Daniel Guest

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PhD student in psychology studying: pitch perception in normal and hearing-impaired listeners; computational models of the auditory system and auditory perception; computational visual neuroscience and visual fMRI

Education

University of Minnesota — Minneapolis, MN
Ph.D. Psychology (student) — *2017 – present*

The University of Texas at Dallas — Richardson, TX
B.S. Psychology — *2013 – 2017*

Research Experience

University of Minnesota — Minneapolis, MN
Auditory Perception and Cognition Lab (Andrew Oxenham) — *2017 – present*
Computational Visual Neuroscience Lab (Kendrick Kay) — *2017 – present*

The University of Texas at Dallas — Richardson, TX
Speech Perception Lab (Peter Assmann) — *2015 – 2017*

Awards, Scholarships, and Honors

National Institutes of Health, National Institute on Deafness and Other Communication Disorders
F31 Ruth L. Kirschstein Predoctoral Individual National Research Service Award — *2020 – present*

University of Minnesota, Center for Applied and Translational Sensory Science
NSF-NRT Graduate Training Program in Sensory Science Fellowship — *2018 – 2020*

University of Minnesota, College of Liberal Arts
College of Liberal Arts Graduate Fellowship — *2017 – present*

National Science Foundation
Graduate Research Fellowship Program Honorable Mention — *2018*

University of Minnesota, Department of Psychology
Graduate Summer Research Fellowship — *2018*

The University of Texas at Dallas
Summa Cum Laude — *2017*
Academic Excellence National Merit Scholarship — *2013 – 2017*
Dean's List — *2013 – 2017*
Undergraduate Research Scholar Award — *2015, 2016*

The University of Texas at Dallas, School of Behavioral and Brain Sciences
Behavioral and Brain Sciences Honors — *2017*
Student Leadership Award — *2017*
Dean's Award for Excellence — *2017*
Santrock Travel Award — *2015*
Buhrmester Summer Research Award — *2015*

Professional Experience

Eriksholm Research Center, Oticon — Helsingør, Denmark
Summer intern in Augmented Hearing, advised by Lars Bramsløw — *2019*
Topic of study: Low-latency speech segregation by deep neural networks

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Publications

Guest, D. R., & Oxenham, A. J. (2019d). The role of pitch and harmonic cancellation when listening to speech in harmonic background sounds. *The Journal of the Acoustical Society of America*, *145*(5), 3011–3023. https://doi.org/10.1121/1.5102169

Talks

Guest, D. R., & Oxenham, A. J. (2019b). Pitch perception of concurrent high-frequency complex tones [Invited talk presented at ASA 2019 Louisville]. *The Journal of the Acoustical Society of America*, *145*(3), 1782–1782. https://doi.org/10.1121/1.5101520

Posters

Guest, D. R., & Oxenham, A. J. (2020b). Perception of melody and triad discrimination with high-frequency complex tones [Poster presented at ASA 2020 (virtual)]. *The Journal of the Acoustical Society of America*, *148*. https://doi.org/10.1121/1.5146799

Guest, D. R., & Oxenham, A. J. (2020a). Modeling pitch perception of concurrent high-frequency complex tones with auditory nerve simulations [Poster presented at ARO 2020]

Guest, D. R., & Oxenham, A. J. (2019c). Pitch perception of concurrent high-frequency complex tones: Modeling behavior with auditory nerve simulations [Poster presented at ISAAR 2019]

Guest, D. R., & Oxenham, A. J. (2019a). Pitch perception of concurrent high-frequency complex tones [Poster presented at ARO 2019]

Guest, D. R., & Oxenham, A. J. (2018b). The role of pitch and harmonic cancellation when listening to speech in background sounds [Poster presented at ASA 2018 Victoria]. *The Journal of the Acoustical Society of America*, *144*. https://doi.org/10.1121/1.5068208

Kapolowicz, M. R.**, Guest, D. R.**, Montazeri, V., Baese-Berk, M. M., & Assmann, P. F. (2018). Perception of spectrally-shifted non-native speech [Poster presented at ASA 2018 Victoria]. *The Journal of the Acoustical Society of America*, *144*, 1866. https://doi.org/10.1121/1.5068208

Guest, D. R., & Oxenham, A. J. (2018a). The role of pitch and harmonic cancellation in simultaneous speech segregation [Poster presented at 2018 UMN Center for Cognitive Science Spring Research Day]

Kapolowicz, M. K.**, Guest, D. R.**, Montazeri, V., & Assmann, P. F. (2017). Effect of frequency shifts on talker recognition in native and foreign-accented speech [Poster presented at ASA 2017 New Orleans]. *The Journal of the Acoustical Society of America*. https://doi.org/10.1121/1.5014953

Guest, D. R., Montazeri, V., Kapolowicz, M. R., & Assmann, P. F. (2017). Perception of voice gender in children's voices by cochlear implant users [Poster presented at ASA 2017 Boston]. *Journal of the Acoustical Society of America*, *141*(5), 3839. https://doi.org/10.1121/1.4988543

Guest, D. R. (2017). Perception of voice gender in children's voices by cochlear implant users [Poster presented at 6th UT Dallas Annual Exhibition of Excellence in Undergraduate Research]

Guest, D. R., Kapolowicz, M. R., Hossain, S., Montazeri, V., & Assmann, P. F. (2016). Perception of voice gender in cochlear implant simulations of children's speech [Poster presented at ASA 2016 Salt Lake City]. *Journal of the Acoustical Society of America*, *139*(4), 2124. https://doi.org/10.1121/1.4950328

Guest, D. R. (2016). Perception of voice gender in cochlear implant simulations of children's speech [Poster presented at the 5th UT Dallas Annual Exhibition of Excellence in Undergraduate Research]

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Academic and Professional Memberships

Acoustical Society of America
Student Council Representative, Psychological and Physiological Acoustics *2018 – 2020*
Student Member *2017 – present*
Association for Research in Otolaryngology
Student Member *2018 – present*
Vision Sciences Society
Student Member *2019 – present*

Relevant Coursework

Graduate GPA: 4.00, graduate courses in black

Engineering: Biomedical Digital Signal Processing, Introduction to Electrical Engineering, Mechanics
Neuroscience: Behavioral Neuroscience, Cognitive Neuroscience
Speech, language, and hearing: Anatomy and Physiology of Speech and Hearing, Communication Sciences, Communication Disorders, Linguistics, Normal Language Development, Pathophysiology of Hearing Disorders, Phonetics
Statistics and mathematics: Applied Regression Analysis, Calculus I, Calculus II, Differential Equations, Linear Algebra, Multivariable Calculus, Introduction to Neural Networks, Research Design and Analysis, Theoretical Concepts of Calculus, Theory of Statistics I, Theory of Statistics II
Psychology: Abnormal Psychology, Child Development, Computational Vision, Experimental Projects, Functional Imaging: Training, Historical Perspectives of Psychology, Human Experience of Sensory Loss, Proseminar in Perception, Psychology of Music, Social Psychology

Skills and Technical Experience

Computer skills: bash, git, LaTeX, Linux
Languages: English (native), Spanish, Portuguese
Mathematics: Differential equations, linear algebra, multivariable calculus, real analysis
Programming languages (tools): MATLAB, Python (Keras, Tensorflow), R (ggplot, lme4, KnitR)
Statistics: Bayesian statistics, generalized linear regression models, multilevel/hierarchical models, neural networks and generative models, probability theory

References

Andrew Oxenham
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Kendrick Kay
Assistant Professor, Center for Magnetic Resonance Research, University of Minnesota
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Professor, Department of Speech-Language Hearing Sciences, University of Minnesota
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Peter Assmann
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