Blake E. Butler, PhD

University of Western Ontario
1151 Richmond Street N.
London, Ontario, Canada
bbutler9@uwo.ca

Education

2012 PhD - Psychology, Neuroscience & Behaviour
McMaster University, Hamilton, Ontario
Advisor - Laurel J. Trainor

2008 MSc - Health and Rehabilitation Science
University of Western Ontario, London, Ontario
Advisor - Prudence Allen

2006 BMSc - Medical Sciences
University of Western Ontario, London, Ontario

Professional Appointments

2018 Assistant Professor
Department of Psychology
University of Western Ontario, London, Ontario

2016 Research Scientist & Adjunct Research Professor
Department of Psychology
University of Western Ontario, London, Ontario

2012 Postdoctoral Fellow
Cerebral Systems Lab (P.I. Stephen G. Lomber)
Department of Physiology & Pharmacology, Brain and Mind Institute
University of Western Ontario, London, Ontario

Research Support Currently Held

2017-2022 Natural Sciences and Engineering Research Council (NSERC)
Structural and Functional Measures of Auditory Cortical Development
Role: Principle Investigator
Annual Award: $26,000

2018-2020 Western Strategic Support for CIHR Success
Imaging Neural Function & Connectivity in the Deaf
Role: Principle Investigator
Award Value: $25,000

2018-2023 Canadian Institutes for Health Research (CIHR) Project Grant
Cortical plasticity following deafness
Role: Co-Investigator
Annual Award: $237,150

2019-2020 BrainsCAN Accelerator Stimulus Grant
Noninvasive Brain Stimulation to Influence Auditory Perception
Role: Co-Investigator
Award Value: $104,000

2019-2024 Canada Foundation for Innovation - John Evans Leadership Fund &
Ontario Research Fund - Small Infrastructure Grant
Characterizing a neural basis for crossmodal plasticity following sensory loss
Role: Principle Investigator
Award Value: $490,613

Research Support Previously Held

2017-2019 BrainsCAN Accelerator Stimulus Grant
Imaging Visually-Evoked Cortical Activity in the Cat at 7T
Role: Principle Investigator
Award Value: $90,000

2017-2018 BrainsCAN Accelerator Stimulus Grant
fMRI Compatible Reversible Deactivation to Examine Cerebral Networks
Role: Co-Investigator
Award Value: $110,000

Research Support Applied For

2020-2023 BrainsCAN Accelerator Grant
Characterizing a neural basis for crossmodal plasticity following sensory loss
Role: Principle Investigator
Award Value: $447,675

2020-2021 BrainsCAN Accelerator Stimulus Grant
Children with deafness and autism spectrum disorder
Role: Co-Investigator
Award Value: $74,000

2020-2022 Children's Health Research Institute - Scientist Innovation Grant
Relating auditory experience and neural development in preterm neonates
Role: Principle Investigator
Award Value: $130,000

Peer-Reviewed Publications

† manuscripts co-authored by trainees

Under Review

23. Trachtenberg B, **Butler B**, Lomber SG. (Under Review). Medial geniculate axon terminal density in visual and auditory cortex of hearing and deaf cats. *Brain Structure & Function.*
22. Boucher C, **Butler BE**, Meredith MA, Lomber SG. (Under Review). Crossmodal plasticity in core auditory cortex following deafness: An evaluation of evidence for and against. *Neuroscience & Biobehavioral Reviews.*

Published

21. Alencar CDC, **Butler BE**, Lomber SG. (2019). What and how the deaf brain sees. *Journal of Cognitive Neuroscience.*
20. **Butler BE**, Sunstrum JK†, Lomber SG. (2018). Modified origins of cortical projections to the superior colliculus in the deaf: Dispersion of auditory efferents. *Journal of Neuroscience*, 38:4048-4058. PMID: 29610441.
19. Stolzberg DJ, **Butler BE**, Lomber SG. (2018). Effects of neonatal deafness on resting state

functional network connectivity. *Neuroimage*, 165:69-82. PMID: 28988830.

18. **Butler BE**, de la Rua A†, Ward-Able T†, Lomber SG. (2018). Cortical and thalamic connectivity to the second auditory cortex of the cat is resilient to the onset of deafness. *Brain Structure and Function*, 223:819-835. PMID: 28940055.
17. Stolzberg DJ, Wong C, **Butler BE**, Lomber SG. (2017). "Catlas": An MRI-based three-dimensional cortical atlas and tissue probability maps for the domestic cat (felis catus). *Journal of Comparative Neurology*, 525:3190-3206. PMID: 28653335
16. **Butler BE**, Chabot N, Lomber SG. (2017). Origins of thalamic and cortical projections to the posterior auditory field in congenitally deaf cats. *Hearing Research*, 343:118-127 1-10. PMID:27019080
15. **Butler BE**, Chabot N, Lomber SG. (2016). Quantifying and comparing the pattern of thalamic and cortical projections to the posterior auditory field in hearing and deaf cats. *Journal of Comparative Neurology* 524:3042-3063. PMID: 27019080
14. **Butler BE**, Chabot N, Lomber SG. (2016). A quantitative comparison of the hemispheric, areal, and laminar origins of sensory and motor cortical projections to the superior colliculus of the cat. *Journal of Comparative Neurology* 524:2623-2642. PMID: 26850989
13. Hall AJ, **Butler BE**, Lomber SG. (2016). The cat's meow: A high-field fMRI assessment of cortical activity in response to vocalizations and complex auditory stimuli. *NeuroImage*, 127:44-57. PMID: 26658927
12. Chabot N*, **Butler BE***, Lomber SG. (2015). Differential modification of cortical and thalamic projections to cat primary auditory cortex following early- and late-onset deafness. *Journal of Comparative Neurology* 523: 2297-2320. PMID: 25879955 *Contributed equally
11. **Butler BE**, Hall AJ, Lomber SG. (2015). Functional imaging of pitch processing in the auditory cortex of the cat. *PLoS One* doi:10.1371/journal.pone.0134362. PMID: 26225563
10. **Butler BE**, Trainor LJ. (2015). The musician redefined: A behavioural assessment of rhythm perception in professional club DJs. *Timing and Time Perception*, doi:10.1163/22134468
9. Folland NA, **Butler BE**, Payne JE, Trainor LJ. (2015). Cortical representations sensitive to the number of perceived auditory objects emerge between 2 and 4 months of age: Electrophysiological evidence. **Journal of Cognitive Neuroscience** 27, 1060-1067. PMID: 2546670
8. **Butler BE**, Lomber SG. (2013). Functional and structural changes following deafness: From cochlea to cortex. *Frontiers in Systems Neuroscience* 7:89-105, doi:10.3389/fnsys.2013.00092.b. PMID: 24324409
7. **Butler BE**, Trainor LJ. (2013). Brief pitch-priming facilitates infants' discrimination of pitch-evoking noise: Evidence from event-related potentials. *Brain and Cognition* 83, 271-278. PMID: 24095845
6. **Butler BE**, Folland NA, Trainor LJ. (2013). Development of pitch processing: Infants' discrimination of iterated rippled noise stimuli with unresolved spectral content. *Hearing Research* 304, 1-6. PMID: 23764671
5. **Butler BE**, Trainor LJ. (2012). Sequencing the cortical processing of pitch-evoking stimuli using EEG analysis and source estimation. *Frontiers in Auditory Cognitive Neuroscience* 3, 180. PMID: 22740836
4. Folland NA, **Butler BE**, Smith NA, Trainor LJ. (2012). Processing simultaneous auditory objects in infancy: Music and mistuned harmonics. *Journal of the Acoustical Society of America* 131(1), 993-997. PMID: 22280722
3. Vida MD*, Vingilis-Jaremko L*, **Butler BE***, Gibson LC*, Monteiro S*. (2012). The reorganized brain: How treatment strategies for stroke and amblyopia can inform our knowledge of plasticity throughout the lifespan. *Developmental Psychobiology* 54(3),

357-368. PMID: 22415923 *Contributed equally

2. **Butler BE**, Purcell DW, Allen P. (2011). Distortion product otoacoustic emission contralateral suppression functions in children with auditory processing disorders. *International Journal of Audiology* 50(8), 530-539. PMID: 21751943

1. Purcell DW, **Butler BE**, Saunders TJ, Allen P. (2008). Distortion product otoacoustic emission contralateral suppression functions obtained with ramped stimuli. *Journal of the Acoustical Society of America* 124(4): 2133-2148. PMID: 19062854

Book Chapters

2. Herrmann BJ, **Butler BE**. (Under Review). Aging auditory cortex: The impact of reduced inhibition on function. In "The Neuroscience of Aging".

1. Lomber SG, **Butler BE**, Glick H, Sharma A. (In Press). Crossmodal neuroplasticity in deafness: Evidence from animal models and clinical populations. In "Multisensory Perception: from Laboratory to Clinic", Sathian and Ramachandran, eds.

Published Theses

Butler BE. (2013). Adults' and infants' perception of pitch-evoking stimuli with no resolvable spectral cues. McMaster University Libraries Institutional Repository (MacSphere).

Butler BE. (2008). Contralateral suppression of distortion product optoacoustic emissions in children with and without auditory processing disorders. University of Western Ontario.

Awards & Distinctions

Research Awards

2010-2012	NSERC PGS Doctoral Research Scholarship ($42,000)
2010-2011	OGS Doctoral Research Scholarship ($15,000; declined)
2009-2010	NSERC CREATE Auditory Neuroscience Scholarship ($22,000)
2009-2010	OGSST Prosser Scholarship ($15,000; declined)

Travel Support

2017	Acoustical Society of America "Acoustics Outreach to Budding Scientists" ($750)
	International Conference on Auditory Cortex ($500)
2014	Gordon Research Seminar Travel Grant ($650)
2012	Graduate Student Association Grant – Gordon Research Conference ($500)
2012	Psychology, Neuroscience & Behaviour Grant - Infant Studies ($500)
	Yates Travel Scholarship - Neurosciences and Music IV ($500)
	Psychology, Neuroscience & Behaviour Grant - Neurosciences and Music IV ($450)
2010	Psychology, Neuroscience & Behaviour Grant - ICMPC ($500)
2009	Graduate Student Association Grant - SMPC ($500)
	Psychology, Neuroscience & Behaviour Grant - SMPC ($500)

Teaching Distinctions

2010	Council of Canadian Departments of Psychology Teaching Award
2008	University of Western Ontario Teaching Honour Roll
	Graduate Student Teaching Award (Nominated)
2007	Graduate Student Teaching Award (Nominated)

Invited Talks (last 5 years)

2018	VCU Department of Anatomy & Neurobiology Seminar, Richmond, VA
	"The Search for an Neuroanatomical Basis for Plasticity following Deafness"
2017	National Centre for Audiology Hearing Research Seminar, London

"Brain organization in the deaf: Implications for plasticity and hearing restoration"

Spring 2017 Meeting of the Acoustical Society of America, Boston
"Quantifying connectivity to auditory cortex: Implications for crossmodal plasticity and hearing restoration"

2016 Department of Physiology and Pharmacology Seminar Series, London
"Structural Analysis of brain connectivity in deafness: Implications for functional reorganization & plasticity"

2015 11th Meeting of the German Neuroscience Society, Gottingen
"Cortical Plasticity following sensory deprivation: Characterizing the patterns of thalamocortical and corticocortical projections in early- and late-deaf cats"

2014 Gordon Research Conference on the Auditory System, Lewiston
"Imaging pitch processing in the cat auditory cortex with high-field fMRI"

2013 National Centre for Audiology Hearing Research Seminar, London
"Pitch processing and stream segregation during development"

Conference Participation (last 5 years)

2019 Conference on Implantable Auditory Prostheses, Tahoe City
"Neuroanatomical stability in the deaf: Implications for plasticity and functional restoration" (Poster)

International Hearing Loss Conference, Niagara-on-the-Lake
"Stability in the pattern of crossmodal projections following hearing loss" (Podium)

Association for Research in Otolaryngology, Baltimore
"An Interhemispheric Comparison of Projections to Temporal Auditory Cortex in Normal Hearing and Early Deaf Cats" (Poster)

2018 Gordon Research Conference on the Auditory System, Smithfield
"The dispersion of auditory cortical outputs to the superior colliculus following hearing loss" (Poster) & Discussion Leader – Seminar keynote session

International Multisensory Research Forum, Toronto
"The dispersion of auditory cortical outputs to the superior colliculus following hearing loss" (Poster)

42nd Association for Research in Otolaryngology Meeting, San Diego

2017 6th International Conference on Auditory Cortex, Banff
"Quantifying and comparing connectivity within auditory cortex and between sensory cortices in hearing and deaf cats" (Poster)

Conference on Implantable Auditory Prostheses, Lake Tahoe
"Quantifying connectivity to auditory cortex: Implications for crossmodal plasticity and hearing restoration" (Poster)

41st Association for Research in Otolayngology Meeting, Baltimore
"Quantifying the impact of early-onset hearing loss on stimulus-directed behaviour: An analysis of corticotectal projections in the deaf cat" (Podium)

2016 Gordon Research Conference on the Auditory System, Lewiston
"From Structure and Function to Behavior" (Session Moderator)

Canadian Society for Brain, Behaviour & Cognitive Science, Ottawa

"Quantifying corticotectal projections to the superior colliculus that underlie orienting behaviours in the cat" (Poster)

40th Association for Research in Otolaryngology Meeting, San Diego
"Patterns of neuroanatomical connections to auditory cortical areas in hearing and deaf cats" (Podium)

Canadian Neuroscience Meeting, Toronto
"Assessing the effects of deafness on the neuroanatomical projections to the second auditory cortex (A2) of the cat" (Poster)

2015 Conference on Implantable Auditory Prostheses, Lake Tahoe
"Differential patterns of thalamocortical and corticocortical projections to auditory fields of early- and late- deaf cats" (Poster)

Neuroscience 2015 – Meeting of the Society for Neuroscience, Chicago
"A comparison of thalamic and cortical projections to primary and non-primary auditory fields of the cat" (Poster)

Canadian Neuroscience Meeting, Vancouver
"Differential patterns of projections to the posterior auditory field in early- and late-deaf cats" (Poster)

Teaching and Course Design Experience

2018 Department of Psychology
University of Western Ontario, London
Instructor – Psych4295F Sensory Systems in Enriched & Deprived Environments

2015 Department of Psychology
University of Western Ontario, London
Guest Lecturer -– Psych2115 Introduction to Sensation & Perception

2014 School of Communication Sciences and Disorders (Professional Program)
University of Western Ontario, London
Course Instructor -– CSD9516 Auditory Evoked Potentials and Emissions
Course Instructor -– CSD9517 Physiological Measurement

2011-2012 Department of Psychology Neuroscience and Behaviour
McMaster University, Hamilton
Lecturer -– PSYCH1X03 Introduction to Psychology

2011 Department of Psychology, Neuroscience & Behaviour
McMaster University, Hamilton
Course Designer -– PNB2XE3 Descriptive Statistics
Hired to design an interactive research design course for new 2nd year curriculum

2011 Department of Psychology, Neuroscience & Behaviour
McMaster University, Hamilton
Teaching Assistant -– PNB 3L03 Neuroscience Laboratory

2010 Department of Psychology, Neuroscience & Behaviour
McMaster University, Hamilton
Course Instructor -– PSYCH1X03 Introduction to Psychology

2008-2010 Department of Psychology, Neuroscience & Behaviour
McMaster University, Hamilton

Teaching Assistant -– Introduction to Statistics & Research Design

2006-2008 Faculty of Health Sciences
University of Western Ontario, London
Teaching Assistant – Interpersonal Communications

Trainee and Student Supervision

Summer 2019 Nikhil Patil – Undergraduate Research Assistant

Soojung Yu – USRA Student

2018-2019 Thirushi Siriwardena – Honours Thesis Student
Neuroscience – University of Western Ontario

James Patienece – Honours Thesis Student
Neuroscience – University of Western Ontario

Summer 2018 Benson Li – Undergraduate Research Assistant

Nikhil Patil – USRA Student

2017-2018 Ruth Tran – Honours Thesis Student
Neuroscience – University of Western Ontario

Benson Li – Undergraduate Special Topics Student
Neuroscience – University of Western Ontario

2014-2016 Sangamanatha Veeranna -– PhD Candidate (Supervisory Commitee)
Health & Rehabilitation Science -– University of Western Ontario

Trainees co-supervised by others

2017- Alexandra Levine – Postdoctoral Scholar – University of Western Ontario
2017-2018 Candice Jennings – Honours Thesis – University of Western Ontario
Ruth Tran – Honours Thesis – University of Western Ontario
2016-2017 Kathy Xiong – Honours Thesis – University of Western Ontario
2015-2016 Julia Sunstrum – Honours Thesis – University of Western Ontario
2013-2016 Brittany Chow – Scholars Elective & Honours Thesis – University of Western Ontario
2014-2015 Taylor Ward-Able – Honours Thesis – University of Western Ontario
Alexandra de la Rua – Honours Thesis – University of Western Ontario
Amy Rae Cardinal – Honours Thesis – University of Western Ontario
2013-2014 Jenn Yun – Honours Thesis – University of Western Ontario
2012-2013 Carson Lo – Honours Thesis – McMaster University
2011-2012 Cathy Chen – Project Student – McMaster University
2009-2010 Jeremy Williams – Project Student – McMaster University
2008-2009 Christopher Slugocki – Honours Thesis – McMaster University

Attendance at Teaching Conferences & Training

2015 Spring Perspectives on Teaching Conference
University of Western Ontario, London

The Western Conference on Science Education
University of Western Ontario, London

2013 Instructional Skills Workshop
University of Western Ontario, London

2013	Symposium on Cognition, Learning, and Education McMaster University, Hamilton
2010-2012	McMaster Centre for Leadership and Learning -– TA Network
2008-2010	Western Certificate in University Teaching and Learning University of Western Ontario, London

Editoral Contributions

Invited Editor	Hearing Research – Central Consequences of Deafness Hearing Research – Special Issue on 6th International Conference on Auditory Cortex
Ad Hoc Reviewer	Journal of Neuroscience, Journal of Neurophysiology, Hearing Research, Neuroreport, Perceptual & Motor Skills, Neuropsychologia, Journal of the Acoustical Society of America, Neuroimage
Scientific Advisory Committee	Society for Music Perception & Cognition, Conference on Implantable Auditory Prostheses, International Hearing Loss Meeting

Service to Academy

2018	Co-Chair – Gordon Seminar on the Auditory System (Elected by peers)
2016	Advances & Perspectives in Auditory Neuroscience -– Organizing committee
2014-2018	University Research Board
2014-2015	Postdoctoral Association at Western -– Vice President (External) Canadian Association of Postdoctoral Scholars
2013-2014	Postdoctoral Association at Western -– President Western University Graduate Education Council University Senate Representative Postdoctoral Research Forum -– Panel moderator and host London Health Research Day -– Panel moderator and judge
2009-2012	McMaster University Graduate Students' Association -– Vice President
2010-2011	Psychology, Neuroscience & Behaviour Colloquium Committee Psychology, Neuroscience & Behaviour Chair Selection Committee

Knowledge Mobilization & Translation

2009-2011	Founded and organized a Science Translation Reading Group at McMaster University dedicated to improving public research communication
2008-2012	Contributed quarterly to a newsletter that related recent developmental psychology experiments to parents of young children.

Associations

Association for Research in Otolaryngology
Canadian Acoustical Association
Canadian Neuroscience Society
Cognitive Neuroscience Society
Society for Neuroscience
Canadian Society for Brain, Behaviour & Cognitive Science