgill.ca/~gary/

EDUCATION:

1992–1997	Stanford University, Stanford, California. Ph.D., Computer-Based Music Theory & Acoustics (1997) M.S., Electrical Engineering (1995)
1989–1990	Conservatoire National de Région de Bordeaux, Bordeaux, France Saxophone studies with Jean-Marie Londeix, attended under Fulbright Scholarship
1984–1988	Syracuse University, Syracuse, New York B.S., Electrical Engineering, Magna Cum Laude B.A., Music, Magna Cum Laude, Performance Honors

PROFESSIONAL EXPERIENCE:

2009–current	ASSOCIATE PROFESSOR, Schulich School of Music of McGill University. Musical acoustics and audio DSP research, graduate/undergraduate teaching and supervision.
2011	PROGRAMMING CONSULTANT, Immersion Corporation, percussion sound synthesis model development.
2011	PROGRAMMING CONSULTANT, Zenph Sound Innovations, Inc., virtual saxophone synthesis model development.
2003–2009	ASSISTANT PROFESSOR, (Tenure Track, 2005–2009; Special Category, 2003–2005), Music Technology (Area Chair, 2006–2009), Schulich School of Music of McGill University. Audio DSP and acoustic research, graduate/undergraduate teaching and supervision.
1997–2003	TECHNICAL DIRECTOR/RESEARCH ASSOCIATE/LECTURER, Center for Computer Research in Music & Acoustics (CCRMA), Stanford University. Audio DSP, acoustic, and psychoacoustic research; Industrial relations.
1999–2004	PROGRAMMING CONSULTANT, Kind of Loud Technologies/Universal Audio. Reverberation design, implementation, and voicing.
1999–2000	PROGRAMMING CONSULTANT, Staccato Systems, Inc. DSP algorithm development.
1997	PROGRAMMING CONSULTANT, Signal Processing Associates, Inc. Speech codec implementations in C/C++ based on ITU-T specifications.
1994–1995	PROGRAMMING CONSULTANT, Sondius Project, Office of Technology Licensing, Stanford University. Objective C/C and Motorola DSP56000 programming and digital waveguide musical instrument design.
1991	SYSTEMS ENGINEER, Electronic Data Systems (EDS), Lockport, NY. Engineering computer support for a General Motors manufacturing facility.
1989	SYSTEMS ENGINEER, General Electric, Government Electronic Systems Department, Syracuse, NY. Firmware specifications documentation.

PUBLICATIONS:

Book Chapter

Cook, P. R. and Scavone, G. (2004). "The Synthesis ToolKit (STK) in C++." In *Audio Anecdotes: A Cookbook of Audio Algorithms and Techniques*, edited by Ken Greenbaum, A.K. Peters, pp. 237–253.

Peer-Reviewed Journal Articles

Lefebvre, A., Scavone, G., Kergomard, J. (2012) "External tonehole interactions in woodwind instruments." Submitted to *Acta Acustica united with Acustica*.

Saitis, C., Giordano, B., Fritz, C., and Scavone, G. (2012) "Perceptual evaluation of violins: A quantitative analysis of preference judgments by experience players." Accepted for publication in *Journal of the Acoustical Society of America*.

Lefebvre, A., Scavone, G. (2012). "Characterization of woodwind instrument toneholes with the finite element method." *Journal of the Acoustical Society of America*, Vol. 131, No. 4, pp. 3153-3163.

Murphy, E., Lagrange, M., Scavone, G., Depalle, P. and Guastavino, C. (2011). "Perceptual evaluation of rolling sound synthesis." *Acta Acustica united with Acustica*, Vol. 97, No. 5, pp. 840–851.

da Silva, A., Scavone, G., and Lenzi, A. (2010). "Numerical investigation of the mean flow effect on the acoustic reflection at the open end of clarinet-like instruments." *Acta Acustica united with Acustica*, Vol. 96, No. 5, pp. 959–966.

Lagrange, M., Scavone, G., and Depalle, P. (2010). "Analysis / synthesis of sounds generated by sustained contact between rigid objects." *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 18, No. 3, pp. 509–518.

da Silva, Scavone, G., and Lefebvre, A. (2009). "Sound reflection at the open end of axisymmetric ducts issuing a subsonic mean flow: A numerical study." *Journal of Sound and Vibration*, **327**, pp. 507–528.

Scavone, G., Lefebvre, A., and da Silva, A. (2008). "Measurement of vocal-tract influence during saxophone performance." *Journal of the Acoustical Society of America*, **123**, pp. 2391–2400.

da Silva, A., Scavone, G. and van Walstijn, M. (2007). "Numerical simulations of fluid-structure interactions in single-reed mouthpieces." *Journal of the Acoustical Society of America*, **122**, pp. 1798–1810.

da Silva, A. and Scavone, G. (2007). "Lattice Boltzmann simulations of the acoustic radiation from waveguides." *Journal of Physics A: Mathematical and Theoretical*, **40**, pp. 397–408.

Lakatos, S., Cook, P. R., and Scavone, G. (2000). "Selective attention to the parameters of a physically informed sonic model." *Journal of the Acoustical Society of America*, **107**, pp. L31–36.

Scavone, G. (1998). "The Musical Acoustics Research Library." *Journal of the Catgut Acoustical Society*, Vol. 3, No. 6 (Series II), pp. 24–26.

Peer-Reviewed Articles in Conference Proceedings

Lee, J., Kim, M., Depalle, P. and Scavone, G. (2011) "Conformal method for the rectilinear digital waveguide mesh." In *Proceedings of the IEEE Workshop on Acoustics of Signal Processing to Audio and Acoustics (WASPAA'11)*, New Paltz, NY, Oct. 16-19, pp. 293-296.

Sinclair, S., Wanderley, M., Hayward, V., and Scavone, G (2011) "Noise-free haptic interaction with a bowed-string acoustic model." In *Proceedings of the IEEE World Haptics Conference 2011*, Istanbul, Turkey.

Freour, V., Scavone G., Lefebvre A., and Germain F. (2011) "Acoustical properties of the vocal-tract in trombone performance." In *Proceedings of the 2011 Forum Acusticum Conference*, Aalborg, Denmark, pp. 625-630.

Saitis, C., Giordano, B. L., Fritz, C. and Scavone, G. (2011) "Investigating inter-individual differences in the preference for the violins." In *Proceedings of the 2011 Forum Acusticum Conference*, Aalborg, Denmark, pp. 497-501.

Lefebvre, A. and Scavone, G. (2011) "A comparison of saxophone impedances and their playing behavior." In *Proceedings of the 2011 Forum Acusticum Conference*, Aalborg, Denmark, pp. 539-544.

Lee, J., Depalle, P. and Scavone, G. (2010) "Analysis / Synthesis of Rolling Sounds Using a Source-Filter Approach." In *Proceedings of the 2010 International Conference on Digital Audio Effects (DAFx-10)*, Graz, Austria.

Kim, M. and Scavone, G. (2009) "Domain Decomposition Method for the Digital Waveguide Mesh." In *Proceedings of the 2009 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics*, New Paltz.

Sinclair, S., Scavone, G. and Wanderley, M. (2009) "Audio-haptic interaction with the digital waveguide bowed string." In *Proceedings of the 2009 International Computer Music Conference*, Montreal, Canada, pp. 275-278.

Murphy, E., Lagrange, M., Scavone, G., Depalle, P. and Guastavino, C. (2008) "Perceptual Evaluation of a Real-time Synthesis Technique for Rolling Sounds." In *Proceedings of the 2008 International Conference on Enactive Interfaces*, Pisa, Italy.

Zadel, M. and Scavone, G. (2008). "Recent developments in the Different Strokes environment." In *Proceedings of 2008 International Computer Music Conference*, Belfast, N. Ireland, pp. 1–4.

Scavone, G. and Whetsell, N. (2008). "The Music Technology program at McGill University." In *Proceedings of 2008 International Computer Music Conference*, Belfast, N. Ireland, pp. 327–330.

Lagrange, M., Scavone, G., and Depalle, P. (2008). "Time-domain analysis / synthesis of the excitation signal in a source / filter model of contact sounds." In *Proceedings of the 2008 International Conference on Auditory Display*, Paris, France.

Lefebvre, A. and Scavone, G. (2007). "Wind instrument acoustic research in the Computational Acoustic Modeling Laboratory, McGill University.", *Canadian Acoustics*, **35**, No. 3, pp. 52-53.

da Silva, A., Kuehnelt, H. and Scavone, G. (2007). "A brief survey of the lattice Boltzmann method in musical acoustics." In *Proceedings of the 19th International Congress on Acoustics*, Madrid, Spain.

Zadel, M. and Scavone, G. (2006). "Laptop performance: techniques, tools, and a new interface design." In *Proceedings of 2006 International Computer Music Conference*, New Orleans, USA, pp. 643–648.

Scavone, G. and Smith, J. O. (2006). "A stable acoustic impedance model of the clarinet using digital waveguides." In *Proceedings of the 2006 International Conference on Digital Audio Effects (DAFx-06)*, Montreal, Canada, pp. 89–94.

Zadel, M. and Scavone, G. (2006). "Different Strokes: a prototype software system for laptop performance and improvisation." In *Proceedings of 2006 Conference on New Interfaces for Musical Expression (NIME-06)*, Paris, France, pp. 168–171.

da Silva, A. and Scavone, G. (2005). "Characterizing impedance of woodwind instruments with the lattice-Boltzmann method." In *Proceedings of the 2005 Brazilian Symposium of Computer Music (SBCM)*, Belo Horizonte, Brazil.

Scavone, G. and Cook P. R. (2005). "RtMidi, RtAudio, and a Synthesis ToolKit (STK) update." In *Proceedings of the 2005 International Computer Music Conference*, Barcelona, Spain, pp. 327–330.

Scavone, G. and da Silva, A. (2005). "Frequency content of breath pressure and implications for use in control." In *Proceedings of the 2005 Conference on New Interfaces for Musical Expression (NIME-05)*, Vancouver, Canada, pp. 93–96.

da Silva, A., Wanderley, M. and Scavone, G. (2005). "On the use of flute air jet as a musical control variable." In *Proceedings of the 2005 Conference on New Interfaces for Musical Expression (NIME-05)*, Vancouver, Canada, pp. 105–108.

Scavone, G. and Wanderley, M. (2004). "The Music Technology program at McGill University." In *Proceedings of the 2004 International Computer Music Conference*, Miami, USA, pp. 264–267.

Scavone, G. (2003). "Modeling vocal-tract influence in reed wind instruments." In *Proceedings of the 2003 Stockholm Music Acoustics Conference*, Stockholm, Sweden, pp. 291–294.

Scavone, G. (2003). "THE PIPE: explorations with breath control." In *Proceedings of the 2003 Conference on New Instruments for Musical Expression (NIME-03)*, Montreal, Canada, pp. 15–18.

Scavone, G. (2002). "Time-domain synthesis of conical bore instrument sounds." In *Proceedings of the 2002 International Computer Music Conference*, Göteborg, Sweden, pp. 9–15.

Scavone, G. and Karjalainen, M. (2002). "Tonehole radiation directivity: A comparison of theory to measurements." In *Proceedings of the 2002 International Computer Music Conference*, Göteborg, Sweden, pp. 325–329.

Scavone, G. (2002). "RtAudio: A cross-platform C++ class for realtime audio input/output." In *Proceedings of the 2002 International Computer Music Conference*, Göteborg, Sweden, pp. 196–199.

Scavone, G., Lakatos, S., and Harbke, C. (200). "The Sonic Mapper: An interactive program for obtaining similarity ratings with auditory stimuli." In *Proceedings of the 2002 International Conference on Auditory Display*, Kyoto, Japan, pp. 368–371.

Ben-Tal, O., Berger, J., Cook, B., Daniels, M., Scavone, G., and Cook, P. (2002). "SONART: The sonification application research toolbox." In *Proceedings of the 2002 International Conference on Auditory Display*, Kyoto, Japan, pp. 368–371.

Scavone, G., Lakatos, S., Cook, P. R., and Harbke, C. (2001). "Perceptual spaces for sound effects obtained with an interactive similarity rating program." In *Proceedings of the International Symposium on Musical Acoustics*, Perugia, Italy, pp. 487–490.

Scavone, G. and Lakatos, S. (2001). "Recent developments in woodwind instrument physical modeling." In *Proceedings of the 17th International Congress on Acoustics*, Rome, Italy.

Chafe, C., Wilson, S., Leistikow, R., Chisholm, D. and Scavone, G. (2000). "A simplified approach to high quality music and sound over IP." In *Proceedings of the COST G-6 Conference on Digital Audio Effects*, Verona, Italy, pp. 159–163.

Lakatos, S., Scavone, G., and Cook, P. R. (2000). "Obtaining perceptual spaces for large numbers of complex sounds: Sensory, cognitive, and decisional constraints." In C. Bonnet (Ed.), *Proceedings of the Sixteenth Annual Meeting of the International Psychophysics Society*, pp. 245–250.

van Walstijn, M. and Scavone, G. (2000). "The wave digital tonehole model." *Proceedings of the 2000 International Computer Music Conference*, Berlin, Germany, pp. 465–468.

Scavone, G. (1999). "Modeling wind instrument sound radiation using digital waveguides." In *Proceedings of the 1999 International Computer Music Conference*, Beijing, China, pp. 355–358.

Cook, P. R. and Scavone, G. (1999). "The Synthesis ToolKit (STK)." In *Proceedings of the 1999 International Computer Music Conference*, Beijing, China, pp. 164–166.

Scavone, G. and Cook, P. R. (1998). "Real-time computer modeling of woodwind instruments." In *Proceedings of the 1998 International Symposium on Musical Acoustics*, Leavenworth, WA, pp. 197–202.

Scavone, G. and Mathews, M. (1998). "The Musical Acoustics Research Library." In *Proceedings of the 1998 International Symposium on Musical Acoustics*, Leavenworth, WA, pp. 359–363.

Smith, J. O. and Scavone, G. (1997). "The one-filter Keefe clarinet tonehole." In *Proceedings of the IEEE Workshop on Applied Signal Processing to Audio and Acoustics*, New York, pp. 19–22.

Scavone, G. and Smith, J. O. (1997). "Scattering parameters for the Keefe clarinet tonehole model." In *Proceedings of the 1997 International Symposium on Musical Acoustics*, Edinburgh, Scotland, pp. 433–438.

Scavone, G. and Smith, J. O. (1997). "Digital waveguide modeling of woodwind toneholes." In *Proceedings of the 1997 International Computer Music Conference*, Thessaloniki, Greece, pp. 260–263.

Scavone, G. (1996). "Modeling and control of performance expression in digital waveguide models of woodwind instruments." In *Proceedings of the 1996 International Computer Music Conference*, Hong Kong, pp. 224–227.

Scavone, G. (1995). "Digital waveguide modeling of the non-linear excitation of single-reed woodwind instruments." In *Proceedings of the 1995 International Computer Music Conference*, Banff, Canada, pp. 521–524.

Scavone, G. (1995). "Digital waveguide modeling of air-driven reed generators for the synthesis of brass and woodwind instrument sounds." In *Proceedings of the Second Brazilian Symposium on Computer Music*, Canela, Brazil, pp. 132–138.

Scavone, G. and Cook, P. R. (1994). "Combined linear and non-linear periodic prediction in calibrating models of musical instruments to recordings." In *Proceedings of the 1994 International Computer Music Conference*, Århus, Denmark, pp. 433–434.

Articles in Conference Proceedings (Peer-Reviewed Abstracts)

Freour, V. and Scavone, G. (2012) "Investigation of the effect of upstream airways impedance on regeneration of lip oscillations in trombone performance." In *Proceedings of the Acoustics 2012 Conference*, Nantes, France, pp. 2225–2230.

Mansour, H. and Scavone, G. (2012) "A comparison of vibration analysis techniques applied to the Persian setar." In *Proceedings of the Acoustics 2012 Conference*, Nantes, France, pp. 1737–1742.

Saitis, C., Fritz, C., Giordano, B. and Scavone, G. (2012) "Bridge admittance measurements of 10 preference-rated violins." In *Proceedings of the Acoustics 2012 Conference*, Nantes, France, pp. 3599–3604.

Lefebvre, A. and Scavone, G. (2011) "On the bore shape of conical instruments." In *Proceedings of the 2011 Canadian Acoustical Association Conference*, Quebec City, Quebec, Canada, pp. 128–129.

Freour, V. and Scavone, G. (2011) "Development of an electrolabiograph embedded in a trombone mouthpiece for the study of lip oscillation mechanisms in brass instrument performance." In *Proceedings of the 2011 Canadian Acoustical Association Conference*, Quebec City, Quebec City, Quebec, Canada, pp. 130–131.

Lee, J., Depalle, P. and Scavone, G. (2011) "On the extraction of excitation from a plucked string sound in time domain." In *Proceedings of the 2011 Canadian Acoustical Association Conference*, Quebec City, Quebec, Canada, pp. 126–127.

Saitis, C., Giordano, B. L., Fritz, C. and Scavone, G. (2011) "Aspects of experimental design for the perceptual evaluation of violin qualities." In *Proceedings of the 2011 Canadian Acoustical Association Conference*, Quebec City, Quebec, Canada, pp. 134-135.

Freour, V., Scavone G., Lefebvre A., and Germain F. (2011) "Acoustical properties of the vocal-tract in trombone performance." In *Proceedings of the 2011 Forum Acusticum Conference*, Aalborg, Denmark, pp. 625–630.

Saitis, C., Giordano, B. L., Fritz, C. and Scavone, G. (2011) "Investigating inter-individual differences in the preference for the violins." In *Proceedings of the 2011 Forum Acusticum Conference*, Aalborg, Denmark, pp. 497–501.

Lefebvre, A. and Scavone, G. (2011) "A comparison of saxophone impedances and their playing behavior." In *Proceedings of the 2011 Forum Acusticum Conference*, Aalborg, Denmark, pp. 539–544.

Lefebvre, A. and Scavone, G. (2010). "Refinements to the Model of a Single Woodwind Instrument Tonehole." In *Proceedings of the 2010 International Symposium on Musical Acoustics*, Sydney / Katoomba, Australia.

Lefebvre, A. and Scavone, G. (2010). "Finite Element Modeling of Woodwind Instruments." In *Proceedings of the 2010 International Symposium on Musical Acoustics*, Sydney / Katoomba, Australia.

Fréour, V. and Scavone, G. (2010). "Vocal-Tract Influence in Trombone Performance." In *Proceedings of the 2010 International Symposium on Musical Acoustics*, Sydney / Katoomba, Australia.

Lefebvre, A. and Scavone, G. (2008). "Input impedance measurements of conical acoustic systems using the two-microphone technique." In *Proceedings of the Acoustics '08 Conference*, Paris, France.

da Silva, A. and Scavone, G. (2007). "Coupling lattice Boltzmann models to digital waveguides for wind instrument simulations." In *Proceedings of the 2007 International Symposium on Musical Acoustics*, Barcelona, Spain.

Lefebvre, A., Scavone, G., Abel, J. and Buckiewicz-Smith, A. (2007). "A comparison of impedance measurements using one and two microphones." In *Proceedings of the 2007 International Symposium on Musical Acoustics*, Barcelona, Spain.

de Leon, S. and Scavone, G. (2007). "Coupled time-domain simulation of linear acoustic systems by boundary integration." In *Proceedings of the 2007 International Symposium on Musical Acoustics*, Barcelona, Spain.

Matthews, T. and Scavone, G. (2007). "An online system for viewing the input impedance of saxophones." In *Proceedings of the 2007 International Symposium on Musical Acoustics*, Barcelona, Spain.

Refereed Published Abstracts

Maestre, E., Scavone, G., and Smith, J. O. (2011). "Modeling of a violin input admittance by direct positioning of second-order resonators (A)." *Journal of the Acoustical Soc. of America*, **130**, p. 2364.

Saitis, C., Scavone, G., Fritz, C., and Giordano, B. (2010). "Evaluating violin quality: How consistent are skilled players? (A)." *Journal of the Acoustical Soc. of America*, **128**, p. 2284.

Scavone, G., Lefebvre, A., and da Silva, A. (2008). "Evaluating vocal-tract influence in the production of saxophone multiphonics (A)." *Journal of the Acoustical Soc. of America*, **123**, p. 3123, invited presentation.

Lefebvre, A. and Scavone, G. (2008). "Input impedance measurements of conical acoustic systems using the two-microphone technique (A)." *Journal of the Acoustical Soc. of America*, **123**, p. 3015 (paper in *Proceedings of the Acoustics '08 Conference*), invited presentation.

da Silva, A. and Scavone, G. (2008). "The influence of the mean flow on the transmission properties of wind instruments (A)." *Journal of the Acoustical Soc. of America*, **123**, p. 3447.

da Silva, A. and Scavone, G. (2007). "The influence of the acoustic feedback on the fluid-structure interaction within single-reed mouthpieces: A numerical investigation (A)." *Journal of the Acoustical Soc. of America*, **122**, p. 3056.

Lefebvre, A. and Scavone, G. (2006). "Input impedance measurements of alto saxophones with a calibration error analysis (A)." *Journal of the Acoustical Soc. of America*, **120**, p. 3332, invited presentation.

da Silva, A. and Scavone, G. (2006). "A hybrid approach for simulating clarinet-like systems involving the lattice Boltzmann method and a finite difference scheme (A)." *Journal of the Acoustical Soc. of America*, **120**, p. 3362, invited presentation.

Scavone, G. (2006). "Real-time measurement/viewing of vocal-tract influence during wind instrument performance (A)." *Journal of the Acoustical Soc. of America*, **119**, p. 3382.

da Silva, A. R., Depalle, P., and Scavone, G. P. (2006) "Benchmarking the lattice Boltzmann method for the determination of acoustic impedances of axisymmetric waveguides (A)." *Journal of the Acoustical Soc. of America*, **119**, p. 3383.

Scavone, G. (2005). "A unified digital waveguide (infra)structure for synthesizing wind instrument sounds (A)." *Journal of the Acoustical Soc. of America*, **117**, p. 2415, invited presentation.

Scavone, G. and Karjalainen, M. (2001). "Tonehole radiation directivity measurements (A)." *Journal of the Acoustical Soc. of America*, **110**, p. 2754.

Scavone, G. (2001). "Time-domain synthesis of conical bore instruments (A)." *Journal of the Acoustical Soc. of America*, **110**, p. 2754.

Lakatos, S., Scavone, G., Cook, P. R., and Harbke, C. (2001). "An interactive similarity rating program for large timbre sets (A)." *Journal of the Acoustical Soc. of America*, **109**, p. 2468.

Lakatos, S., Scavone, G., and Cook, P. R. (2000). "Knowledge acquisition by listeners in a source learning task using physical models (A)." *Journal of the Acoustical Soc. of America*, **107**, p. 2817, invited presentation.

Scavone, G. and Smith, J. O. (1996). "Digital waveguide modeling of woodwind toneholes (A)." *Journal of the Acoustical Soc. of America*, **100**, p. 2812.

GRANTS AWARDED:

2011–2012 CENTRE FOR INTERDISCIPLINARY RESEARCH IN MUSIC MEDIA AND TECHNOLOGY, STRATEGIC INNOVATION FUND, with Jeremy Cooperstock (PI), Jean Piché, Zack Settel and Adriana Olmos, *Acoustic Sculptures*, $10,000.

2011 MITACS NCE GRANT, with Audio Kinetic Inc. and Philippe Depalle, *Analysis-synthesis strategies for simple and robust transformations of complex sounds*, , $15,000.

2010–2011 CENTRE FOR INTERDISCIPLINARY RESEARCH IN MUSIC MEDIA AND TECHNOLOGY, STRATEGIC INNOVATION FUND, with Stephen McAdams (PI) and Luc Mongeau, *Psychomechanics of Aerodynamic Sounds*, $10,000.

2010–2013 NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA, DISCOVERY ACCELERATOR SUPPLEMENTS (DAS), *Modeling & Measurements of Music Instruments*, $120,000, only 100 awarded across Canada.

2010–2015 NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA, DISCOVERY GRANT, *Modeling & Measurements of Music Instruments*, $140,000.

2010–2011 NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA, RESEARCH TOOLS AND INSTRUMENTS, *Laboratory Equipment for Acoustic Measurements of Music Instruments*, $79,880.

2009 SOCIAL SCIENCES AND HUMANITIES RESEARCH COUNCIL OF CANADA, AID TO RESEARCH WORKSHOPS AND CONFERENCES IN CANADA, *The 2009 International Computer Music Conference*, $32,625.

2008–2009 CENTRE FOR INTERDISCIPLINARY RESEARCH IN MUSIC MEDIA AND TECHNOLOGY, STRATEGIC INNOVATION FUND, with Larry Lessard (PI) and Luc Mongeau, *Composite Musical Instrument Design*, $10,000.

2007–2008 HEXAGRAM RESEARCH / CREATION PROJECT, with pk langshaw (PI), Ana Cappelluto, Michael Montenaro, and Oana Suteu, *d_verse: transitional algorhythms of gesture*, $73,483.

2006–2008 NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA, SPECIAL RESEARCH OPPORTUNITY, with Marcelo Wanderley (PI), Stephen McAdams, Vincent Hayward, Philippe Depalle, and Catherine Guastavino, *Haptics, Sound and Interaction in the Design of Enactive Interfaces*, $479,651.

2005–2010 NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA, DISCOVERY GRANT, *Signal Processing Methods and Tools for Acoustic Modeling of Music Instruments*, $80,000.

2005–2006 NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA, RESEARCH TOOLS AND INSTRUMENTS, *Laboratory Equipment for Research in Signal Processing Methods in Musical Acoustics*, $33,341.

2005–2008 QUEBEC FONDS DE RECHERCHE SUR LA SOCIÉTÉ ET LA CULTURE, PROGRAMME D'APPUI À LA RECHERCHE-CRÉATION, with Denys Bouliane (PI), Sean Ferguson, Philippe Depalle, Marcelo Wanderley, and André Roy, *The Digital Orchestra*, $152,320.

2004–2009 CANADIAN FOUNDATION FOR INNOVATION, NEW OPPORTUNITIES, *Measurement and Development Tools for Computational Acoustic Modeling of Music Instruments and Sounding Objects*, $438,508.

2004–2009 CANADIAN FOUNDATION FOR INNOVATION, INFRASTRUCTURE OPERATION FUND, *Measurement and Development Tools for Computational Acoustic Modeling of Music Instruments and Sounding Objects*, $52,621.

1999–2002 UNITED STATES AIR FORCE, with Stephen Lakatos (PI) and James Beauchamp, *Mental Representation of Auditory Sources*, $592,926 US.

TEACHING EXPERIENCE:

2003–current ASSOCIATE/ASSISTANT PROFESSOR, Schulich School of Music of McGill University.

- MUMT 306: Music and Audio Computing I
- MUMT 307: Music and Audio Computing II
- MUMT 502: Special Project in Music Technology
- MUMT 614: Seminar on Computational Modeling of Musical Acoustic Systems

2006 INVITED LECTURER, Workshop on Music Controller Technologies, Faculty of Human and Social Sciences, Universidade Nova de Lisboa, Lisbon, Portugal.

1998–2003 LECTURER, MUS 150: Musical Acoustics, CCRMA, Dept. of Music, Stanford University.

2001 VISITING LECTURER, Seminar on Music Controllers, Institut Universitari de l'Audiovisual (IUA), Universitat Pompeu Fabra, Barcelona, Spain.

1999 LECTURER, MUS 320: Introduction to Digital Audio Signal Processing, CCRMA, Dept. of Music, Stanford University.

1995–2003 SAXOPHONE INSTRUCTOR, Dept. of Music, Stanford University.

1992–1994 TEACHING ASSISTANT, CCRMA, Dept. of Music, Stanford University.

- MUS 421: Signal Processing Methods in Musical Acoustics
- MUS 420: Applications of the Fast Fourier Transform (FFT)
- MUS 320: The Discrete Fourier Transform (DFT)
- MUS 154: Introduction to Computer Music
- MUS 21: Musicianship

ACADEMIC & PROFESSIONAL SERVICE:

- ASSOCIATE DIRECTOR OF RESEARCH AND TECHNOLOGY, Centre for Research in Music Media and Technology (CIRMMT), 2009–ongoing.
- RESEARCH AXIS CO-LEADER, "Sound modeling, acoustics and signal processing" research axis, Centre for Research in Music Media and Technology (CIRMMT), 2007–ongoing.
- ACTING DIRECTOR, Centre for Research in Music Media and Technology (CIRMMT), July - September 2011.
- MUSIC TECHNOLOGY AREA CHAIR, Schulich School of Music, McGill University, January 2006 – July 2009.
- DIRECTOR AND FOUNDER, *Computational Acoustic Modeling Laboratory (CAML)*, Music Technology, McGill University, January 2004–ongoing.
- CONFERENCE ORGANIZER AND CHAIR, The International Computer Music Conference (ICMC), McGill University, 16–21 August 2009.
- CONFERENCE CO-ORGANIZER, (with Stephen McAdams and Sean Ferguson) of the CIRMMT Music+Technology Incubator III: The Future of Computer Music workshop, 18–20 April 2008.
- CONFERENCE PAPER CHAIR, The International Conference on Auditory Display (ICAD), McGill University, 26–29 June 2007.
- VICE-PRESIDENT FOR THE AMERICAS, 2004–ongoing, VICE-PRESIDENT FOR CONFERENCES, 2006–2007, International Computer Music Association.
- TECHNICAL COMMITTEE ON MUSICAL ACOUSTICS, The Acoustical Society of America, 1999–ongoing.

- BOARD OF DIRECTORS, The Catgut Acoustical Society Forum, 1996–ongoing.
- DIRECTOR, The Musical Acoustics Research Library at The Center for Computer Research in Music and Acoustics, Stanford University, 1995–ongoing.
- SESSION CHAIR, ACOUSTICAL SOCIETY OF AMERICA MEETINGS, 2005, 2006, 2008
- CONFERENCE PROGRAM COMMITTEE MEMBER AND PAPER REVIEWER:
  - IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, 2011
  - International Computer Music Conference, 2004–2008
  - Conference on Digital Audio Effects (DAFx), 2006 and 2008
  - Conference on New Interfaces for Musical Expression, 2006
  - European Signal Processing Conference, 2005
  - Computer Music Modeling and Retrieval Workshop, 2005
- PAPER REVIEWER FOR VARIOUS JOURNALS:
  - *Acta Acustica united with Acustica*, 2009
  - *EURASIP Journal on Advances in Signal Processing*, 2010
  - *Journal of the Acoustical Society of America*, 1998 (1), 2002 (2), 2003 (1), 2006 (2), 2007 (1), 2009 (1), 2011 (2)
  - *IEEE Transactions on Speech and Audio Processing*, 1998, 1999, 2000, 2009 (1 each year)
  - *Computer Music Journal*, 2002, 2011
  - *Software–Practice and Experience*, 2004
- EXTERNAL GRANT REVIEWS:
  - Natural Sciences and Engineering Research Council of Canada (NSERC), 2005 (1), 2006 (3), 2007 (1), 2009 (1), 2011 (1)
  - Engineering and Physical Sciences Research Council, United Kingdom, 2004
- MCGILL UNIVERSITY NSERC PGS-D APPLICATION EXAMINER, Computer Science, Electrical Engineering, Math, Music fields, 40 applications, Fall 2006.
- MUSIC FACULTY COMMITTEES:
  - Committee of Area Chairs (2006–2009)
  - Theory / Music Research Graduate Sub-Committee (2003–ongoing)
  - Physical Development Committee (2006–2007)
  - Information Systems and Technology Committee (2004–2006)
  - Technical Committee on Network Management and Development (2004–2006)
  - Student Progress Committee (2004–2005)

CURRENT MEMBERSHIPS:

- Acoustical Society of America
- The Violin Society of America (Catgut Forum)