Daniel Guest

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Education

2017 – 2022	**Ph.D., University of Minnesota**, Psychology
2013 – 2017	**B.S., The University of Texas at Dallas**, Psychology

Research and professional experience

University of Rochester

2022 – …	Postdoctoral associate, 🔗 Auditory Neuroscience Lab (Laurel Carney)

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2019	Research intern, Augmented Hearing, 🔗 Eriksholm Research Center

University of Minnesota

2017 – 2022	Graduate student, 🔗 Auditory Perception and Cognition Lab (Andrew Oxenham)
2018 – 2022	Graduate student, 🔗 Computational Visual Neuroscience Lab (Kendrick Kay)

The University of Texas at Dallas

2015 – 2017	Undergraduate research assistant, 🔗 Speech Perception Lab (Peter Assmann)

Awards

National Institutes of Health

2024 – 2027	F32 NRSA Postdoctoral Fellowship (NIDCD) Title: *Modeling the effects of binaural midbrain coding and efferent gain control on the perception of complex sounds*
2020 – 2022	F31 NRSA Predoctoral Fellowship (NIDCD) Title: *Processing of complex sounds at high frequencies*

University of Minnesota

2017 – 2022	College of Liberal Arts Graduate Fellowship
2018 – 2020	NSF-NRT Graduate Training Program in Sensory Science Fellowship
2018	Department of Psychology Graduate Summer Research Fellowship

National Science Foundation

2018	Graduate Research Fellowship Program, Honorable Mention

Journal articles

Rajappa, N., **Guest**, **D. R.**, & Oxenham, A. J. (2023). Benefits of harmonicity for hearing in noise are limited to detection and pitch-related discrimination tasks. *Biology*, *12*(12), 1522. 🔗 doi:https://doi.org/10.3390/biology12121522

Guest, **D. R.**, & Oxenham, A. J. (2022). Human discrimination and modeling of high-frequency complex tones shed light on the neural codes for pitch. *PLoS Computational Biology*, *18*(3), e1009889. 🔗 doi:10.1371/journal.pcbi.1009889

Kapolowicz, M. R., **Guest**, **D. R.**, Montazeri, V., Baese-Berk, M. M., & Assmann, P. F. (2021). Effects of spectral envelope and fundamental frequency shifts on the perception of foreign-accented speech. *Language and Speech*, 1–26. 🔗 doi:10.1177/00238309211029679

Guest, **D. R.**, & Oxenham, A. J. (2019). 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. 🔗 doi:10.1121/1.5102169

Talks

Guest, **D. R.**, & Carney, L. H. (2023). Profile analysis and neural fluctuations: New perspectives on a classic stimulus. Invited talk presented at ASA 2023 Chicago.

Guest, **D. R.**, Allen, E., Wu, Y., Naselaris, T., Arcaro, M., & Kay, K. N. (2021). Evidence for a ventral visual stream in the pulvinar. Contributed talk presented at VSS 2021 (virtual).

Guest, **D. R.**, & Oxenham, A. J. (2019). Pitch perception of concurrent high-frequency complex tones. Invited talk presented at ASA 2019 Louisville. 🔗 doi:`10.1121/1.5101520`

Posters

Graves, J. E., **Guest**, **D. R.**, & Mehta, A. (2024). Multiple pitch perception with rate-place metamers. Poster presented at ARO 2024.

Guest, **D. R.**, Farhadi, A., & Carney, L. H. (2024). Using auditory computational models to explore the impact of the efferent system on speech coding. Poster presented at ARO 2024.

Li, C., Roloson, K. E., Agarwalla, S., **Guest**, **D. R.**, & Carney, L. H. (2024). Probing correlations between different types of feature selectivity in inferior colliculus of awake rabbit. Poster presented at ARO 2024.

Guest, **D. R.**, Cameron, D. A., Schwarz, D. M., Feld, C. E., Leong, U.-C., & Carney, L. H. (2023). Profile analysis in listeners with sensorineural hearing loss. Poster presented at ARO 2023.

Guest, **D. R.**, & Oxenham, A. J. (2022). Profile analysis and ripple discrimination at high frequencies. Poster presented at ASA 2022 Denver.

Guest, **D. R.**, Rajappa, N., & Oxenham, A. J. (2022). Measuring harmonic benefit in musicians and non-musicians in several tasks. Poster presented at ASA 2022 Denver.

Guest, **D. R.**, & Oxenham, A. J. (2021). Fundamental frequency discrimination in mixtures of high-frequency complex tones: Data and ideal-observer model predictions. Poster presented at ARO 2021 (virtual).

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

Guest, **D. R.**, & Oxenham, A. J. (2020). Perception of melody and triads at high frequencies. Poster presented at ASA 2020 (virtual). 🔗 doi:`10.1121/1.5146799`

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

Guest, **D. R.**, & Oxenham, A. J. (2019). 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. (2018). The role of pitch and harmonic cancellation in simultaneous speech segregation. Poster presented at 2018 UMN Center for Cognitive Science Spring Research Day.

Guest, **D. R.**, & Oxenham, A. J. (2018). The role of pitch and harmonic cancellation when listening to speech in background sounds. Poster presented at ASA 2018 Victoria. 🔗 doi:`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. 🔗 doi:`10.1121/1.5068208`

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.**, 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. 🔗 doi:`10.1121/1.4988543`

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. 🔗 doi:`10.1121/1.5014953`

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.

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. 🔗 doi:`10.1121/1.4950328`

Teaching

University of Minnesota

2024	Guest lecturer, Intro to Neuroengineering (BME 218, Rochester)
	Lecture topic: *Signal detection theory*
2021	Guest lecturer, Osher Lifelong Learning Institute Course "Normal and Abnormal Perception: How Senses Shape Experience"
	Lecture topic: *The science of hearing loss*
2018 – 2019	Guest lecturer, Introduction to Biological Psychology (PSY 3061, Minnesota)
	Lecture topic: *Audition*

Professional service

Acoustical Society of America

2024 – 2027	Associate Editor, Proceedings of Meetings on Acoustics (POMA), Psychological and Physiological Acoustics (P&P)
2024	Co-organizer, P&P Best Student Poster Award Session, special poster session at ASA Ottawa
2019	Co-organizer, "Guidance from the Experts: Applying for Grants and Fellowships", special panel session at ASA San Diego
2018 – 2020	Student Council Representative, Psychological and Physiological Acoustics (P&P)

University of Minnesota

2019 – 2022	Department of Psychology Graduate Student Liaison Committee Representative, Cognitive and Brain Sciences

Peer reviewing

Attention, Perception, & Psychophysics

Hearing Research

Journal of the Acoustical Society of America

PLOS Computational Biology

Psychonomic Bulletin & Review

Scientific Reports

Mentorship

University of Rochester

2022 – …   Supervisor for undergraduate research projects:
- Chenyang Li
- Kylie Roloson

University of Minnesota

2018 – 2022   Supervisor for undergraduate research projects:
- Neha Rajappa (supported by 🔗 UROP Award in 2021)
- Thomas Tobin (supported by 🔗 UROP Award in 2020 and 2021)
- Ethan Lentz
- Anders Bjorkman

Skills

Computers	bash, git, LaTeX, Linux, SLURM
Languages	English, Spanish, Portuguese
Mathematics	Differential equations, linear algebra, multivariable calculus, real analysis
Programming languages	Julia, C, Python, MATLAB/Mex, R
Statistics	Bayesian statistics, estimation theory, generalized linear regression, multilevel/hierarchical regression, neural networks, probability theory