# 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)

**Oticon A/S**
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**

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| 2021 | Guest lecturer, Osher Lifelong Learning Institute Course "Normal and Abnormal Perception: How Senses Shape Experience"<br>Lecture topic: *The science of hearing loss* |
| 2018 – 2019 | Guest lecturer, Introduction to Biological Psychology (PSY 3061)<br>Lecture topic: *Audition* |

## Professional service

**Acoustical Society of America**

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|---|---|
| 2024 – 2027 | Associate Editor, Proceedings of Meetings on Acoustics (POMA), Psychological and Physiological Acoustics (P&P) |
| 2019 | Co-organized "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**

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

## 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

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| 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 |