

# MUSICAL LEARNING ACROSS THE LIFESPAN

## CORE FACULTY

### Jonathan De Souza

Music Theory, Don Wright  
Faculty of Music (DWFoM)

### Jessica Grahn

Psychology/Brain & Mind  
Institute (BMI)

### Ingrid Johnsrude

Psychology/BMI/Communication  
Sciences & Disorders (CSD)/  
National Centre for Audiology  
(NCA)

### Ewan Macpherson

CSD/NCA

### Kevin Watson

Music Education, DWFoM

## ASSOCIATED FACULTY

### Daniel Ansari

Psychology/BMI

### Carol Beynon

Faculty of Education

### Mark Daley

Computer Science/Biology/  
Statistics & Actuarial Science/  
BMI

### Victoria Meredith

Music Education, DWFoM

### Katie Overy

Institute for Music in Human and  
Social Development,  
University of Edinburgh

### Laurel Trainor

Psychology,  
McMaster University

### Ruth Wright

Music Education, DWFoM

### Betty Anne Younker

Dean, DWFoM

## Pilot Studies Underway

*The Musical Learning Across the Lifespan initiative is currently supporting several interdisciplinary pilot studies. The following updates on research in progress come from Jonathan Vaisberg, Ph.D. student at the National Centre for Audiology, and from Emma Holmes, postdoctoral researcher at the Brain and Mind Institute.*

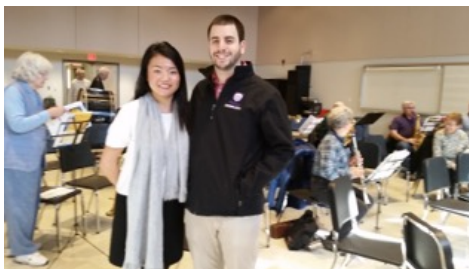
### Hearing Loss in Adult Musicians

This study seeks to understand the consequences of hearing loss and hearing aid use on music listening and participation. While the effects of hearing loss and hearing aid use on speech perception are well established, the effects on music perception are less well understood. Due to the subjective nature of music perception relative to speech perception, it is challenging to use similar quantitative metrics to measure music perception deficits in an experimental setting. In this study, we are obtaining qualitative descriptions of adult hearing-impaired musicians' experiences

of playing and performing music. Participants' hearing statuses range from normal to severe-profound loss, whereas musical experiences range from less than a year to over forty years. Preliminary results show that despite adult beginner musicians' hearing loss, they are generally becoming more sensitive to and aware of musical stimuli, likely as a result of increased practice, interest and participation. In contrast, more experienced musicians who are hearing aid users exhibit more variability in their sense of how they perceive music. Their experiences are subject to factors including how they believe music is perceptually defined, the perceived effectiveness of their hearing aids, and counselling from their audiologist. We are continuing to collect data.

#### Research team

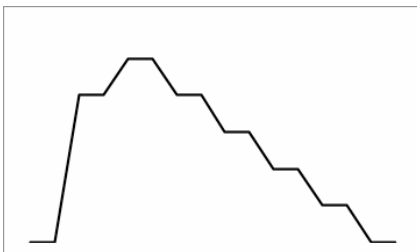
*Jonathan Vaisberg (Ph.D. student, CSD/NCA), Amy Wang (M.Mus. student, DWFoM), Cathy Benedict (Music Education, DWFoM), Ewan Macpherson (CSD/NCA), and Susan Scollie (CSD/NCA)*



Amy Wang (M.Mus. student in Music Education) and Jonathan Vaisberg (Ph.D. student, Communication Sciences & Disorders/National Centre for Audiology) conducting research at a rehearsal of the New Horizons Adult Band.

## Musical Expertise and Melody Perception

Trained musicians have extensive experience with their learned instrument, which arises from many hours of practice. Although we know that extensive practice improves someone's ability to play an instrument, it is less clear whether practice affects the perception of melodies played by the trained instrument. This project aimed to investigate whether familiarity with an instrument helps people to perceptually separate (or "pull apart") melodies played simultaneously by different instruments, if one of the instruments is familiar. We developed a contour identification task, in which participants had to identify a visual representation of the melodic contour played by a target instrument when a different instrument played a different melody at the same time. Participants were good at the contour task, even when they hadn't been trained on either instrument. As a result, being familiar with one of the instruments didn't provide a large benefit. However, when the target melody was a familiar tune (such as "Twinkle, Twinkle, Little



Visual representation of the melodic contour for "Twinkle, Twinkle"

Star"), participants were better at identifying the contour than when the melody was not a recognizable tune—perhaps because participants could draw on their long-term memory of the notes to help them identify the contour when listening to familiar tunes.

### Research team

*Emma Holmes (Postdoctoral Fellow, Psychology/BMI), Zoey Walden (Honors student, Psychology), Kristen Wallentinsen (PhD Student, Music Theory, DWFoM), Ingrid Johnsrude (Psychology/BMI/CSD/NCA), and Jonathan De Souza (Music Theory, DWFoM)*

For information on other ongoing MLAL Research Projects, please visit [music.uwo.ca/research/research-groups/mlal/research-activity.html](http://music.uwo.ca/research/research-groups/mlal/research-activity.html).

## MLAL Team Updates

Katie Overy was a Visiting Professor of Music Education from 2014 to 2015.



Katie Overy

During her time at Western, she led the creation of MLAL and served as the initiative's director. Though Dr. Overy has returned to the University of Edinburgh, where she is Director of the Institute for Music in Human and Social Development, she continues to be associated with MLAL and will come back to London in June 2016 to participate in a retreat for MLAL faculty and students.

With Dr. Overy's departure, Jonathan De Souza (Assistant Professor of Music Theory in the Don Wright Faculty of Music) has taken over as MLAL Coordinator. At the same time, we welcomed two new faculty to the MLAL Team: Ewan Macpherson of the National Centre for Audiology joined the Core Team, and Mark Daley (Computer Science, Biology, Statistics and Actuarial Science, and the Brain and Mind Institute) joined as Associated Faculty.

## MLAL Representation at Music and the Mind Conference in Texas

In June 2016, Jonathan De Souza will be a fellow at a unique conference on music



Jonathan De Souza and the mind at Rice University in Houston, Texas. The five-day conference will gather scientists and musicians from ten countries for a series of cross-disciplinary seminars, led by distinguished scholars in the field. In these seminars, musicians will explore brain morphology and experimental design, while scientists will explore music theory and history. The conference will also involve public lectures, including a presentation by Dr. De Souza on his music-theoretical research on instrumental performance and cognition. This is, then, both an opportunity for De Souza to



Panel discussion at the MLAL Symposium, October 17, 2015. From left to right, Katie Overy, Daniel Ansari, Ana Almeida, Steven Demorest, Emma Moore, Psyche Loui, Matthew Peacock, Carol Beynon, and Jonathan De Souza. For more information on the symposium, including abstracts for presentations, visit [http://music.uwo.ca/research/research\\_groups/mlal/launch-event.html](http://music.uwo.ca/research/research_groups/mlal/launch-event.html).

develop new research skills and to share his work—and the work of the MLAL group—with an interdisciplinary, international community of scholars.

### Cultural Influences on Rhythm Processing

A recent article co-authored by Daniel Cameron (Psychology/BMI), Jocelyn Bentley (University of Toronto), and MLAL Core Team Member Jessica Grahn explored cultural influences on rhythmic perception and production. In a series of tasks,

participants from East Africa and North America responded to rhythms derived from East African and Western traditions. Cultural familiarity did not affect participants' ability to perceive whether rhythms were same or different. But with production, there were notable differences. For example, participants tapped the beat more accurately for culturally familiar rhythms.

The full article can be accessed at [journal.frontiersin.org/article/10.3389/fpsyg.2015.00366/full](http://journal.frontiersin.org/article/10.3389/fpsyg.2015.00366/full).

### Acknowledgements

We wish to thank the Don Wright Faculty of Music, Research Western, and the Brain and Mind Institute for their support, and to acknowledge a Connection Grant from the Social Sciences and Humanities Research Council of Canada.

### Contact MLAL

For more information, please visit us online at [music.uwo.ca/research/research-groups/mlal](http://music.uwo.ca/research/research-groups/mlal) or email us at [mailmlal@uwo.ca](mailto:mailmlal@uwo.ca).

## MLAL SYMPOSIUM: AUDIENCE COMMENTS

"All sessions were of great value. I don't recall attending a day like this where everything was interesting and presented in a really first rate way."

"The Intergenerational Choir was lovely!"

"I so enjoyed the final panel discussion where all presenters were on stage fielding questions from the audience."

"All of the speakers were so interesting and accessible. And the wide variety of information that was shared really kept my attention."

"It was exciting, gratifying, to see so many professionals involved in research that ultimately might lead to the betterment of peoples' lives."

