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EDUCATION & PROFESSIONAL EXPERIENCE

Postdoctoral Scholar, University of Western Ontario Brain and Mind Institute Department of Psychology <u>Advisors:</u> Ingrid Johnsrude, Laura Batterink	2018-present
Postdoctoral Scholar, University of Chicago Chicago Center for Practical Wisdom Department of Psychology <u>Advisors:</u> Howard Nusbaum, Marc Berman	2015-2018
Ph.D., Psychology, University of Chicago <u>Advisor:</u> Howard Nusbaum	2015
A.M., Social Sciences, University of Chicago <u>Advisor:</u> Howard Nusbaum	2012
A.B., Music, University of Chicago General and Departmental Honors Phi Beta Kappa Honor Society	2009

FELLOWSHIPS, GRANTS, AND AWARDS

BrainsCAN Tier I Postdoctoral Fellowship Award University of Western Ontario	2018-2021
Western Cognitive Neuroscience Postdoctoral Fund University of Western Ontario Brain and Mind Institute	2018-2020
John Dewey Prize Lectureship University of Chicago Department of Psychology	2015
Division of Social Sciences Research Grant University of Chicago	2014-2015
Starkey Duncan Award for Excellence in Undergraduate Teaching University of Chicago Department of Psychology	2014
Norman H. Anderson Research Fellow University of Chicago Department of Psychology	2011-2015

Arts-Science Graduate Collaboration Grant
University of Chicago

2010-2011

Fulbright Program Finalist
United States Department of State

2009, 2010

PUBLICATIONS

Peer-Reviewed Articles

- [1] **Van Hedger, S.C.**, Nusbaum, H.C., Clohisy, L., Jaeggi, S.M., Buschkuhl, M., & Berman, M.G. (in press). Of cricket chirps and car horns: The effect of nature sounds on cognitive performance. *Psychonomic Bulletin & Review*
- [2] Zhen, A., **Van Hedger, S.C.**, Heald, S.L.M., Goldin-Meadow, S., & Tian, X. (2019). Manual directional gestures facilitate cross-modal perceptual learning. *Cognition*, 187, 178-187.
- [3] **Van Hedger, S.C.**, & Nusbaum, H.C. (2018). Individual differences in absolute pitch performance: Contributions of working memory, musical expertise, and tonal language background. *Acta Psychologica*, 191, 251-260.
- [4] **Van Hedger, S.C.**, Heald, S.L.M., Uddin, S., & Nusbaum, H.C. (2018). A note by any other name: Intonation context rapidly influences absolute note judgments. *Journal of Experimental Psychology: Human Perception & Performance*, 44, 1268-1282.
- [5] Uddin, S., Heald, S.L.M., **Van Hedger, S.C.**, & Nusbaum, H.C. (2018). Hearing sounds as words: Neural responses to environmental sounds in the context of fluent speech. *Brain & Language*, 179, 51-61.
- [6] Nusbaum, H.C., Uddin, S., **Van Hedger, S.C.**, & Heald, S.L.M. (2018). Consolidating skill learning through sleep. *Current Opinion in Behavioral Sciences*, 20, 174-182.
- [7] Uddin, S., Heald, S.L.M., **Van Hedger, S.C.**, Klos, S., & Nusbaum, H.C. (2018). Understanding environmental sounds in sentence context. *Cognition*, 172, 134-143.
- [8] **Van Hedger, S.C.**, Heald, S.L.M., & Nusbaum, H.C. (2018). Long-term pitch memory for music recordings is related to auditory working memory precision. *The Quarterly Journal of Experimental Psychology*, 71, 879-891.
- [9] **Van Hedger, S.C.**, Heald, S.L.M., Huang, A., Rutstein, B., & Nusbaum, H.C. (2017). Telling in-tune from out-of-tune: Widespread evidence for implicit absolute intonation. *Psychonomic Bulletin & Review*, 24, 481-488.
- [10] Heald, S.L.M.,* **Van Hedger, S.C.***, & Nusbaum, H.C. (2017). Perceptual plasticity for auditory object recognition. *Frontiers in Psychology*, 10.3389/fpsyg.2017.00781
- [11] **Van Hedger, S.C.**, Heald, S.L.M., & Nusbaum, H.C. (2016). What the [bleep]? Enhanced absolute pitch memory for a 1000 Hz sine tone. *Cognition*, 154, 139-150.
- [12] **Van Hedger, S.C.**, Heald, S.L.M., & Nusbaum, H.C. (2015). The effects of acoustic variability on absolute pitch categorization: Evidence of contextual tuning. *Journal of the Acoustical Society of America*,

138, 436-446.

- [13] **Van Hedger, S.C.**, Heald, S.L.M., Koch, R., & Nusbaum, H.C. (2015). Auditory working memory predicts individual differences in absolute pitch learning. *Cognition*, 140, 95-110.
- [14] **Van Hedger, S.C.**, Palmer, C., Hogstrom, A., & Nusbaum, H.C. (2015). Sleep consolidation of musical competence. *Music Perception: An Interdisciplinary Journal*, 33, 163-178.
- [15] Heald, S.L.M., **Van Hedger, S.C.**, & Nusbaum, H.C. (2014). Auditory category knowledge in experts and novices. *Frontiers in Neuroscience*, 8:260. 10.3389/fnins.2014.00260
- [16] **Hedger, S.C.**, Nusbaum, H.C., Lescop, O., Wallisch, P., & Hoeckner, B. (2013). Music can elicit a visual motion aftereffect. *Attention, Perception, & Psychophysics*, 75, 1039-1047.
- [17] **Hedger, S.C.**, Heald, S.L.M., & Nusbaum, H.C. (2013). Absolute pitch may not be so absolute. *Psychological Science*, 24, 1496-1502.
- [18] **Hedger, S. C.**, Nusbaum, H.C., & Hoeckner, B. (2013). Conveying movement in music and prosody. *PLOS One*, 10.1371/journal.pone.0076744

Book Chapters and Encyclopedia Entries

- [1] **Van Hedger, S.C.**, & Nusbaum, H.C. (2018). Absolute pitch. In: J. Vonk, T. K. Shackelford (Eds.), *Encyclopedia of Animal Cognition and Behavior*. Springer, Cham.
- [2] Heald, S.L.M., **Van Hedger, S.C.**, & Nusbaum, H.C. (2017). Understanding sound: Auditory skill acquisition. *Psychology of Learning and Motivation*, 67, 53-93.

* Co-First Authors

MANUSCRIPTS UNDER REVIEW

- [1] **Van Hedger, S.C.**, Heald, S.L.M., & Nusbaum, H.C. Absolute pitch can be learned by some adults. BioRxiv 325050; <https://doi.org/10.1101/325050>
- [2] **Van Hedger, S.C.**, Nusbaum, H.C., Heald, S.L.M., Huang, A., Kotabe, H., & Berman, M.G. The aesthetic preference for nature sounds depends on sound object recognition. PsyArXiv; <https://psyarxiv.com/nsqvy/>
- [3] **Van Hedger, S.C.**, Veillette, J., Heald, S.L.M., & Nusbaum, H.C. Redefining perfect pitch to be less perfect.
- [4] Stenfors, C., **Van Hedger, S.C.** ... Berman, M.G. Cognitive Restoration from Nature across Multiple Exposure Types - A Meta-Analysis Delineating the Effects of Test Order and Affect. PsyArXiv; <https://doi.org/10.31234/osf.io/w6n2f>
- [5] Uddin, S., Reis, K., **Van Hedger, S.C.**, Heald, S.L.M., & Nusbaum, H.C. Cortical mechanisms of talker normalization in fluent sentences.
- [6] Heald, S.L.M., Uddin, S., **Van Hedger, S.C.**, Snyder, J., & Nusbaum, H.C. Rapid generalized perceptual learning affects early sensory changes in neural processing.

CLASSROOM TEACHING EXPERIENCE

My goal is to turn the classroom into a space where students can engage in guided, active problem solving. This approach allows students to develop scientific curiosity toward course topics, which promotes retention and expansion of taught material. I frequently design and implement short, illustrative experiments so students can experience class concepts as both participants and researchers. These approaches are flexible enough to be realized in both small seminars and large lecture-style courses.

Instructor of Record

PSYC 24860 – The Musical Mind (*The University of Chicago*)

Instructor

- Self-designed course (scope, aims, reading list, lectures, and assignments)
- Prepared and gave nine lectures on a variety of topics (e.g., absolute pitch, musical syntax)
- Led weekly discussion of recent and classic empirical papers in music cognition

SOSC 14100 – Mind I (*The University of Chicago*)

- Led a weekly discussion section of 19 students
- Delivered a lecture (Title: The Musical Mind) to approximately 100 students
- Responsible for all grading and assignment of final course grades for discussion section

SOSC 14200 – Mind II (*The University of Chicago*)

- Led a weekly discussion section of 19 students
- Delivered a lecture (Title: Mechanisms of Musical Understanding) to approximately 100 students
- Responsible for all grading and assignment of final course grades for discussion section

Teaching Assistant

SOSC 14100, 14200, 14300 – Mind I, II, III (*The University of Chicago*)

- Evaluated weekly response papers
- Arranged individual meeting with students to discuss ideas from the course

PSYC 20700 – Sensation and Perception (*The University of Chicago*)

- Led weekly discussion sections of approximately 20 students
- Delivered a lecture on Music Perception to approximately 60 undergraduates
- Organized an out-of-class midterm study session (attended by 30 students)

PSYC 20200 – Psychological Research Methods (*The University of Chicago*)

- Led a weekly discussion section of 20 students
- Delivered a lecture on Experimental Designs to approximately 75 undergraduates
- Helped students design and conduct two out-of-class research projects

Guest Lecturer

COMMSCI 4417A – Introduction to Hearing Science (*University of Western Ontario*)

Lecture Title: “Perceptual Organization of Music”

PSY 210 – Introduction to Psychological Science (*Elmhurst College*)

Lecture Title: “Does this Taylor Swift sound sharp? Exploring pitch memory in the general population”

MENTORSHIP EXPERIENCE

Research Mentor

2010 - present

The University of Chicago, University of Western Ontario

Guided 20+ undergraduate students through conducting psychological research

Co-authored papers with 7 undergraduate students (5 published, 2 under review)

Psychology Honors Thesis Advising

2013 – present

[1] Mackenzie Bacon (2018-2019). *University of Western Ontario*.

Title: Memory for Words and Sentences: The Effect of Acoustical Degradation

[2] Luke Clohisy (2017-2018). *The University of Chicago*.

Title: Memory for popular music: Evidence for widespread tempo abilities and implicit pitch categories

[3] Max Bluestone (2015- 2016). *The University of Chicago*.

Title: The effects of semantic and temporal congruency on memory for audiovisual clips

[4] Anders Hogstrom (2012-2013). *The University of Chicago*.

Title: The sound of silence: Attention entrainment to isochronous and syncopated beats)

Practicum Advisor, Master's Program in Computer Science (MPCS)

2016

The University of Chicago

Worked closely with two masters students in the design and execution of psychophysical projects

Evaluated students' progress several times throughout the span of the projects

PRISM Graduate Student Preceptor

2012 - 2014

Department of Psychology, The University of Chicago

Organized biannual "lab night" to help students find research opportunities on campus

Planned approximately 6 additional events each year to help students explore employment options

Held office hours for students to discuss how to become more involved in the Psychology major

Research Consultant, Advanced Graduate Course

2009-2010

The University of Chicago

Served as primary research consultant for an advanced graduate course in multimedia perception

Assisted graduate students in the design, execution, and data analysis of independent research

PEER-REVIEW ACTIVITIES

Ad-Hoc reviewer for:

PNAS | Cognitive Science | eLife | Brain and Language | Social Cognitive and Affective Neuroscience | PLOS One | Frontiers in Neuroscience | Acta Psychologica | Journal of Experimental Psychology: Learning, Memory, and Cognition | The Journal of the Acoustical Society of America | Current Psychology | 15th International Conference on Music Perception and Cognition

PROFESSIONAL ORGANIZATIONS

The Society for Music Perception and Cognition | The Psychonomic Society | Society for the Neurobiology of Language | The Association for Psychological Science | The Acoustical Society of America | The American Psychological Association

ACADEMIC SERVICE

Fulbright Scholarship Interviewer

2012 – 2018

The College, University of Chicago

Annually review between 4-7 applications for Fulbright Scholarships

Interview applicants and submit recommendations to the university

Workshop Coordinator (Topic: Perception and Understanding of Music)

2011 - 2012

Council on Advanced Studies, University of Chicago

Organized biweekly presentations of original research given by graduate students and faculty

Managed a budget of \$1500 for organizing outside speaker visits

Travel and Research Committee Member

2010 - 2014

Psychology Graduate Student Organization, University of Chicago

Reviewed applications for travel and research related expenses among graduate students

Allocated funds based on merit and availability

SELECTED CONFERENCE PRESENTATIONS

- [1] **Van Hedger, S.C.**, & Nusbaum, H.C. (2019). Individual differences in absolute pitch performance: Contributions of working memory, musical expertise, and tonal language background. *42nd Annual Midwinter Meeting of the Association for Research in Otolaryngology*, Baltimore, MD
- [2] **Van Hedger, S.C.**, & Nusbaum, H.C. (2018). Individual differences in absolute pitch performance: Contributions of working memory, musical expertise, and tonal language background. *Annual Meeting of the Psychonomic Society*, New Orleans, LA
- [3] Heald, S.L.M., **Van Hedger, S.C.**, & Nusbaum, H.C. (2018). Individual differences in auditory working memory is predictive of compensation response to spectral perturbation from EH to AE. *Annual Meeting of the Psychonomic Society*, New Orleans, LA
- [4] Zhen, A., **Van Hedger, S.C.**, Heald, S.L.M., Goldin-Meadow, S., & Tian, X. (2017). Manual directional gestures facilitate learning of Mandarin tones. *Society for the Neurobiology of Language Conference*, Baltimore, MD
- [5] Heald, S.L.M., Uddin, S., **Van Hedger, S.C.**, Snyder, J., & Nusbaum, H.C. (2017). Early sensory changes in neural processing gate generalized perceptual learning. *Society for the Neurobiology of Language Conference*, Baltimore, MD
- [6] **Van Hedger, S.C.**, Heald, S.L.M., Huang, A., Rutstein, B., & Nusbaum, H.C. (2016). Telling in-tune from out-of-tune: Widespread evidence for implicit absolute intonation. *Annual Meeting of the Psychonomic Society*, Boston, MA
- [7] Heald, S.L.M., **Van Hedger, S.C.**, & Nusbaum, H.C. (2016). Working memory predicts individual differences in learning synthetic speech produced by rule. *Annual Meeting of the Psychonomic Society*, Boston, MA
- [8] Uddin, S., Heald, S.L.M., **Van Hedger, S.C.**, & Nusbaum, H.C. (2016). Recognizing sounds in sentence context. *Annual Meeting of the Psychonomic Society*, Boston, MA
- [9] **Van Hedger, S.C.**, Heald, S.L., Wu, S., & Nusbaum, H.C. (2015). Judging the absolute pitch of novel

recordings of familiar songs. *Annual Meeting of the Psychonomic Society*, Chicago, IL

- [10] **Van Hedger, S.C.**, Heald, S.L., Nusbaum, H.C. (2015). The effects of acoustic variability on absolute pitch categorization: Evidence for contextual tuning. *Acoustical Society of America 170th Meeting*, Jacksonville, FL
- [11] Heald, S.L., **Van Hedger, S.C.**, Nusbaum, H.C. (2015). Incidental absolute pitch learning in an interactive, multi-modal environment. *Acoustical Society of America 170th Meeting*, Jacksonville, FL
- [12] **Van Hedger, S.C.**, Heald, S.L., Koch, R., Nusbaum, H.C. (2015). Auditory working memory predicts individual differences in absolute pitch learning: Evidence from short- and long-term training. *Society for Music Perception and Cognition Conference*, Vanderbilt University, Nashville, TN
- [13] **Van Hedger, S.C.**, Heald, S.L., Koch, R., Nusbaum, H.C. (2014). Absolute memory for popular songs is predicted by auditory working memory ability. *Acoustical Society of America 168th Meeting*, Indianapolis, IN
- [14] Hogstrom, A., **Hedger, S.C.**, Nusbaum, H.C. (2013). The sound of silence: Attention entrainment to isochronous and syncopated beats. *Society for Music Perception and Cognition Conference*, Ryerson University, Toronto, ON
- [15] **Hedger, S.C.**, Heald, S.L., Nusbaum, H.C. (2013). Absolute pitch may not be so absolute. *Society for Music Perception and Cognition Conference*, Ryerson University, Toronto, ON
- [16] **Hedger, S.C.**, Klos, S., Nusbaum, H.C. (2013). Individual differences in the short- and long-term training of musical pitch. *Midwest Music Cognition Symposium*, The Ohio State University, Columbus, OH
- [17] Heald, S.L., **Hedger, S.C.**, Klos, S., Colson, B., Nusbaum, H.C. (2013) Spoken gesture is integrated with sentence meaning during speech comprehension. *Auditory Cognitive Neuroscience Society Meeting*, Tucson, AZ
- [18] **Hedger, S.C.**, Nusbaum, H.C., Lescop, O., Wallisch, P., Hoeckner, B. (2013). Music can elicit a visual motion aftereffect: Evidence from behavior and fMRI. *Auditory Cognitive Neuroscience Society Meeting*, Tucson, AZ
- [19] **Hedger, S.C.**, Heald, S.L., Nusbaum, H.C. (2012). Absolute pitch may not be so absolute. *Annual Meeting of the Psychonomic Society*, Minneapolis, MN
- [20] **Hedger, S.C.**, Nusbaum, H.C., Lescop, O., Wallisch, P., Hoeckner, B. (2012). Music can elicit a visual motion aftereffect. *Association for Psychological Science Convention*, Chicago, IL
- [21] **Hedger, S.C.**, Palmer, C., Hogstrom, A., Nusbaum, H.C. (2012). The effects of sleep-dependent consolidation on motoric and abstract learning in music. *Midwest Cognitive Science Meeting*, Indiana University, Bloomington, IN
- [22] **Hedger, S.C.**, Hoeckner, B., Nusbaum, H.C. (2011). Music Can Convey Movement like Prosody in Speech. *Society for Music Perception and Cognition Conference*, Eastman School of Music, Rochester, NY
- [23] **Hedger, S.C.**, Heald, S.L., DeSouza, J., Hoeckner, B., Nusbaum, H.C. (2011). The Role of Vibrotactile Input in Musical Performance. *Franke Institute for the Humanities*, The University of Chicago, Chicago, IL
- [24] **Hedger, S.C.**, Hoeckner, B., Nusbaum, H.C. (2011). The Sound of Motion in Music. *Midwest Cognitive Science Meeting*, Michigan State University, East Lansing, MI

- [25] Heald, S.L., **Hedger, S.C.**, Lescop, O., Hoeckner, B., Nusbaum, H.C. (2010). Localized Context Influences the Perceptual Judgment of Musical Tones. *Annual Meeting of the Psychonomic Society*, St. Louis, MO.

INVITED TALKS

- [1] **Van Hedger, S.C.** (2019, April). Absolute pitch can be trained in some high-auditory working memory adults. *The 5th Learning and Plasticity (LaP) Meeting*. Äkäslompolo, Finland
- [2] **Van Hedger, S.C.** (2016, June). Pitch memory in adulthood: Individual differences, generalizations, and abstractions. *Musical Learning across the Lifespan Workshop*. University of Western Ontario. London, ON
- [3] **Van Hedger, S.C.** (2015, December). Telling sharp from flat: Pitch memory in the general population. DePauw University. Greencastle, IN
- [4] **Van Hedger, S.C.** (2015, July). Developing a framework for musical understanding. The University of Chicago. Chicago, IL

REFERENCES

Dr. Howard Nusbaum	h-nusbaum@uchicago.edu
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Dr. Ingrid Johnsrude	ijohnsru@uwo.ca
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