

Erol James Ozmeral

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SUMMARY

Dr. Ozmeral is a cognitive neuroscientist with expertise in psychoacoustics and electrophysiology. He has primarily led research on the behavioral and neural mechanisms associated with sensorineural hearing loss across the adult lifespan. His research interests are in cognitive aging, speech perception, spatial attention, and emerging technologies in hearing instruments, including brain-computer interfaces.

EDUCATION

12/2013 Ph.D., Cognitive Psychology, University of North Carolina at Chapel Hill
05/2011 M.A., Cognitive Psychology, University of North Carolina at Chapel Hill
05/2007 M.A., Cognitive and Neural Systems, Boston University
09/2004 B.S., Biomedical Engineering, Boston University

PROFESSIONAL EXPERIENCE

12/2017- Research Assistant Professor, Dept. of Communication Sciences and Disorders
University of South Florida

12/2013-12/2017 Postdoctoral Fellow, Dept. of Communication Sciences and Disorders
University of South Florida

08/2008-12/2013 Graduate Research Assistant, Dept. of Otolaryngology/Head and Neck Surgery
University of North Carolina at Chapel Hill

05/2007-08/2008 Research Specialist, Dept. of Cognitive and Neural Systems
Boston University

09/2004-05/2007 Graduate Research Assistant, Dept. Cognitive and Neural Systems
Boston University

09/2003-09/2004 Undergraduate Research Assistant, Dept. of Biomedical Engineering
Boston University

RECOGNITION AND PROFESSIONAL ACTIVITIES

Awards, Honors

NSF Junior Investigator Travel Grant, "Listening into 2030" Workshop, Berkeley, CA, 2016

Travel Award, Aging and Speech Communications Conference, 2015

Travel Award, Association for Research in Otolaryngology Mid-Winter Meeting, 2015

NIH NIDCD F32, Ruth L. Kirschstein National Research Service Award (DC013724), 2013-2016

NIH NIDCD F31, Ruth L. Kirschstein National Research Service Award (DC012694), 2012-2013

Graduate Tuition Incentive Scholarship, University of North Carolina at Chapel Hill, 2012-2013

Professional Societies

The Acoustical Society of America (2015 – present)

The American Association for the Advancement of Science (2014 – present)

National Postdoctoral Association (2014 – present)

President, USF Chapter, 2014 – 2015

The Association for Research in Otolaryngology (2006 – present)

Steering committee member, The Student-Postdoc Chapter (spARO), 2011 – 2013

Review of Manuscripts

Attention Perception & Psychophysics, Auditory Perception & Cognition, Ear and Hearing, Journal of the Acoustical Society of America, Journal of Communication Disorders, Journal of Neurophysiology, Journal of Speech Language and Hearing Research, Hearing Research

PUBLICATIONS

Peer-Reviewed Articles

1. Ozmeral, E.J., Eddins, A.C., & Eddins, D.A. (**accepted**). How do age and hearing loss impact spectral envelope perception? *Journal of Speech, Language, and Hearing Research*.
2. Eddins, A.C., Ozmeral, E.J., & Eddins, D.A. (**in press**). How aging impacts encoding of binaural cues and the perception of auditory space. *Hearing Research*.
3. Carlile, S., Ciccarelli, G., Cockburn, J., Diedesch, A., Finnegan, M., Hafter, E., Henin, S., Kalluri, S., Kell, A., Ozmeral, E.J., Roark, C., & Sagers, J. (**2017**). Listening into 2030 workshop: An experiment in envisioning the future of hearing and communication science. *Trends in Hearing*. 21, 1-11.
4. Ozmeral, E.J., Eddins, D.A., & Eddins, A.C. (**2016**). Reduced temporal processing in older, normal-hearing listeners evident from electrophysiological responses to shifts in interaural time difference. *Journal of Neurophysiology*. 116, 2720-2729.
5. Ozmeral, E.J., Eddins, A.C., Frisina Sr., D.R., & Eddins, D.A. (**2016**). Large cross-sectional study of presbycusis reveals rapid progressive decline in auditory temporal acuity. *Neurobiology of Aging*, 43, 72-78.
6. Ozmeral, E.J., Buss, E., & Hall III, J.W. (**2016**). The effects of sensorineural hearing impairment on asynchronous glimpsing of speech. *PLoS ONE* 11(5):e0154920.

7. Hall III, J.W., Buss, E., Ozmeral, E.J., & Grose, J.H. (2016). The effect of noise fluctuation and spectral bandwidth on gap detection. *Journal of the Acoustical Society of America*, 139(4), 1601-1610.
8. Ozmeral, E.J., Buss, E., & Hall III, J.W. (2012). Asynchronous glimpsing of speech: Spread of masking and task set-size, *Journal of the Acoustical Society of America*, 132(2), 1152-1165.
9. Varghese, L., Ozmeral, E.J., Best, V., & Shinn-Cunningham, B.G. (2012). How visual cues for when to listen aid selective auditory attention, *Journal of the Association for Research in Otolaryngology*, 13(3), 359-368.
10. Best, V., Shinn-Cunningham, B.G., Ozmeral, E.J., & Kopčo, N. (2010). Exploring the benefit of auditory spatial continuity, *Journal of the Acoustical Society of America*, 127(6), EL258-EL264.
11. Dent, M., McClaine, E., Best, V., Ozmeral, E.J., Narayan, R., Sen, K., & Shinn-Cunningham, B.G. (2009). Spatial unmasking of birdsong in Zebra Finches (*Taeniopygia guttata*) and Budgerigars (*Melopsittacus undulatus*), *Journal of Comparative Psychology*, 123(4), 357-367.
12. Best, V., Ozmeral, E.J., Kopčo, N., & Shinn-Cunningham, B.G. (2008). Object continuity enhances selective auditory attention, *Proceedings of the National Academy of Sciences*, 105(35), 13174-13178.
13. Narayan, R., Best, V., Ozmeral, E., McClaine, E., Dent, M., Shinn-Cunningham, B.G., & Sen, K. (2007). Cortical interference effects in the cocktail party problem, *Nature Neuroscience*, 10(12), 1601-1607 (with supplementary material).
14. Best, V., Ozmeral, E.J., & Shinn-Cunningham, B.G. (2007). Visually guided attention enhances target identification in a complex auditory scene, *Journal of the Association for Research in Otolaryngology*, 8(2), 294-304.
15. Best, V., Ozmeral, E., Gallun, F., Sen, K., & Shinn-Cunningham, B.G. (2005). Spatial unmasking of birdsong in human listeners: Energetic and informational factors. *Journal of the Acoustical Society of America*, 118(6), 3766-3773.

Refereed Conference Papers

16. Shinn-Cunningham, B.G., Best, V., Dent, M.L., Gallun, F.J., McClaine, E., Narayan, R., Ozmeral, E.J., & Sen, K. (2006). "Behavioral and neural identification of birdsong under several masking conditions," *Proceedings of the International Symposium on Hearing*, Cloppenberg, Germany, 164-170.

Book Chapters

17. Shinn-Cunningham, B.G., Best, V., Dent, M.L., Gallun, F.J., McClaine, E., Narayan, R., Ozmeral, E.J., & Sen, K. (2006). "Behavioral and neural identification of birdsong under several masking conditions," In *Hearing—From Sensory Processing to Perception*, B. Kollmeier, G. Klump, V. Hohmann, U. Langemann, M. Mauermann, S. Uppenkamp, & J. Verhey (eds.). Berlin: Springer Verlag, pp. 207-214.

Patents

18. Ozmeral, E.J. and Ozmeral, A.C. Voice tallying system for conducting a meeting among multiple participants. Flagler LLC, assignee. Patent WO2016022588-A1. **11 Feb. 2016**. Geneva, Switzerland: International Bureau of WIPO.

Conference Abstracts

19. Hayes, D., Ozmeral, E.J., & Eddins, D.A. (**August, 2018**). "Benchmarking detection and classification in automatic hearing aids. International Hearing Aid Conference (IHCON). Lake Tahoe, CA. *Podium*.
20. Ozmeral, E.J. & Eddins, D.A. (**July, 2018**). "Assessing adaptive directional hearing-aid systems using a novel speech-in-noise task and high-rate momentary data logging from premium aids." Gordon Research Conference – Auditory System. Smithfield, RI. *Poster*.
21. Eddins, A.C., Ozmeral, E.J., & Eddins, D.A. (**November, 2017**). "Characterizing declines in spatial hearing with age using behavioral and neurophysiological measures." Aging and Speech Communications Conference, Tampa, FL. *Podium*.
22. Ozmeral, E.J., Berg, M., Eddins, D.A., & Eddins, A.C. (**June, 2017**). "Age-related cortical changes in spatial auditory attention." Acoustical Society of America Meeting, Boston, FL. *Podium*.
23. Ozmeral, E., Berg, M., Eddins, D., & Eddins A.C. (**March, 2017**). "Aging alters attentional modulation of spatial processing in auditory cortex." American Auditory Society Meeting, Scottsdale, AZ. *Poster*.
24. Ozmeral, E.J., Eddins, D.A., & Eddins, A.C. (**November, 2016**). "Human electrophysiology of endogenous auditory spatial attention." Acoustical Society of America Meeting, Honolulu, HI. *Poster*.
25. Hoover, E.C., Ozmeral, E.J., Gabbidon, P.A., & Eddins, D.A. (**August, 2016**). "A novel approach to behavioral assessment in dynamic acoustic environments." International Hearing Aid Research Conference, Lake Tahoe, CA. *Poster*.
26. Ozmeral, E.J., Eddins, D.A., & Eddins, A.C. (**November, 2015**). "Age-related differences in auditory cortical representations of spatial cues." Acoustical Society of America Meeting, Jacksonville, FL. *Poster*.
27. Ozmeral, E.J., Eddins, D.A., & Eddins, A.C. (**October, 2015**). "Cortical dynamics associated with spatial coding change with age." Aging and Speech Communications Conference, Bloomington, IN. *Poster*.
28. Durkin, A.M., Ozmeral, E.J., & Eddins, A.C. (**September 2015**). "Effects of age on the hemispheric distribution of interaural time difference (ITD) processing. North Carolina Speech, Hearing, and Language Association 2015 Fall Conference, Wilmington, NC. *Poster*.
29. Ozmeral, E.J., Eddins, D.A., & Eddins, A.C. (**April, 2015**). "The effect of age on the opponent-channel model of ITD processing." Acoustical Society of America Florida Chapter Meeting, Gainesville, FL. *Podium*.
30. Ozmeral, E.J., Eddins, D.A., & Eddins, A.C. (**February, 2015**). "Are age-related changes in ITD coding due to changes in the binaural opponent-channel mechanism associated with down-regulation of

neural inhibition?" Association for Research in Otolaryngology Mid-Winter Meeting, Baltimore, MD. *Podium.*

31. Eddins, A.C., Ozmeral, E.J., & Eddins, D.A. (**October, 2014**). "Age-related declines in hemispheric asymmetry as revealed in the binaural interaction component." Acoustical Society of America Meeting, Indianapolis, IN. *Podium.*
32. Eddins, D.A., Ozmeral, E.J., & Eddins, A.C. (**October, 2014**). "Aging as a window into central auditory dysfunction: Combining behavioral and electrophysiological approaches." Acoustical Society of America Meeting, Indianapolis, IN. *Podium.*
33. Ozmeral, E.J., Buss, E., & Hall III, J.W. (**February, 2013**). "Asynchronous glimpsing of speech in natural and simulated hearing loss." Association for Research in Otolaryngology Mid-Winter Meeting, Baltimore, MD. *Poster.*
34. Ozmeral, E.J., Buss, E., & Hall III, J.W. (**July, 2012**). "Asynchronous glimpsing of speech in normal and hearing-impaired listeners." Auditory System – Gordon Research Conference, Lewiston, ME. *Podium.*
35. Hall III, J.W, Buss, E., Ozmeral, E. & Grose, J. (**February, 2012**). "Gap detection and noise fluctuation in normal and impaired hearing." Association for Research in Otolaryngology Mid-Winter Meeting, San Diego, CA. *Poster.*
36. Ozmeral, E.J., Buss, E. & Hall III, J.W. (**February, 2011**). "The role of upward spread of masking in the ability to benefit from asynchronous glimpsing of masked speech." Association for Research in Otolaryngology Mid-Winter Meeting, Baltimore, MD. *Poster.*
37. Ozmeral, E.J., Best, V., McGuffin, C., Hurd, B., Kopco, N. & Shinn-Cunningham, B.G. (**February, 2009**). "Exploring how auditory spatial continuity enhances speech perception." Association for Research in Otolaryngology Mid-Winter Meeting, Baltimore, MD. *Poster.*
38. Varghese, L., Ozmeral, E.J. & Shinn-Cunningham, B.G. (**February, 2009**). "Visual cues for when to listen improve signal identification most when target and masker are perceptually confusable." Association for Research in Otolaryngology Mid-Winter Meeting, Baltimore, MD. *Poster.*
39. Ozmeral, E., Best, V., McCoin, J. & Shinn-Cunningham, B.G. (**July, 2008**). "Across-ear grouping of speech bands in quiet and in the presence of interference." Acoustical Society of America Conference, Acoustics '08, Paris, France. *Poster.*
40. Ozmeral, E., Best, V., Kopco, N., Mason, C., Kidd, Jr., G. & Shinn-Cunningham, B.G. (**February, 2008**). "Dynamic aspects of auditory spatial attention." Association for Research in Otolaryngology Mid-Winter Meeting, Phoenix, AZ. *Poster.*
41. Ozmeral, E., Best, V. & Shinn-Cunningham, B.G. (**July, 2007**). "Target identification aided by simple visual cues in a complex auditory scene." Annual International Multisensory Research Forum, Sydney, Australia. *Poster.*

42. Dent, M.L., McClaine, E.M., Shinn-Cunningham, B.G., Best, V., Ozmeral, E., Narayan, R., Gallun, E. & Sen, K. (**February, 2007**). "Spatial unmasking of birdsong by budgerigars and zebra finches." Association for Research in Otolaryngology Mid-Winter Meeting, Denver, CO. *Poster*.
43. Ozmeral, E., Zutshi, P., Best, V. & Shinn-Cunningham, B.G. (**November, 2006**). "Spectrotemporal structure influences spatial release from informational masking in reverberant settings." Acoustical Society of America Conference, Honolulu, HI. *Poster*.
44. Dent, M.L., McClaine, E.M., Shinn-Cunningham, B.G., Best, V., Ozmeral, E., Gallun, E., Sen, K. & Narayan, R. (**November, 2006**). "An avian cocktail party: Masking and unmasking in birds." Acoustical Society of America Conference, Honolulu, HI. *Poster*.
45. Ozmeral, E., Best, V. & Shinn-Cunningham, B.G. (**February, 2006**). "Simple visual cues enhance the identification of target sounds in complex auditory scenes." Association for Research in Otolaryngology Mid-Winter Meeting, Baltimore, MD. *Podium*.
46. Ozmeral, E., Best, V. & Shinn-Cunningham, B.G. (**January, 2006**). "Enhanced target identification in a complex auditory scene via visual cueing." Australian Neuroscience Society Annual Meeting, Sydney, Australia. *Podium*.
47. Narayan, R., Best, V., Ozmeral, E., Shinn-Cunningham, B.G., & Sen, K. (**November, 2005**). "Neural discrimination of complex stimuli in the presence of masking sounds." Society for Neuroscience Annual Meeting, Washington, DC. *Poster*.
48. Ozmeral, E., Best, V., Gallun, F., Sen, K. & Shinn-Cunningham, B.G. (**February, 2005**). "Identifying a Bird in a Chorus: How Target and Masker Statistics Influence Spatial Unmasking." Association for Research in Otolaryngology Mid-Winter Meeting, New Orleans, LA. *Poster*.

FUNDING

Current research support

P01AG009524-20	Frisina (PI)	02/10/17 – 03/14/21
NIH/NIA		

Aging Auditory System: Presbycusis & its Neural Bases

Multidisciplinary determination and characterization of the perceptual, neural and molecular bases of age-related hearing loss in humans and animal models. The foci of Project 1 are on discovery of the nature and magnitude of age-related changes in (1) central auditory plasticity and the ability to use residual plasticity to ameliorate symptoms of hearing loss and (2) spatial-temporal processing.

Role: Post-doctoral research fellow

Sonova, Inc. (Industry)	Eddins (PI)	04/15/17 – 04/14/19
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Analysis and Development Supporting New Generations of Binaural Hearing Systems

This project involves evaluation of signal processing algorithms in a hierarchy of complex listening environments that are designed to challenge the environmental classification and binaural hearing systems in current state-of-the art hearing instruments.

Role: Post-doctoral research fellow

<i>Date</i>	<i>Course Name</i>	<i>Course Instructor</i>	<i>Institution, Department</i>
03/08/2016	SPA 7332: Adv Electrophys	Ann C. Eddins	USF, Comm. Sciences and Disorders
07/26/2017	SPA 7931: Adv Aud Research	David A. Eddins	USF, Comm. Sciences and Disorders

Mentoring

<i>Year(s) Active</i>	<i>Role</i>	<i>Student</i>	<i>Institution, Project Type</i>
2018 – present	Committee	Sittiprapa Isarangura	USF, PhD
2016 – present	Committee	Samuel Bernhisel	USF, Audiology Doctoral (AuD) Project
2016 – present	Committee	Chelsea Montgomery	USF, Audiology Doctoral (AuD) Project
2015 – 2017	Committee	Kelsey Harris	USF, Audiology Doctoral (AuD) Project
2014 – 2016	Committee	Alicia Durkin	USF, Audiology Doctoral (AuD) Project
2014 – 2016	Committee	Miller McInnis	USF, Audiology Doctoral (AuD) Project
2014 – 2016	Committee	Ioanna Tagarelli	USF, Audiology Doctoral (AuD) Project
2008 – 2009	Support	Brenden Hurd	BU, BME Senior Design Project
2008 – 2009	Support	Chloe McGuffin	BU Academy, Senior Capstone Project
2006 – 2007	Support	Priyanka Zutshi	BU, BME Senior Design Project