

Stephen C. Van Hedger

Curriculum Vitae

University of Western Ontario
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EDUCATION & PROFESSIONAL EXPERIENCE

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

FELLOWSHIPS, GRANTS, AND AWARDS

Western Cognitive Neuroscience Postdoctoral Fund (\$50,000) 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 (\$11,795) 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 (\$2580) University of Chicago Department of Psychology	2011-2015
Arts Science Graduate Collaboration Grant (\$1,500) University of Chicago	2010-2011

Fulbright Program Finalist
United States Department of State

2009, 2010

PUBLICATIONS

- 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*
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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
- 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.
- 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.
- 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.
- 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.
- 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

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.

Hedger, S.C., Heald, S.L.M., & Nusbaum, H.C. (2013). Absolute pitch may not be so absolute. *Psychological Science*, 24, 1496-1502.

Hedger, S. C., Nusbaum, H.C., & Hoeckner, B. (2013). Conveying movement in music and prosody. *PLOS One*, 10.1371/journal.pone.0076744

* Co-First Authors

MANUSCRIPTS UNDER REVIEW

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>

Van Hedger, S.C., & Nusbaum, H.C. Individual differences in absolute pitch performance: Contributions of working memory, musical expertise, and tonal language background. PsyArXiv; <https://doi.org/10.31234/osf.io/vfqe6>

Van Hedger, S.C., Huang, A., Nusbaum, H.C., Kotabe, H., & Berman, M.G. The aesthetic preference for nature sounds depends on sound object recognition.

Van Hedger, S.C., Nusbaum, H.C., Clohisy, L., Jaeggi, S.M., Buschkuhl, M., & Berman, M.G. Of cricket chirps and car horns: The effect of nature sounds on cognitive performance. PsyArXiv; <https://doi.org/10.31234/osf.io/f5hcz>

Stenfors, C., **Van Hedger, S. C.**, Schertz, K. E., Meyer, F. C., Smith, K., Norman, G., ... Berman, M. 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>

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.

Uddin, S., Reis, K., **Van Hedger, S.C.**, Heald, S.L.M., & Nusbaum, H.C. Cortical mechanisms of talker normalization in fluent sentences.

Zhen, A., **Van Hedger, S.C.**, Heald, S.L.M., Goldin-Meadow, S., & Tian, X. Manual Directional Gestures Facilitate Cross-Modal Perceptual Learning

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 the 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 to creating an active learning environment are flexible enough to be realized in both intimate seminars and large lecture-style courses.

PSYC 24860 – The Musical Mind

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, 14200 – Mind I, II

Lecturer

Led a weekly discussion section of 19 students
 Delivered a lecture to approximately 100 undergraduates and 10 faculty
 Responsible for all grading and assignment of final course grades for discussion section

SOSC 14100, 14200, 14300 – Mind I, II, III

Teaching Intern

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

PSYC 20700 – Sensation and Perception

Teaching Assistant

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

Teaching Assistant

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

MENTORSHIP EXPERIENCE

Research Mentor

2010 - 2018

The University of Chicago

Guided 20+ undergraduate students through conducting psychological research

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

Research Mentor, Psychology Honors Thesis

2013 - 2018

The University of Chicago

Luke Clohisy (2017-2018), currently a fourth-year undergraduate at the University of Chicago
 (Project Title: *Rapid shifts in attention to pitch and tempo can influence long-term memory for popular recordings*)
Max Bluestone (2015- 2016), currently Lab Manager of Dr. Maureen Ritchey's Memory Modulation
 Lab at Boston College (Project Title: *The effects of semantic and temporal congruency on memory for audiovisual clips*)
Anders Hogstrom (2012-2013), currently a Ph.D. Student in Clinical Psychology at the University of
 Connecticut (Project Title: *The sound of silence: Attention entrainment to isochronous and syncopated beats*)

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 | Acta Psychologica | Journal of Experimental Psychology: Learning, Memory, and Cognition | The Journal of the Acoustical Society of America | 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

PRISM Graduate Student Preceptor 2012 - 2014

Department of Psychology, University of Chicago

Designed events to help undergraduate students find research opportunities on campus, summer internships, and employment after graduation

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

- Zhen, A., **Van Hedger, S.C.**, Heald, S.L.M., Goldin-Meadow, S., & Tian, X. (2017, November). Manual directional gestures facilitate learning of Mandarin tones. Society for the Neurobiology of Language Conference, Baltimore, MD.
- Heald, S.L.M., Uddin, S., **Van Hedger, S.C.**, Snyder, J., & Nusbaum, H.C. (2017, November). Early sensory changes in neural processing gate generalized perceptual learning. Society for the

Neurobiology of Language Conference, Baltimore, MD.

- **Van Hedger, S.C.**, Heald, S.L.M., Huang, A., Rutstein, B., & Nusbaum, H.C. (2016, November). Telling in-tune from out-of-tune: Widespread evidence for implicit absolute intonation. Annual Meeting of the Psychonomic Society, Boston, MA.
- Heald, S.L.M., **Van Hedger, S.C.**, & Nusbaum, H.C. (2016, November). Working memory predicts individual differences in learning synthetic speech produced by rule. Annual Meeting of the Psychonomic Society, Boston, MA.
- Uddin, S., Heald, S.L.M., **Van Hedger, S.C.**, & Nusbaum, H.C. (2016, November). Recognizing sounds in sentence context. Annual Meeting of the Psychonomic Society, Boston, MA.
- **Van Hedger, S.C.**, Heald, S.L., Wu, S., & Nusbaum, H.C. (2015, November). Judging the absolute pitch of novel recordings of familiar songs. Annual Meeting of the Psychonomic Society, Chicago, IL.
- **Van Hedger, S.C.**, Heald, S.L., Nusbaum, H.C. (2015, November). *The effects of acoustic variability on absolute pitch categorization: Evidence for contextual tuning*. Acoustical Society of America 170th Meeting. Jacksonville, FL.
- Heald, S.L., **Van Hedger, S.C.**, Nusbaum, H.C. (2015, November). *Incidental absolute pitch learning in an interactive, multi-modal environment*. Acoustical Society of America 170th Meeting. Jacksonville, FL.
- **Van Hedger, S.C.**, Heald, S.L., Koch, R., Nusbaum, H.C. (2015, August). *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.
- **Van Hedger, S.C.**, Heald, S.L., Koch, R., Nusbaum, H.C. (2014, October). *Absolute memory for popular songs is predicted by auditory working memory ability*. Acoustical Society of America 168th Meeting. Indianapolis, IN.
- Hogstrom, A., **Hedger, S.C.**, Nusbaum, H.C. (2013, August). *The sound of silence: Attention entrainment to isochronous and syncopated beats*. Society for Music Perception and Cognition Conference. Ryerson University, Toronto, ON.
- **Hedger, S.C.**, Heald, S.L., Nusbaum, H.C. (2013, August). *Absolute pitch may not be so absolute*. Society for Music Perception and Cognition Conference. Ryerson University, Toronto, ON.
- **Hedger, S.C.**, Klos, S., Nusbaum, H.C. (2013, May). *Individual differences in the short- and long-term training of musical pitch*. Midwest Music Cognition Symposium. The Ohio State University, Columbus, OH.
- Heald, S.L., **Hedger, S.C.**, Klos, S., Colson, B., Nusbaum, H.C. (2013, January). *Spoken gesture is integrated with sentence meaning during speech comprehension*. Auditory Cognitive Neuroscience Society Meeting, Tucson, AZ.
- **Hedger, S.C.**, Nusbaum, H.C., Lescop, O., Wallisch, P., Hoeckner, B. (2013, January). *Music can elicit a visual motion aftereffect: Evidence from behavior and fMRI*. Auditory Cognitive Neuroscience Society Meeting, Tucson, AZ.
- **Hedger, S.C.**, Heald, S.L., Nusbaum, H.C. (2012, November). *Absolute pitch may not be so absolute*. Annual Meeting of the Psychonomic Society, Minneapolis, MN.
- **Hedger, S.C.**, Nusbaum, H.C., Lescop, O., Wallisch, P., Hoeckner, B. (2012, May). *Music can elicit a visual motion aftereffect*. Association for Psychological Science Convention, Chicago, IL.
- **Hedger, S.C.**, Palmer, C., Hogstrom, A., Nusbaum, H.C. (2012, May). *The effects of sleep-dependent consolidation on motoric and abstract learning in music*. Midwest Cognitive Science Meeting. Indiana University, Bloomington, IN.
- **Hedger, S.C.**, Hoeckner, B., Nusbaum, H.C. (2011, August). *Music Can Convey Movement like Prosody in Speech*. Society for Music Perception and Cognition Conference. Eastman School of Music, Rochester, NY.
- **Hedger, S.C.**, Heald, S.L., DeSouza, J., Hoeckner, B., Nusbaum, H.C. (2011, May). *The Role of Vibrotactile Input in Musical Performance*. Franke Institute for the Humanities. The University of Chicago, Chicago, IL.

- **Hedger, S.C.**, Hoeckner, B., Nusbaum, H.C. (2011, April). *The Sound of Motion in Music*. Midwest Cognitive Science Meeting. Michigan State University, East Lansing, MI.
- Heald, S.L., **Hedger, S.C.**, Lescop, O., Hoeckner, B., Nusbaum, H.C. (2010, November). *Localized Context Influences the Perceptual Judgment of Musical Tones*. Annual Meeting of the Psychonomic Society, St. Louis, MO.

INVITED TALKS

- **Van Hedger, S.C.** (2016, June). *Pitch memory in adulthood: Individual differences, generalizations, and abstractions*. Invited talk: Musical Learning across the Lifespan Workshop. University of Western Ontario. London, ON.
- **Van Hedger, S.C.** (2015, December). *Telling sharp from flat: Pitch memory in the general population*. Invited talk at DePauw University. Greencastle, IN.
- **Van Hedger, S.C.** (2015, July). *Developing a framework for musical understanding*. Invited talk, Summer Undergraduate Research Group. The University of Chicago, Chicago, IL.
- **Van Hedger, S.C.** (2014, March). *Does this Taylor Swift sound sharp? Exploring pitch memory in the general population*. Invited talk at Elmhurst College. Elmhurst, IL.

REFERENCES

Dr. Howard Nusbaum
Dr. Marc Berman
Dr. Berthold Hoeckner
Dr. Anne Henly

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bhoeckne@uchicago.edu
ashenly@uchicago.edu