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EDUCATION

- 1995-1999 Ph.D., Department of Psychology
Cognitive Psychology, Neurophysiology Minor
University of Wisconsin-Madison
Thesis: *Auditory Constraints on Speech Perception: An Examination of Spectral Contrast*
- 1991-1995 B.S. Department of Psychology
University of Wisconsin-Madison

EMPLOYMENT

- 2006- Associate Professor, Tenured
Department of Psychology
Carnegie Mellon University, Pittsburgh, PA
- 2004-2006 Associate Professor, Untenured
Department of Psychology
Carnegie Mellon University, Pittsburgh, PA
- 1999-2004 Assistant Professor
Department of Psychology
Carnegie Mellon University, Pittsburgh, PA
- 1999- Affiliated Faculty
Center for the Neural Basis of Cognition
Carnegie Mellon University & University of Pittsburgh
- 1995-1999 National Science Foundation Predoctoral Fellow
University of Wisconsin-Madison
- 1995-1999 Graduate Research Assistant
Department of Psychology, Dr. Keith Kluender
University of Wisconsin-Madison
- 1998 Graduate Research Assistant
Department of Neurophysiology, Dr. William Rhode
University of Wisconsin-Madison

AWARDS & HONORS

2008	Virginia W. Toomey Award in Auditory Science
2007	Association for Psychological Science "Rising Star" in Psychology Evie and Ron Krancer Award in Auditory Science
2002	Dennis Klatt Research in Speech Science Award American Speech Language and Hearing Association
2002	14 th Annual Beckman Frontiers of Science Symposium Invitee National Academy of Sciences
2000-2006	21 st Century Scientist Award - Bridging Mind, Brain & Behavior James S. McDonnell Foundation
1999	Acoustical Society Young Investigator Award Acoustical Society of America
1999	Henry Vilas Professional Development Fellowship University of Wisconsin
1995	National Science Foundation Predoctoral Research Fellowship
1998	Ruth G. & Joseph D. Matarazzo Research Award American Psychological Foundation
1998	Sigma Xi Grants-In-Aid of Research Award National Sigma Xi Chapter
1997	Royalty Research Award University of Wisconsin
1997	M. Schwartz Experimental Psychology Fellow University of Wisconsin
1996	Roderick Menzies Graduate Fellowship University of Wisconsin
1995	Henry Vilas Fellowship University of Wisconsin
1995	Phi Beta Kappa
1995	Herfurth Award to Outstanding Senior Woman University of Wisconsin
1994	Hilldale Undergraduate Research Award University of Wisconsin
1994	Gilchrist Undergraduate Research Award University of Wisconsin
1994	Psi Chi Undergraduate Research Award University of Wisconsin
1991	Ferdinand Plaenert Scholarship University of Wisconsin
1991	Academic Excellence Scholarship State of Wisconsin

PROFESSIONAL ORGANIZATIONS

Acoustical Society of America
American Association for the Advancement of Science
American Psychological Association

Cognitive Neuroscience Society
Psychonomic Society
Sigma Xi

EDITORIAL ACTIVITIES

Editorial Board:

Perception & Psychophysics
Psychological Review

Ad Hoc Reviewer of Submitted Manuscripts:

Acoustic Research Letters Online
Animal Cognition
Cognition
Cognitive, Affective, and Behavioral Neuroscience
Cognitive Brain Research
Current Directions in Psychological Science
Journal of the Acoustical Society of America
Journal of Experimental Psychology: Human Perception & Performance

Journal of Memory and Language
Journal of Phonetics
Language and Cognitive Processes
Language and Speech
Memory and Cognition
Nature Reviews Neuroscience
Perception & Psychophysics
(editorial board)
Phonetica
Psychonomic Bulletin and Review
Psychological Review

Reviewer of Grant Proposals:

National Science Foundation, National Institutes of Health, Autism Now Foundation, Wellcome Trust

OTHER PROFESSIONAL ACTIVITIES

Co-director with Dr. Julie Fiez, NIH (NIGMS) T32 Training Grant, T32GM081760, *Predoctoral Training at the Interface of the Behavioral and Biomedical Sciences*.

Speech Communication Technical Committee Member, Acoustical Society of America

Organizing Committee, International Conference on Spoken Language Processing (ICSLP/INTERSPEECH 2006, Pittsburgh, PA)

Organizing Committee, 143rd Meeting of the Acoustical Society of America, Pittsburgh, PA, June, 2002

PENDING RESEARCH GRANT AWARDS

Principal Investigator, *The Pittsburgh NEURO Network: A collaborative for undergraduate research training in cognitive neuroscience*, National Institutes of Health (*Blueprint Program for Enhancing Neuroscience Diversity through Undergraduate Research Education Experiences (R25)*, RFA-MH-10-070), submitted 03/25/10.

Principal Investigator, *Formation and Tuning of Complex Auditory Categories*, National

Institutes of Health (R01 renewal for award ending 08/31/10), submitted 07/06/09, recommended for funding)

Principal Investigator, *Examining speech categorization among human listeners using magnetoencephalography*. Deafness Research Foundation, submitted 12/4/09.

ONGOING RESEARCH GRANT AWARDS

Principal Investigator, *Learning to accommodate variation in speech input*, National Science Foundation, \$500,000 over 3 years, 10/01/09-09/30/12.

Principal Investigator, *Learning Complex Auditory Categories*, National Science Foundation (2nd renewal), 04/01/2008 - 03/31/2010, \$229,666.

Co-Director with Dr. Julie Fiez, University of Pittsburgh, *Predocutorial Training Program in Behavioral Brain Research (T32)*, T32GM081760, National Institute of General Medical Sciences, Institutional NRSA Award, \$1,485,792 over 5 years, 7/1/2007-6/30/2012.

Principal Investigator, *Formation and Tuning of Complex Auditory Categories*, National Institutes of Health, 2 R01DC004674-04A2, \$1,532,201 over 5 years, 09/01/2005-8/31/2010.

PAST RESEARCH AWARDS

Principal Investigator, *Uncovering the Neural Basis of Auditory Expertise*, Berkman Faculty Development Fund, \$6250, January 2007.

Principal Investigator, *Electrophysiological Investigations of Auditory Cognition*, Pilot Imaging Program, Department of Radiology Magnetic Resonance Research Center, University of Pittsburgh, \$7650, January 2008.

Principal Investigator, *Examining context-dependent speech categorization in human listeners using magnetoencephalography (MEG)*, National Organization for Hearing Research, submitted January 2008, \$20,000 over 1 year. Winner of the 2008 Virginia W. Toomey Award in Auditory Science.

Principal Investigator with co-Investigator Dr. Kaori Idemaru, *Development of Eyetracking Methodology to Investigate Cue Weighting in Auditory Categorization*, National Organization for Hearing Research, \$20,000, 2/2007-2/2008. Winner of the 2007 Evie and Ron Krancer Award in Auditory Science.

Co-Investigator with Dr. Sheila Pratt, University of Pittsburgh, Dr. Diane Sabo, Children's Hospital, and Dr. Suzanne Curtin, University of Calgary, *Behavioral Investigations of Vowel Perception in Infants With and Without Hearing Impairment*, National Organization of Hearing Research.

Co-Investigator with Dr. Suzanne Curtin, University of Calgary and Dr. Scott Kiesling, University of Pittsburgh, *Cognitive and Social Development in Linguistic Change: A Pilot Study*, National Science Foundation, awarded, \$124,853, 08/31/05-08/31/2007 (no-cost extension to 08/2008).

Principal Investigator, *Learning complex auditory categories*, National Science Foundation, renewal, \$200,000, BCS-0345773, 05/01/04-04/30/06.

Principal Investigator, *Learning Complex Auditory Categories*, National Institutes of Health (R01), \$237,000 over 4 years, 09/01/01-08/31/05.

Principal Investigator, *Converging Models of the Influence of Experience upon Perception*, Bridging Mind, Brain, & Behavior, 21st Century Scientist Award from the James S. McDonnell Foundation. \$449,515 over 3 years, 03/01/01-02/28/04.

Principal Investigator, *An Investigation of the Perceptual and Learning Influences of Phonetic Category Formation*, American Speech-Language-Hearing Association (Dennis Klatt Memorial Award), \$5,000, 10/24/02.

Principal Investigator, *Learning Complex Auditory Categories*, National Science Foundation, \$295,656 over 2 years, 09/01/01-8/31/04.

Principal Investigator, *Spectral-temporal Boundaries of Perceptual Contrast: Developing the Gerbil as a Behavioral Model of Speech Perception*, National Organization of Hearing Research, \$10,000, 1/15/01-1/14/02.

Principal Investigator, *Developing the gerbil (*Mericones unguiculatus*) as an integrated model of speech perception*, Deafness Research Foundation. \$20,000, 1/1/00-12/31/01.

Principal Investigator, *Investigating the Role of Learning in Language Acquisition*, Faculty Development Grant, Carnegie Mellon University \$6450, 12/01/99.

Co-Investigator, *Models of Multimodal Interactive Language Learning*, Riksbankens Jubileumsfond, The Bank of Sweden Tercentenary Foundation, in collaboration with Dr. Francisco Lacerda and Dr. Ulla Sundberg of University of Stockholm and Dr. Rolf Carlson of KTH, Swedish Royal Institute of Technology, \$745,000 over 5 years for CMU segment of the project, 01/01/04-12/31/09.

PUBLICATIONS IN PREPARATION (DATA/ANALYSES COMPLETE, MANUSCRIPTS IN PREP)

- Adaptation to short-term feature-based deviations in auditory categories, with Dr. Kaori Idemaru
- Development of children's perception and production of English /r/-/l/, with Dr. Kaori Idemaru
- Non-native speech category learning within a video game, with Sung-joo Lim
- Predicting online sound categorization performance, with Sung-joo Lim & Dr. Andrew Lotto
- Predicting native English-like performance by native Japanese speakers, with Drs. Erin Ingvalson and Jay McClelland
- The wicked witch lives: understanding the role of long-term average spectrum in accented speech, with Jingyuan Huang & Dr. Andrew Lotto
- Context-dependent lexical tone perception does not depend on categorization, with Jingyuan Huang
- The role of long-term average spectra in predicting "talker normalization", with Jingyuan

Huang

- Evidence for adaptive coding in speech perception, with Erika Laing

PUBLICATIONS

Stephens, J. D. W. & Holt, L. L. (*submitted*). Learning novel artificial visual cues for use in speech identification.

Ingvalson, E. M., Holt, L. L., & McClelland, J. L. (*submitted*). Can native Japanese listeners learn to differentiate /r-l/ on the basis of F3 onset frequency?

Idemaru, K. Holt, L. L., & Seltman, H. (*submitted*). Comparing three methods to estimate perceptual cue weighting in speech categorization.

Holt, L. L. & Lotto, A. J. (*submitted*). Reevaluating the evidence for gestural perception of speech.

Stephens, J. D. W., & Holt, L. L. (*submitted*). A standard set of American-English voiced stop consonant stimuli from morphed natural speech.

Idemaru, K. Holt, L. L., & Seltman, H. (*accepted pending minor revisions*). Relative duration or absolute duration? Cue weighting in the perception and production of Japanese stops length distinction. *Journal of the Acoustical Society of America*.

Holt, L. L. & Lotto, A. J. (*in press*). Speech perception as categorization. *Attention, Perception & Psychophysics*.

Liu, R. & Holt, L. L. (*in press*). Changes in mismatch negativity reflecting the acquisition of complex, non-speech auditory categories. *Journal of Cognitive Neuroscience*.

Ming, V. & Holt, L. L. (2009). Efficient coding in human auditory perception. *Journal of the Acoustical Society of America*, 126, 1312-1320.

Huang, J. & Holt, L. L. (2009). General perceptual contributions to lexical tone normalization. *Journal of the Acoustical Society of America*, 125, 3983-3994.

Leech, R., Holt, L. L., Devlin, J. T., Dick, F. (2009). Expertise with artificial non-speech sounds recruits speech-sensitive cortical regions. *Journal of Neuroscience*, 29, 5234-5239.

Lotto, A. J., Hickok, G. S., & Holt, L. L. (2009). Reflections on mirror neurons and speech perception. *Trends in Cognitive Science*, 13, 110-114.

Hickok, G., Holt, L. L. & Lotto, A. J. (2009). Response to Wilson: What does motor cortex contribute to speech perception? *Trends in Cognitive Sciences*, 13, 330-331.

Mirman, D., McClelland, J. L., Holt, L. L., and Magnuson, J. S. (2008). Effects of attention on the strength of lexical influences on speech perception: Behavioral experiments and computational mechanisms. *Cognitive Science*, 32, 398-417.

Holt, L. L. & Lotto, A. J. (2008). Speech perception within an auditory cognitive science framework. *Current Directions in Psychological Science*, 17, 42-46.

Mirman, D., McClelland, J. L. & Holt, L. L. (2006). Interactive activation and Hebbian learning produce lexically guided tuning of speech perception. *Psychonomic Bulletin and Review*, 13, 958-965.

McClelland, J. L., Mirman, D., & Holt, L. L. (2006). Are there interactive processes in speech perception? *Trends in Cognitive Science*, 10, 363-369.

Mirman, D., McClelland, J. L., & Holt, L. L. (2006). Response to McQueen et al.: Theoretical and empirical arguments support interactive processing. *Trends in Cognitive Sciences*, 10, 534.

Lotto, A. J. & Holt, L. L. (2006). Putting phonetic context effects into context: A commentary on Fowler (2006). *Perception & Psychophysics*, 68, 178-183.

Holt, L. L. & Lotto, A. J. (2006). Cue weighting in auditory categorization: Implications for first and second language acquisition. *Journal of the Acoustical Society of America*, 119, 3059-3071.

Holt, L. L. (2006b). The mean matters: Effects of statistically-defined non-speech spectral distributions on speech categorization. *Journal of the Acoustical Society of America*, 120, 2801-2817.

Holt, L. L. (2006a). Speech categorization in context: joint effects of non-speech and speech precursors. *Journal of the Acoustical Society of America*, 119, 4016-4026.

Holt, L. L., Stephens, J. D. W., & Lotto, A. J. (2005). A critical evaluation of visually-moderated phonetic context effects. *Perception & Psychophysics*, 67, 1102-1112.

Wade, T. & Holt, L. L. (2005c). Perceptual effects of preceding non-speech rate on temporal properties of speech categories. *Perception & Psychophysics*, 67, 939-950.

Wade, T. & Holt, L. L. (2005b). Incidental categorization of spectrally complex non-invariant auditory stimuli in a computer game task. *Journal of the Acoustical Society of America*, 118, 2618-2633.

Wade, T. & Holt, L. L. (2005a). Effects of later-occurring non-linguistic sounds on speech categorization. *Journal of the Acoustical Society of America*, 118, 1701-1710.

Holt, L. L. (2005). Temporally non-adjacent non-linguistic sounds affect speech categorization. *Psychological Science*, 16, 305-312.

Mirman, D., McClelland, J. M. & Holt, L. L. (2005). Computational and behavioral investigations of lexically induced delays in phoneme recognition. *Journal of Memory and Language*, 52, 424-443.

- Holt, L. L., Lotto, A. J. & Diehl, R. L. (2004). Auditory discontinuities interact with categorization: Implications for speech perception. *Journal of the Acoustical Society of America*, 116, 1763-1773.
- Mirman, D., Holt, L. L., & McClelland, J. M. (2004). Categorization and discrimination of non-speech sounds: Differences between steady-state and rapidly-changing acoustic cues. *Journal of the Acoustical Society of America*, 116, 1198-1207.
- Pollak, S. D., Holt, L. L., & Wismer Fries, A. B. (2004). Hemispheric asymmetries in children's perception of human affective sounds. *Developmental Science*, 7, 10-18.
- Diehl, R. L., Lotto, A. J. & Holt, L. L. (2004). Speech perception. *Annual Review of Psychology*, 55, 149-179.
- Stephens, J. D. & Holt, L. L. (2003). Preceding phonetic context affects perception of non-speech. *Journal of the Acoustical Society of America*, 114, 3036-3039.
- Lotto, A. J., Sullivan, S. C., & Holt, L. L. (2003). Central locus for non-speech effects on phonetic identification. *Journal of the Acoustical Society of America*, 113, 53-56.
- Holt, L. L. & Lotto, A. J. (2002). Behavioral examinations of the neural mechanisms of speech context effects. *Hearing Research*, 167, 156-169.
- Holt, L. L., Lotto, A. J., & Kluender, K. R. (2001). Influence of fundamental frequency on stop-consonant voicing perception: A case of learned covariation or auditory enhancement? *Journal of the Acoustical Society of America*, 109, 764-774.
- Holt, L. L. & Kluender, K. R. (2000). General auditory processes contribute to perceptual accommodation of coarticulation. *Phonetica*, 57, 170-180.
- Holt, L. L., Lotto, A. J., & Kluender, K. R. (2000). Neighboring spectral content influences vowel identification. *Journal of the Acoustical Society of America*, 108, 710-722.
- Kluender, K. R., Lotto, A. J., Holt, L. L., & Bloedel, S. B. (1998). Role of experience in language-specific functional mappings for vowel sounds as inferred from human, nonhuman, and computational models. *Journal of the Acoustical Society of America*, 104, 3568-3582.
- Lotto, A. J., Kluender, K. R., & Holt, L. L. (1998). Depolarizing the perceptual magnet effect. *Journal of the Acoustical Society of America*, 103, 3648-3655.
- Lotto, A. J., Kluender, K. R., & Holt, L. L. (1997b). Effect of voice quality on perceived height of English vowels. *Phonetica*, 54, 76-93.
- Lotto, A. J., Kluender, K. R., & Holt, L. L. (1997a). Perceptual compensation for coarticulation by Japanese quail (*Coturnix coturnix japonica*). *Journal of the Acoustical Society of America*, 102, 1134-1140.

CHAPTERS & PROCEEDINGS PAPERS

- Lotto, A. J. & Holt, L. L. (invited submission). Auditory perception. Wiley Interdisciplinary Reviews: Cognitive Science.
- Holt, L. L. (in press). How perceptual and cognitive constraints affect learning of speech categories. Oxford Handbook of Laboratory Phonology. A. C. Cohn, C. Fougeron, & M. K. Huffman (Eds.).
- Holt, L. L. & Idemaru, K. (in press). Speech Perception. In Irving B. Weiner & W. Edward Craighead, Editors, *Corsini's Encyclopedia of Psychology*, Fourth Edition. Wiley.
- Holt, L. L. (in press). Psychophysics of Speech. In P. Hogan, Editor, *Cambridge Encyclopedia of the Language Sciences*.
- Holt, L. L. (2008). Speech Perception: Adult. In Larry R. Squire, Editor-In-Chief, *Encyclopedia of Neuroscience*, Vol. 9, Academic Press, Oxford, pp. 219-226.
- Idemaru, K. & Holt, L. L. (2007). Relational timing or absolute duration? Cue weighting in the perception of Japanese singleton-geminate stops. *International Congress of Phonetic Sciences 2007*.
- Mirman, D., McClelland, J. L., & Holt, L. L. (2006). Attentional modulation of lexical effects on speech perception: Computational and behavioral experiments. *Proceedings of the 28th Annual Conference of the Cognitive Science Society*.
- Kluender, K. R., Lotto, A. J., & Holt, L. L. (2005). Contributions of nonhuman animal models to understanding human speech perception. In S. Greenberg and W. Ainsworth (Eds.) *Listening to Speech: An Auditory Perspective*, Oxford University Press: New York, NY.
- Lacerda, F., Sundberg, U., Carlson, R. & Holt, L. L. (2004). Modeling interactive language learning: Project presentation. *Proceedings of FONETIK 2004*.
- Holt, L. L. & Wade, T. (2004). Non-linguistic sentence-length precursors affect speech perception: implications for speaker and rate normalization. *Proceedings of From Sound to Sense: Fifty+ Years of Discoveries in Speech Communication*.
- Lotto, A. J., & Holt, L. L. (2000). The illusion of the phoneme. In S. J. Billings, J. P. Boyle, & A. M. Griffith (Eds.), Chicago Linguistic Society, Volume 35: The Panels. Chicago: Chicago Linguistic Society, 191-204.
- Lotto, A.J., Kluender, K.R., & Holt, L.L. (2000). Effects of language experience on perceptual organization of vowel sounds. In M. Broe & J. Pierrehumbert (Eds.), Laboratory Phonology V: Language Acquisition and the Lexicon, pp. 219-228, Cambridge University Press: Cambridge.
- Holt, L. L., Lotto, A. J., & Kluender, K. R. (1998). Incorporating principles of general learning in theories of language acquisition. In M. Gruber, C. Derrick Higgins, K. S. Olson & T.

Wysocki (Eds.), Chicago Linguistic Society, Volume 34: The Panels. Chicago: Chicago Linguistic Society, 253-268.

Lotto, A. J., Kluender, K. R., & Holt, L. L. (1997). Animal models of speech perception phenomena. In K. Singer, R. Eggert, & G. Anderson (Eds.), Chicago Linguistic Society, Volume 33, 357-367, Chicago Linguistic Society: Chicago, IL.

Kluender, K. R., Lotto, A. J., & Holt, L. L. (1995). Effect of voice quality on the tense/lax distinction for English vowels. *Proceedings of the International Congress of Phonetic Sciences*, 4, 164-167.

CONFERENCE PRESENTATIONS & INVITED ADDRESSES

Wood, T., Leech, R., Apel, T., Holt, L. L. & Dick, F. Changes in fMRI activation after naturalistic training on ringtone stimuli. Society for Neuroscience 2009 Annual Meeting, Chicago, IL, October 2009.

Guediche, S. A., Holt, L. L. & Fiez, J. A. Examining the neural basis of adaptation in speech perception without feedback. Society for Neuroscience 2009 Annual Meeting, Chicago, IL, October 2009.

Idemaru, K. & Holt, L. L. Production and Perception of English /l/ and /r/ by Native-Speaking Children. 158th Meeting of the Acoustical Society of America, San Antonio, TX, October 2009.

Huang, J., Lotto, A. J., & Holt, L. L. Effect of a Spoken Passage's Long-term Average Spectrum on Subsequent Speech Categorization. 158th Meeting of the Acoustical Society of America, San Antonio, TX, October 2009.

Lim, S. & Holt, L. L. Sensitivity to the distributional structure of auditory categories. 158th Meeting of the Acoustical Society of America, San Antonio, TX, October 2009.

Laing, E., Holt, L. L., & Bagic, A. Investigation of the Neural Bases of Context-Dependent Speech Categorization. 158th Meeting of the Acoustical Society of America, San Antonio, TX, October 2009.

Guediche, S. A., Fiez, J. A., & Holt, L. L. Perceptual learning of distorted speech with and without feedback, The Annual Meeting of the Cognitive Science Society, Amsterdam, July 2009.

Lim, S. & Holt, L. L. Investigating non-native category learning using a video-game-based training paradigm. 157th Meeting of the Acoustical Society of America, Portland, OR, May 2009.

Idemaru, K. & Holt, L. L. Measuring sensitivity to short-term deviations in acoustic cue correlation. 157th Meeting of the Acoustical Society of America, Portland, OR, May 2009.

Holt, L. L. The adaptive plasticity of speech perception. 3rd Annual Meeting of the Auditory Cognitive Neuroscience Society, Tucson, AZ, January 2009.

Holt, L. L. Twitters, gerbils and invaders from space: Speech categorization within an auditory cognitive science framework. Winter Conference on Issues in Developmental Psychobiology. St. Croix, U.S.V.I, January 2009.

Liu, R. & Holt, L. L. Effects of short-term experience on auditory categorization: An event-related potential study. 38th Annual Meeting of the Society for Neuroscience. Washington, DC, November, 2008.

Lim, S. J. & Holt, L. L. Learning Non-Native Speech Categories with a Video Game. 49th Annual Meeting of the Psychonomic Society. Chicago, IL, November 2008.

Idemaru, K. & Holt, L. L. Re-tuning Speech Sound Categories: An Eyetracking Study. 156th Meeting of the Acoustical Society of America, Miami, FL, November, 2008.

Huang, J. & Holt, L. L. Investigating the Influence of Context Frequency on Lexical Tone Perception. 156th Meeting of the Acoustical Society of America, Miami, FL, November, 2008.

Taylor, E. Holt, L.L. and Bagic, A. A MEG study of the neural basis of context-dependent speech categorization. International Conference on Biomagnetism, BIOMAG 2008, Sapporo, Japan, August, 2008. [Young Investigator Award awarded to Ms. Taylor].

Hufnagle, D., Curtin, S., Holt, L. L. & Keisling, S. L. 6-Month Olds are More Sensitive to Variations in F1 than F2 in Vowels. Workshop on Linguistic Variation Across the Lifespan. Columbus, OH. May, 2008.

Leech, R., Holt, L., Devlin, J. & Dick, F. Changes in functional organization following naturalistic training on complex auditory categories, 15th Annual Cognitive Neuroscience Meeting, San Francisco, CA, April, 2008.

Hufnagle, D., Curtin, S., Holt, L. L. & Keisling, S. L. 6-Month Olds are More Sensitive to Variations in F1 than F2 in Vowels. The XVIth Conference on Infant Studies. Vancouver, Canada. March, 2008.

Holt, L. L. Speech, melodies and invaders from space: Speech perception within a general auditory cognitive science framework. Invited colloquium. Rutgers University Department of Psychology, March, 2008.

Holt, L. L. Speech, melodies and invaders from space: Speech perception within a general auditory cognitive science framework. Invited colloquium. Brown University Department of Cognitive and Linguistic Sciences, February, 2008.

Holt, L. L. Cue weighting in speech categorization. 2nd Annual Meeting of the Auditory Cognitive Science Society, Tucson, AZ, January, 2008.

Holt, L. L. Mirror neurons, myths and the motor theory of speech perception. 2nd Annual Meeting of the Auditory Cognitive Science Society, Tucson, AZ, January, 2008.

Holt, L. L. Determinants of auditory cue weighting and selective attention. 154th Meeting of the Acoustical Society of America, New Orleans, LA, November, 2007.

Ingvalson, E. M., McClelland, J. M., & Holt, L. L. Years of exposure to English predicts perception and production of /r/ and /l/ by native speakers of Japanese. 48th Annual Meeting of the Psychonomics Society, Long Beach, CA, November, 2007.

Idemaru, K. & Holt, L. L. Relational timing or absolute duration? Cue weighting in the perception of Japanese singleton-geminate stops. International Congress of Phonetic Sciences 2007, Saarbrücken, Germany, August, 2007.

Holt, L. L. Statistical perception: effects of acoustic regularity in online perception. Workshop on Current Issues in Language Acquisition: Artificial and Statistical Language Learning. Calgary, Alberta, June, 2007.

Holt, L. L. Speech ~~perception~~ cognition. Inaugural Meeting of the Auditory Cognitive Science Society, January, 2007.

Smith, E. and Holt, L. A theoretical model of cochlear processing improves simulated cochlear implant hearing. Computational and Systems Neuroscience, Salt Lake City, UT, 2006

Holt, L. L. Auditory categorization: What general learning can teach us about language development, Invited address to the New York Academy of Sciences, Learning to Hear: Animal, Computational, and Neuroimaging Studies of Language Development, October, 2006.

Holt, L. L. Speech as a window to the auditory system. Center for the Neural Basis of Cognition Retreat, October, 2006.

Holt, L. L. Decisions and interactivity in perceiving speech. Invited talk, Department of Social and Decision Sciences, Carnegie Mellon University, September 2006.

Holt, L. L. Cracking the speech code. Invited talk, James S. McDonnell Foundation 21st Century Science Initiative Program Meeting, Palisades, New York, June 2006.

Holt, L. L. Auditory categorization and tuning in speech perception. Center for Visual Sciences Symposium on Statistical Learning and Brain Plasticity, University of Rochester, Invited Speaker, June, 2006.

Stephens, J. D. W., & Holt, L. L. Experience-driven effects of visual cues in speech perception. 151st Meeting of the Acoustical Society of America, Providence, Rhode Island, June 2006.

Smith, E. C. & Holt, L. L. A theoretical model of cochlear processing improves spectrally degraded speech perception. 151st Meeting of the Acoustical Society of America, Providence, Rhode Island, June 2006.

Holt, L. L. The formation and tuning of auditory categories. Invited colloquium, University of Texas - Dallas, April, 2006.

Holt, L. L. Speech, melodies and invaders from space: The formation and tuning of auditory categories. Interdisciplinary approaches to psycholinguistics and neurolinguistic research:

Investigating speech perception and production, University of Southern California, February 2006.

Holt, L. L. Speech, melodies and invaders from space: The formation and tuning of auditory categories. Distinguished Speakers Series, Cornell University, November 2005.

Stephens, J.D.W., & Holt, L.L. Learned cross-modal integration of novel visual cues with auditory speech (poster). 46th Meeting of the Psychonomic Society, Toronto, ON, November 2005.

Ingvalson, E., Holt, L. L., & McClelland, J. L. Can F3 be used to teach Japanese adults /r/ and /l/? Cognitive Science Society, Stressa, Italy, August, 2005.

Holt, L. L. Formation and tuning of auditory and speech categories. Invited address McGill University, Montreal, Quebec, June 2005.

Hay, J., Holt, L. L., Lotto, A. J., & Diehl, R. L. How auditory discontinuities and linguistic experience affect the perception of speech and non-speech in English- and Spanish-speaking listeners. 149th Meeting of the Acoustical Society of America, Vancouver, BC, May 2005.

Holt, L. L. & Wade, T. Categorization of spectrally complex non-invariant auditory stimuli in a computer game task. 149th Meeting of the Acoustical Society of America, Vancouver, BC, May 2005.

Wade, T. & Holt, L. L. Perception of coarticulated speech with contrastively enhanced spectrotemporal patterns. 149th Meeting of the Acoustical Society of America, Vancouver, BC, May 2005.

Holt, L. L. & Wade, T. Incidental categorization of spectrally complex non-invariant auditory stimuli in a computer game task. Annual Meeting of the Cognitive Neuroscience Society, New York, NY, April 2005.

Stephens, J. D. W. & Holt, L. L. Experience-driven audio-visual integration in speech perception. Annual Meeting of the Cognitive Neuroscience Society, New York, NY, April 2005.

Wade, T. & Holt, L. L. Incidental complex auditory category learning in a computer game task. 28th Annual Midwinter Meeting of the Association for Research in Otolaryngology, New Orleans, LA, February, 2005.

Holt, L. L. & Lotto, A. J. Factors affecting perceptual weighting of acoustic cues in a categorization task. 28th Annual Midwinter Meeting of the Association for Research in Otolaryngology, New Orleans, LA, February, 2005.

Stephens, J. D. W., & Holt, L. L. Learning to integrate auditory and visual information in speech perception. 45th Annual Meeting of the Psychonomic Society, Minneapolis, MN, November, 2004.

Holt, L. L. & Lotto, A. J. Auditory categorization: cue weighting and dimension bias. 148th Meeting of the Acoustical Society of America, San Diego, CA, November, 2004.

Wade, T. & Holt, L. L. Contrastive backward effects of non-speech tones on speech perception. 148th Meeting of the Acoustical Society of America, San Diego, CA, November, 2004.

Holt, L. L. Name that tune: What speech categorization in context can tell us about auditory processing. Invited colloquium, Department of Physiology, University of Wisconsin-Madison, September 2004.

Holt, L. L. Auditory categorization: What general learning principles can tell us about speech categories. Invited colloquium, Kungliga Tekniska Högskolan (KTH, Swedish Royal Institute of Technology), Stockholm, Sweden, August, 2004.

Mirman, D., McClelland, J. M., & Holt, L. L. Attentional modulation of lexical effects in an interactive model of speech perception. 26th Annual Meeting of the Cognitive Science Society, Chicago, IL, August, 2004.

Holt, L. L. & Wade, T. Non-linguistic sentence-length precursors affect speech perception: Implications for speaker and rate normalization. From Sound to Sense: Fifty+ Years of Discoveries in Speech Communication, Massachusetts Institute of Technology, June 2004.

Wade, T. & Holt, L. L. Perceptual effects of preceding non-speech rate information on temporal properties of speech categories. 147th Meeting of the Acoustical Society of America, New York, NY, May 2004.

Holt, L. L. & Wade, T. Perception of correlations between acoustic cues in category tuning and speaker adaptation. 147th Meeting of the Acoustical Society of America, New York, NY, May 2004.

Holt, L. L. Context effects in speech perception. Invited colloquium, Massachusetts Institute of Technology, April 2004.

Holt, L. L. Context effects in speech perception. Invited colloquium, Lehigh University, April 2004.

Holt, L. L. and Lotto, A. J. Temporally non-adjacent acoustic histories shift identification of speech. Mid-Winter Meeting of the Association for Research in Otolaryngology, Daytona Beach, Florida, February 2004.

Holt, L. L. Context effects in speech perception: The long and the short of it. Invited colloquium, University of Stockholm, Department of Linguistics, February 2004.

Holt, L. L. What are the 'statistics' in statistical learning? 146th Meeting of the Acoustical Society of America, Austin, TX, November 2003.

Ingvalson, E. M., Holt, L. L. & McClelland, J. M. Generalization in Japanese /r/ - /l/ perception: Shining a light on the right cue. 44th Annual Meeting of the Psychonomic Society, Vancouver, BC, November 2003.

Holt, L. L. Context effects in speech perception: The long and the short of it. Colloquium addressed to the Department of Psychology at the University of Texas-Austin, September 2003.

Holt, L. L. The role of experience in speech perception. James S. McDonnell Foundation Meeting of the 21st Century Scientists, June 2003.

Holt, L. L., Lotto, A. J., & Diehl, R. L. Perceptual discontinuities and categorization: Implications for speech perception. 145th Meeting of the Acoustical Society of America, Nashville, TN, April, 2003.

McClelland, J. L., Mirman, D. & Holt, Lori L. Is there still a trace of TRACE? 145th Meeting of the Acoustical Society of America, Nashville, TN, April, 2003. (invited contribution)

Holt, L. L., Lotto, A. J., Diehl, R. L. Perceptual discontinuities and categorization: Implications for speech perception. 10th Annual Meeting of the Cognitive Neuroscience Society. NY, NY, March, 2003.

Stephens, J. D. & Holt, L. L. Are context effects in speech perception modulated by visual information? 43rd Annual Meeting of the Psychonomic Society, Kansas City, MO, November, 2002.

Lotto, A. J. & Holt, L. L. Speech perception as a paradigmatic case of auditory cognition. 1st Annual Auditory Perception, Cognition, and Action Meeting, Kansas City, MO, November, 2002.

Holt, L. L. Perceptual context effects in speech perception. 14th Annual National Academy of Sciences Beckman Frontiers of Science Symposium, Los Angeles, CA, November, 2002.

Holt, L. L. Speech perception as complex auditory categorization. 143rd Meeting of the Acoustical Society of America, Pittsburgh, PA, June, 2002.

Mirman, D., Holt, L. L., McClelland, J. L. Formation of categories for complex novel auditory stimuli. 143rd Meeting of the Acoustical Society of America, Pittsburgh, PA, June, 2002.

Stephens, J. D., & Holt, L. L. Effect of preceding speech on nonspeech sound perception. 143rd Meeting of the Acoustical Society of America, Pittsburgh, PA, June, 2002.

Lotto, A. J., & Holt, L. L. Respective roles of spectral and phonemic representations in phonetic context effects. 13th Annual Meeting of the American Psychological Society, Toronto, CA, June 2001.

Holt, L. L., & Lotto, A. J. Auditory context effects for nonequivalent sources. 141st Meeting of the Acoustical Society of America, Chicago, IL, June, 2001.

Lotto, A. J. & Holt, L. L. Experimental paradigm for examining the formation of complex auditory categories. 141st Meeting of the Acoustical Society of America, Chicago, IL, June, 2001.

Holt, L. L. Listening to the animals: What nonhumans can tell us about speech perception. Language Technologies Institute, Department of Computer Science, Carnegie Mellon University, April 2001.

Holt, L. L. & Lotto, A. J. Perceptual context effects in speech perception. Cognitive Neuroscience Society, New York, NY, March 2001.

Holt, L. L. Maintaining perceptual constancy in speech. Invited colloquium to the Department of Communication Sciences and Disorders, University of Pittsburgh, March 2001.

Holt, L. L., Ventura, V., Rhode, W. R., Behesta, S., & Rinaldo, A. Context-dependent neural coding in the chinchilla cochlear nucleus. 140th Meeting of the Acoustical Society of America, Newport Beach, CA, December, 2000.

Kluender, K. R., Lotto, A. J., & Holt, L. L. (2000). Contributions of general auditory processes to perceptual accommodation of coarticulation. Invited address, The Nature of Speech Perception, Universiteit Utrecht, July 2000.

Holt, L. L. & Rhode, W. S. Examining context-dependent speech perception in the chinchilla cochlear nucleus. 23rd Midwinter Meeting of the Association for Research in Otolaryngology, February 22, 2000.

Holt, L. L., Lotto, A. J., & Kluender, K. R. Influence of fundamental frequency on stop-consonant voicing perception: A case of learned covariation or auditory enhancement? 138th Meeting of the Acoustical Society of America, Columbus, OH, November 4, 1999.

Lotto, A. J., Holt, L. L., & Kluender, K. R. Structure of phonetic categories produced by general learning mechanisms, 138th Meeting of the Acoustical Society of America, Columbus, OH, November 4, 1999.

Kluender, K. R. & Holt, L. L. General auditory processes contribute to perceptual accommodation of coarticulation. Invited address to the Speech Communication and Language Development Symposium, Stockholm, Sweden, June 17, 1999.

Holt, L.L. & Lotto, A. J. Simultaneous detection and identification of vowels: A case of unconscious perception? 71st Meeting of the Midwestern Psychological Association, Chicago, IL, April 29, 1999.

Lotto, A. J. & Holt, L. L. The illusion of the phoneme. Special Phonetics Panel (ChiPhon) of 35th Conference of the Chicago Linguistic Society, University of Chicago, April 23, 1999.

Holt, L. L., Lotto, A. J., & Kluender, K. R. Spectral contrast in the perception of VCV syllables. 136th Meeting of the Acoustical Society of America, Norfolk, Virginia, October 13, 1998.

Holt, L. L. The ABCs of effects of experience on infant speech perception. Address to Department of Physiology, University of Wisconsin, October, 1998.

Holt, L. L. Statistical learning of phonetic patterns. Address to Chaos and Complex Systems Seminar, University of Wisconsin, September, 1998.

Holt, L. L. Of context and cochlear nuclei: Encoding spectral contrast. Address to the Department of Neurophysiology, University of Wisconsin, March, 1998.

Kluender, K. R., Lotto, A. J., & Holt, L. L. Contributions of general auditory processes to perceptual accommodation of coarticulation. Institute of Linguistics, Stockholm University, Stockholm, Sweden, March, 1998, Invited colloquium.

Holt, L. L. Animal models of speech-sound acquisition. Address to the Department of Psychology, University of Wisconsin, February, 1998.

Holt, L. L., Kluender, K. R., & Lotto, A. J. Discrimination of single-formant stimuli by chinchillas (*Chinchilla villidera*). 134th Meeting of the Acoustical Society of America, San Diego, California, December, 1997.

Lotto, A. J., Holt, L. L., & Kluender, K. R. Perceptual magnet effect as categorical perception. 134th Meeting of the Acoustical Society of America, San Diego, California, December, 1997.

Holt, L. L. Context dependencies in perception. Invited address to the Department of Mechanical Engineering, University of Wisconsin, Robotics Research Seminar, June, 1997.

Lotto, A. J., Kluender, K. R., & Holt, L. L. Animal models of speech perception phenomena. Chicago Linguistics Society, Chicago, Illinois, April, 1997.

Holt, L. L. Does perceptual contrast neutralize coarticulatory assimilation? Address to the Department of Neurophysiology, University of Wisconsin, April, 1997.

Lotto, A. J., Kluender, K. R., & Holt, L. L. Context effects in speech perception by Japanese quail (*Coturnix japonica*). 20th Midwinter Meeting of the Association for Research in Otolaryngology (ARO), St. Petersburg Beach, Florida, February, 1997.

Lotto, A. J., Holt, L. L., & Kluender, K. R. General auditory processes may accommodate kinematic consequences of speech coarticulation. European Speech Communication Association Research Workshop on "The Auditory Basis of Speech Perception", Keele University, United Kingdom, July, 1996.

Kluender, K. R., Lotto, A. J., & Holt, L. L. Effects of language experience in perceptual organization for vowel sounds as inferred from human, nonhuman, and computational models. European Speech Communication Association Research Workshop on "The Auditory Basis of Speech Perception", Keele University, United Kingdom, July, 1996.

Lotto, A. J., Kluender, K. R., & Holt, L. L. Effects of language experience on perceptual organization of vowel sounds. Fifth Conference on Laboratory Phonology, Evanston, Illinois, July, 1996.

Lotto, A. J., & Holt, L. L. Auditory illusions and parlor tricks. Address to Department of Neurophysiology, University of Wisconsin, June, 1996.

Holt, L. L., Lotto, A. J., & Kluender, K. R. Perceptual compensation for vowel undershoot may be explained by general perceptual principles. 131st Meeting of the Acoustical Society of America, Indianapolis, Indiana, May, 1996.

Holt, L. L. Breathy female voice quality: Desirability or intelligibility? Address to Department of Psychology, University of Wisconsin, March, 1996.

Lotto, A. J., Kluender, K. R., & Holt, L. L. Animal and computational models of development of graded vowel categories. 130th Meeting of the Acoustical Society of America, St. Louis, Missouri, November, 1995.

Kluender, K. R., Lotto, A. J., & Holt, L. L. Effect of voice quality on the tense/lax distinction for English vowels. XIIIth International Congress of Phonetic Sciences, Stockholm, Sweden, August, 1995, invited address.

Lotto, A. J., Kluender, K. R., & Holt, L. L. Spectral discontinuities and the vowel length effect. 128th Meeting of the Acoustical Society of America, Austin, Texas, November, 1994.

Holt, L. L., Lotto, A. J., & Kluender, K. R. Effect of voice quality on the tense/lax distinction for English vowels. 128th Meeting of the Acoustical Society of America, Austin, Texas, November, 1994.

TEACHING

Spring 2007; Fall 2009	Music & Mind: The Cognitive Neuroscience of Sound
Spring 2004-2006; 2009-2010	Cognitive Research Methods
Spring 2001-2003	The Discovery of Spoken Language
Fall 1999-2006	Biological Foundations of Behavior

MENTORING / STUDENT SUPERVISION

Undergraduate Research Mentor

More than 25 students supervised in independent research

Dissertation Committee Chair

Dan Mirman (co-advisor with Jay McClelland)

Ph.D. August 2005

Joseph (Beau) D. W. Stephens

Ph.D. August 2006

Erin Ingvalson (co-advisor with Jay McClelland)

Ph.D. August 2008

Jingyuan Huang

Ph.D. Student, Estimated defense date, August 2011

Erika Taylor

Ph.D. Student, Estimated defense date, August 2012

Sung-joo Lim
Ph.D. Student, Estimated defense date, August 2012
Ran Liu
Ph.D. Student, Estimated defense date, August 2014

Dissertation Committee Member

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Ph.D. 2006
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Brent Vander Wyk
Ph.D. 2007
Carnegie Mellon University, Psychology
Christine Watson
Ph.D. 2009
Carnegie Mellon University, Psychology
Sara Guediche
Ph.D. 2009
University of Pittsburgh, Neuroscience
Chris Paynter
Estimated defense date, August 2010
Carnegie Mellon University, Psychology
Alyx Kronstein
Estimated defense date, August 2013
Carnegie Mellon University, Psychology

Outside Examiner

Maria Kondourova (Dr. Alex Francis, Dissertation Committee Chair)
2008, Purdue University
Audny Dypvik (Dr. Suzanne Curtin, Dissertation Committee Chair)
2007, University of Calgary
Michelle Farmerie (Dr. Bill Langbauer, Dissertation Committee Chair)
2008, George Washington University

Post-doctoral Supervisor

Dr. Travis Wade
Institute for Natural Language Processing at the University of Stuttgart
Dr. Kaori Idemaru
Assistant Professor, University of Oregon
Dr. Daniel Hufnagle, 2008-present

INSTITUTIONAL SERVICE

Department of Psychology

Cognitive Area Faculty Search Committee, 2003, 2004, 2006, 2008
Social Area Faculty Search Committee 2005
Graduate Admissions/Visit Coordinator, 2000-2006
Undergraduate Research Award Committee, 2000-2002
Graduate Education Committee, 2004-present

Center for the Neural Basis of Cognition

Executive Committee, 2000-present

Education Committee, 2000-present

Co-Director Search Committee, 2006-2009

Carnegie Mellon University

University Nontenure Promotion Committee 2009-present

Animal Care and Use Committee, 2000-present

New Faculty Orientation, 2000-2004