

WILL HOWIE

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EDUCATION

- 2014 - present **Doctor of Philosophy, Sound Recording** (expected Spring 2018)
Schulich School of Music, McGill University, Montreal
Thesis Title: "Capturing Orchestral Music for Three-Dimensional Audio Playback"
Supervisors: Prof. Richard King, Prof. Wieslaw Woszczyk
- 2008 **Masters of Music, Sound Recording**
Schulich School of Music, McGill University, Montreal
- 2004 **Bachelors of Music, Secondary Education**
University of British Columbia, Vancouver

HONOURS and AWARDS

- 2015 - 2018 SSHRC Joseph-Armand Bombardier Canada Graduate Scholarship
(Social Sciences and Humanities Research Council)
- 2017 International Graduate Mobility Award (McGill University)
- 2015 Graduate Research Enhancement and Travel Award (McGill University)
- 2015 - 2017 CIRMMT Student Travel Award x 3
(Centre for Interdisciplinary Research in Music Media and Technology)
- 2014 - 2015 Graduate Excellence Fellowship (McGill University)
- 2014 King Graduate Award (McGill University)
- 2009 Canadian Academy of Recording Arts and Sciences Fred Sherratt Award
- 2007 Audio Engineering Society Student Recording Award

RESEARCH EXPERIENCE

- 2014 - Present **Doctoral Student**, McGill University, Montreal
- Developing three-dimensional music recording and mixing techniques for classical, contemporary, jazz, and pop/rock music
 - Investigating perceptual differences between 3D audio reproduction formats
 - Investigating performance of trained vs. untrained listeners for evaluation of 3D music recording techniques
- 2010 **Research Assistant**, McGill University, Montreal
- Assisting in the capture of high resolution multichannel impulse responses of various acoustic spaces in Vancouver
 - Supervisor: Wieslaw Woszczyk
- 2006 **Research Assistant**, McGill University, Montreal
- Maintaining and testing audio for high resolution video link between McGill University and University of British Columbia
 - Joint research project between McGill and UBC, supervised by Wieslaw Woszczyk

PUBLICATIONS

Publications in peer-reviewed journals:

W. Howie, R. King, D. Martin, "Listener Discrimination Between Common Speaker-Based 3D Audio Reproduction Formats," *J. Audio Eng. Soc.*, Vol. 65, No. 10, 2017.

Publications in peer-reviewed conference proceedings:

W. Howie, R. King, D. Martin, F. Grond, "Subjective Evaluation of Orchestral Music Recording Techniques for Three-Dimensional Audio," in *AES Convention 142*, Berlin, 2017.

M. Boerum, B. Martin, R. King, G. Massenburg, D. Benson, W. Howie. "Lateral Listener Movement on the Horizontal Plane: Sensing Motion Through Binaural Simulation," in *AES 61st International Convention*, London, 2016.

Publications in abstract & precis peer-reviewed conference proceedings:

R. King, B. Leonard, W. Howie, J. Kelly, "Real or Illusion? A comparative study of captured ambience vs. artificial reverberation in immersive audio applications," in *AES Convention 142*, Berlin, 2017.

W. Howie, R. King, D. Martin, "A Three-Dimensional Orchestral Music Recording Technique, Optimized for 22.2 Multichannel Sound," in *AES Convention 141*, Los Angeles, 2016.

W. Howie, R. King, M. Boerum, D. Benson, A. Han, "Listener preferences for height channel microphone polar patterns in three-dimensional recording," in *AES Convention 139*, New York, 2015.

B. Martin, R. King, B. Leonard, D. Benson, W. Howie, "Immersive content in three-dimensional recording techniques for single instruments in popular music," in *AES Convention 138*, Warsaw, 2015.

Publications in editor reviewed conference proceedings:

R. King, B. Leonard, W. Howie, J. Kelly, "Real Rooms vs Artificial Reverberation: An evaluation of actual source audio vs. artificial ambience," *Proceedings on Musical Acoustics*, Vol. 29, No. 1, 2017.

Publications in conference proceedings:

R. King, W. Howie, J. Kelly, "A Survey of Suggested Techniques for Height Channel Capture in Multi-channel Recording," in *AES Convention 140*, Paris, 2015.

W. Howie and R. King, "Exploratory microphone techniques for three-dimensional classical music recording," in *AES Convention 138*, Warsaw, 2015.

WORKS IN PROGRESS:

"Subjective and objective evaluation of 9ch three-dimensional acoustic music recording techniques", for submission to *2018 AES International Conference on Spatial Reproduction*

"Comparing trained and untrained listeners for three-dimensional audio evaluation" for submission to *J. Audio Eng. Soc.*

TEACHING EXPERIENCE

2018

Instructor, McGill University, Montreal

- Course Title: Audio Production Essentials (Winter)
- Lectures and demonstrations for undergraduate survey course on audio production, preparation and grading of assignments and exams
- Co-developed curriculum

2017 – 2018

Instructor, McGill University, Montreal

- Course Title: Introduction to Sound Recording (Fall/Winter)
- Teaching undergraduate students practical classes and lectures on various aspects of sound recording and reproduction, evaluation of students' recorded work

2014 - 2017

Instructor, McGill University, Montreal

- Course Title: Digital/Analog Editing (Fall)
- Developed curriculum, instructed and assessed students for graduate level course in analog and digital music editing
- Frequent one-on-one meetings with students covering class-related topics, as well as other areas of sound recording

2015

Teaching Assistant, McGill University, Montreal

- Course Title: Introduction to Electro-acoustics (Winter)
- Graded lab reports and met with students to discuss results

2014 - 2015

Teaching Assistant, McGill University, Montreal

- Course Title: Webcasting Coordinator/Recording Engineer (Fall/Winter)
- Directed team of audio and video technicians in the production of live broadcasts of Schulich School of Music concerts
- Attended production meetings, researched aspects of content live streaming

INVITED PRESENTATIONS

2017

"Recording for 22.2", as part of *Workshop on DSP applications in the recording studio*, Centre for Interdisciplinary Research in Music Media and Technology, McGill University, November 2017, 60 minutes.

"Immersive Audio Capture for 22.2 Multichannel Sound (updated)", Tokyo University of the Arts, Tokyo, April 2017, 60 minutes.

- “Techniques for Three Dimensional Audio Capture of Musical Performance,” (with Morten Lindberg) Audio Engineering Society, McGill University, Montreal, March 2017, 45 minutes.
- 2016 “Immersive Audio Capture for 22.2 Multichannel Sound”, Audio Engineering Society, University of British Columbia, Vancouver, August 2016, 60 minutes.
- “Immersive Audio Capture for 22.2 Multichannel Sound” (with Bryan Martin), Symposium IX 3rd Edition, Society for Arts and Technology, Montreal, June 2016, 90 minutes.
- “Three-Dimensional Music Recording” (with Bryan Martin), as part of *Workshop on Three-dimensional Immersive Audio*, Centre for Interdisciplinary Research in Music Media and Technology, McGill University, April 2016, 45 minutes.
- “Three-dimensional recording techniques for classical, jazz, and pop/rock music,” Yamaha Corporation, March 2016, 120 minutes.
- “Three-dimensional recording techniques for classical, jazz, and pop/rock music,” Kyushu University, March 2016, 45 minutes.
- “Three-dimensional recording techniques for classical, jazz, and pop/rock music,” Tokyo University of the Arts, February 2016, 100 minutes.
- “Three-dimensional recording techniques for classical, jazz, and pop/rock music,” NHK Science and Technical Research Laboratories, February 2016, 120 minutes.
- 2015 “Three Dimensional Recording Techniques for Classical Music,” Audio Engineering Society, Rochester Institute of Technology, November 30, 2015, 30 minutes
- “3D recording listening and evaluation,” Rochester Institute of Technology, November 30, 2015, 60 minutes

ADDITIONAL GUEST LECTURES

In addition to the invited lectures listed above, I have delivered guest lectures as part of the following graduate and undergraduate courses at McGill University: MUSR 629 *Technical Ear Training*; MUSR 670 *Recording Theory & Practice*; MUSR 692 *Music Production Workshop*; MUSR 691 *3D Audio Seminar*; MUSR 200 *Audio Recording Essentials*. Topics have included 3D audio production, stereo music production, and spatial hearing.

PROFESSIONAL WORK EXPERIENCE

- 2011 - 2014 **Recording Engineer**, Canadian Broadcasting Corporation, Vancouver
 • Recording, editing, mixing and mastering content for national broadcast on CBC Radio 1, Radio 2, Espace Musique, and CBC Television
- 2006 - Present **Freelance Sound Engineer / Music Producer**, Vancouver, Montreal
 • Please see below for commercial credits
- 2009 - 2014 **Assistant Head Technician**, Chan Centre for the Performing Arts, Vancouver
 • Front of house and monitor mixing, acoustical adjustment, archival recording, technical set up, and equipment maintenance
- 2007, 2008-2009 **Senior Audio Associate (2009) / Audio Associate** – The Banff Centre, Banff
 • Recording, mixing, editing, and mastering commercial releases, studio sessions, demos and live concerts, production and post production audio for short films, teaching studio orientation classes, live sound reinforcement
- 2007 - 2008 **Concert Recording and Live Sound Coordinator** – Schulich School of Music, McGill University, Montreal
 • Scheduled concert recordings and live sound, FOH/monitors/recording engineer, trained engineers, completed payroll documents
- 2005 - 2008 **Sound Engineer** – Schulich School of Music, McGill University, Montreal
 • Recording, mixing, editing, and mastering live concerts, student and faculty recordings, and live sound reinforcement

2005 **Co-Director:** Contrasts Chamber Music Series, Vancouver
• Selected repertoire and performers, booked venues, directed Festival Choir

ACADEMIC and ADMINISTRATIVE EXPERIENCE

2017 **Chair,** Paper Session: "Recording and Live Sound", *AES Convention 143*, May 2017.

2015 **Chair,** *Workshop with Floyd Toole on sound reproduction*, Centre for Interdisciplinary Research in Music Media and Technology, April 2015

2014 - 2015 **Secretary,** AES 59th Conference on Sound Reinforcement Engineering and Technology, Organizing Committee

AFFILIATIONS

Audio Engineering Society
Canadian Broadcasting Corporation

LANGUAGES

English: fluent
French: functional spoken, listening, reading, writing
Japanese: intermediate

PROFESSIONAL RECORDING CREDITS

Standing Wave New Wave (2017)
Producer, Recording, Editing, Mixing, Mastering

Skim Milk Fingerprints (2017)
Bass, Mastering

Antoine Joubert piano solo: fauré scriabine janá7ek liszt (2017)
Editing

Skim Milk The Monarch Sessions (2017)
Producer, Recording, Mixing

Phoenix Chamber Choir When The Earth Stands Still (2017)
Editing, Mastering

Anthony Tan Instantmusik (2017)
Engineer

Trio Verlaine Ariadne's Legacy (2016)
Session Producer, Engineer

Phoenix Chamber Choir Caged Bird (2016)
Editing

UBC University Singers Earth Grown Old (2016)
Recording Engineer, Editing

Matt Haimovitz Overtures To Bach (2016)
Editing

Monty Adkins & Terri Hron Lépidoptères (2016)
Sound Engineer, Liner Notes

Couloir Maxwell Muhly & Couloir (2016)
Session Producer, Session Engineer

Turning Point Ensemble Thirst (2015)
Recording Engineer, Digital Editing

Tafelmusik Baroque Orchestra Best of French Baroque Music (2015)
Engineer

Skim Milk Ghosts of Jazz (2015)
Executive Producer, Mastering, Bass

Phoenix Chamber Choir Mid-Winter Songs / Un Soir de Neige (2014)
Recording Engineer, Digital Editing

Trio Verlaine Six Departures (2014)
Session Producer, Engineer

Pacific Sound Collective Mai 68 (2014)
Producer, Recording, Mixing

Skim Milk Skim Milk (2014)
Mastering, Bass

Stephen Chatman / UBC University Singers Magnificat: Songs of Reflection (2013)
Recording Engineer, Digital Editing

Couloir Wine Dark Sea (2013)
Session Producer, Session Engineering

aalt Restless EP (2013)
Producer, Recording, Mixing, Performer

Shauna Rolston / Heather Schmidt Icicles of Fire (2013)
Digital Editing

Sam Davidson The Case for Space (2013)
Producer, Recording, Mixing

Ig Henneman Sextet Live @ The Ironworks Vancouver (2012)
Recording, Editing, Mixing, Mastering

Christopher Costanza The Cello Suites of J. S. Bach (2012)
Recording Engineer

Little Mountain Brass Band Pastime with Good Company (2012)
Producer, Engineer

Clemens Purner (Director) / Edo Van Breemen (Music) Panta Rhei (2012)
Recording, Mixing

John Bolton (Producer/Director) / Tobin Stokes (Music) The Making of Fallujah (2012)
Location Sound Recordist, Mixing

Tafelmusik Baroque Orchestra The Galileo Project (2012)
Engineer

John Oliver Forging Utopia (2012)
Digital Editing, Mastering

The Classic Strings Duo The Classic Strings Duo (2012)
Digital Editing, Mastering

Brasstronaut Opportunity EP (2011)
Recording

Chor Leoni Yuletide Fires 2 (2011)
Producer, Editing

Resorts EP01 (2011)
Mixing

Mina Shum (Director) / Standing Wave (Music) All (2011)
Recording, Editing, Mixing

Ballet BC / Turning Point Ensemble 25th Anniversary Celebration [Live Performance and Studio Recording] (2011)
Sound Design, Music Producer, Recording, Editing, Mastering

Contact Undercurrents (2011)
Mixing, Digital Editing

Mike Soviet Mental (2011)
Engineering, Guitar and Bass, Associate Producer

Karl Schwonik Jazz Ensemble avec/with Rémi Bolduc 1 + 4 (2011)
Recording Engineer

Tafelmusik Baroque Orchestra Music From the Galileo Project: Music Of The Spheres (CD and Videos) (2010)
Recording Engineer

Anthony De Mare Speak! The Speaking-Singing Pianist (2010)
Assistant Engineer

The NFYA Collection 25 Years of New Music in New York (2010)
Assistant Engineer

Brasstronaut Mount Chimaera (2010)
Producer, Recording, Mixing

Rainier Trio The Rainier Trio (2010)
Producer, Engineer

Malcolm Aiken Paper Star (2010)
Producer, Recording, Mixing

Mike Soviet Not Chill (2010)
Engineer

Malcolm Aiken Band Live @ Whistler Music Fest Promotional Video (2009)
Recording, Mixing, Mastering

Heather Bilodeau Sunday Afternoon (2009)
Recording, Mixing

Mackenzie Jones Big Band The Reach Around (2009)
Recording, Mixing, Mastering, Session Producer

Mathias Maute / Montreal Baroque Festival Orchestra Versailles Voodoo (2009)
Music Recording

Stefania Neonato Clementi Grand Piano in Concert (2009)
Recording

The Banff Centre BISQC Promotional Video (2009)
Final Sound Mix

Stepper Way Out (2009)
Additional Recording, Track 11

The Banff Centre The Twelve Days of Christmas (2009)
Sound Mix

McGill Symphony Orchestra Ascension: Mahler and Messiaen (2009)
Mastering

The Banff Centre Deck The Halls (E Greeting) (2008)
Recording

The Banff Centre Centre Pieces in Jazz and Creative Music ~ 2007 (2008)
Recording (Tracks 1, 3, 4, 6, 14)

Princess Productions Collection 6:11:07 [Soundtrack] (2007)
Recording, Mixing, Bass

Joe Miller Worn Out Joke (2007)
Fender Bass, Electric Guitar, Piano, B3 Organ, Production and Arranging Consultant

Panacea Panacea (2007)
Recording, Mixing

Mackenzie Jones Big Band Swampkratch (2006)
Recording, Mixing, Co-Producer

Stephen Chatman Proud Music Of The Storm (2004)
Performer – Chorus

UBC University Singers A Vancouver Christmas (2004)
Performer – First Tenor

UBC Symphony Orchestra The Dream of Gerontius (2002)
Performer – Chorus

SELECTED CBC NATIONAL BROADCAST CREDITS

Tegan and Sara - CBC Music Fest 2014 (Summer 2014)
Mixing Engineer

Dan Mangan - CBC Music Fest 2014 (Summer 2014)
Mixing Engineer

Arkells - CBC Music Fest 2014 (Summer 2014)
Mixing Engineer

National Youth Symphony Orchestra (Summer 2013)
Recording Engineer

Vancouver Symphony Orchestra (Numerous Concerts 2011 to present)
Recording Engineer

CBC Toque Sessions 2013 (Bee Keepers, Dear Rouge) (Winter 2013)
Recording Engineer

Joshua Hopkins (Winter 2013)
Recording Engineer

Marc Andre-Hamelin (Fall 2012)
Recording Engineer

James Parker (Summer 2012)
Recording Engineer

Tony Wilson: A Day's Life Band (Spring 2012)
Mixing Engineer

Turning Point Ensemble (Spring 2012)
Recording Engineer

London Haydn Quartet (Winter 2012)
Recording Engineer

Vancouver Opera – Romeo et Juliette (Winter 2012)
Recording Engineer

Pacific Opera Victoria – Mary's Wedding (Fall 2011)
Recording Engineer

SELECTED PROFESSIONAL LIVE SOUND CREDITS

Steve Reich (Composer) / Vicky Chow (Piano) Piano Counterpoint (Flexible Version World Premiere)
(January 2013)
Multi-Spatial Sound Design, Live Mix

Little Chamber Music Series That Could (Fall 2013)

Live Sound and Archival Recording for series re-launch, including World and Vancouver premieres of music by Nicole Lizée

The Chan Centre for the Performing Arts (Fall 2009 – Summer 2014)

Monitor mix for various concerts, including: Taj Mahal, Angelique Kidjo, Chucho Valdez, Pablo Ziegler and Regina Carter, Simon Shaheen, Zakir Hussain, Kronos Quartet

Music On Main (Spring 2010 – Spring 2014)

Front of House and Monitor mixes, Archival Recording for various concerts, including: Gabriel Kahane, Tanya Tagaq, Richard Reed Parry, Barry Truax, James Hill, Calder Quartet, Giorgio Magnanensi

Standing Wave (Winter 2009 – Spring 2014)

Sound Design and Archival Recording for various concerts/premieres

Sound Technician – Montreal Baroque Festival, Montreal, QC Summer 2008

FOH/monitor mix: Pandit Sharda Sahai, sound reinforcement set-up: Traversée Miraculeuse, recording engineer: Versailles Vaudou!