Jacie R. McHaney
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jrmchaney.github.io

EDUCATION & TRAINING

2015	**A.S.,** General Studies in Science Austin Community College, Austin, TX
2015	**B.S.,** Psychology, *Psychology Honors*, Biology Minor The University of Texas at Austin, Austin, TX
2023	**Ph.D.,** Communication Science and Disorders University of Pittsburgh, Pittsburgh, PA

APPOINTMENTS & POSITIONS

2023	**Research Associate**, Communication Science and Disorders, University of Pittsburgh, Pittsburgh, PA
2023-Present	**Research Assistant Professor** Roxelyn and Richard Pepper Department of Communication Sciences and Disorders, *Northwestern University*

ABSENCE FROM RESEARCH

08/2021 – 02/2022	Parental Leave

GRANT SUPPORT

Prior Grant Support

08/2015 – 12/2015	**Undergraduate Research Fellowship** The University of Texas at Austin	$1,000
09/2019 – 08/2021	**Training Program in Auditory and Vestibular Neuroscience** T32DC011499 Role: Predoctoral Trainee (PIs: Kandler and Yates) National Institute for Deafness and Communication Disorders *Training in Auditory and Vestibular Neuroscience*	$85,252
02/2022 – 01/2023	**University of Pittsburgh Clinical and Translational Science Institute Quantitative Methodologies Pilot Program** UL1TR001857 Role: Co-Principal Investigator (PI: Chandrasekaran) National Center for Advancing Translational Sciences *Decision Strategies in Speech Perception in Aging*	$25,000

05/2022 – 04/2023 **NRSA Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research** $48,536
F31DC020085
Role: Principal Investigator
National Institute for Deafness and Communication Disorders
Neural Mechanisms of Speech Perception in Noise in Middle-Age

PUBLICATIONS

Peer-reviewed

1. Koski, J. E., **McHaney, J. R.**, Rigney, A. E., & Beer, J. S. (2020). Reconsidering Longstanding Assumptions About the Role of Medial Prefrontal Cortex (MPFC) in Social Evaluation. *NeuroImage*, *214*, 116752.
2. Llanos, F., **McHaney, J. R.,** Schuerman, W. L., Yi, H. G., Leonard, M. K., & Chandrasekaran, B. (2020). Non-invasive peripheral nerve stimulation selectively enhances speech category learning in adults. *npj Science of Learning, 5*(1), 1-11.
3. **McHaney, J. R.,** Gnanateja, G. N., Smayda, K. E., Zinszer, B. D., & Chandrasekaran, B. (2021). Cortical Tracking of Speech in Delta Band Relates to Individual Differences in Speech in Noise Comprehension in Older Adults. *Ear and Hearing, 42*(2), 343-354.
4. **McHaney, J. R.,** Tessmer, R., Roark, C. L., & Chandrasekaran, B. (2021). Working memory relates to individual differences in speech category learning: Insights from computational modeling and pupillometry. *Brain and Language, 222,* 105010.
5. Lescht, E., Venker, C., **McHaney, J. R.,** Bohland, J., & Hampton Wray, A. (2022). Novel Word Recognition in Childhood Stuttering. *Topics in Language Disorders, 42*(1), 41-56.
6. Cancel, V. E.*, **McHaney, J. R.***, Milne, V. Palmer, C., & Parthasarathy, A. (2023). Speech in Noise Difficulties with Normal Audiograms: Insights from the Auditory Processing Disorder Test Battery. *Scientific Reports, 13*, 13636. *(*****co-first authors).*
7. **McHaney, J. R.,** Schuerman, W. L., Leonard, M. K., & Chandrasekaran, B. (2023). Transcutaneous vagus nerve stimulation modulates pupillary responses during non-native speech category learning. *Journal of Speech, Language, and Hearing Research*, *66*(10), 3825-3843.

ARCHIVED PRE-PRINTS

1. Mukhopadhyay, M., **McHaney, J. R.,** Chandrasekaran, B., & Sarkar, A. (2021). Bayesian semiparametric longitudinal inverse-probit mixed models for category learning. *arXiv preprint arXiv:2112.04626.*
2. Roark, C. L., Paulon, G., Rebaudo, G., **McHaney, J. R.**, Sarkar, A., & Chandrasekaran, B. (2022). Individual differences in working memory impact task engagement and decision processes during speech category learning. *PsyArXiv.* doi: 10.31234/osf.io/fzqht.
3. **McHaney, J. R.,** Hancock, K. E., Polley, D. B., & Parthasarathy, A. (2023). Sensory representations and pupil-indexed listening effort provide complementary contributions to multi-talker speech intelligibility. *bioRxiv*. doi: 10.1101/2023.08.13.553131.

CONFERENCE POSTER PRESENTATIONS

1. Koski, J. E., **Richardson, J. B.**[†]**,** Rigney, A. E., & Beer, J. S. (April 2016). Too much information or warm fuzzy feelings? Understanding the role of MPFC in processing the self versus others. Poster presented at the Social and Affective Neuroscience (SANS) Annual Meeting, New York, NY.
2. Smayda, K. E, **McHaney, J. R.**, & Chandrasekaran, B. (May 2017). Music Training for the Enhancement of Speech-In-Noise Processing in Older Adults. Poster presented at the Texas Leadership Luncheon, Austin, TX.
3. **McHaney, J. R.**, Zinszer, B. D., Smayda, K. E., & Chandrasekaran, B. (March 2018). Effect of listening environment on cortical entrainment to continuous speech in older adults. Poster presented at the Cognitive Neuroscience Society 25th Annual Meeting, Boston, MA.
4. Llanos, F., **McHaney, J. R.,** Leonard, M. K., Schuerman, W. L., Yi, H. G., & Chandrasekaran, B. (August 2018). Transcutaneous vagus nerve stimulation enhances non-native speech categorization. Poster presented at the 10th Annual Meeting of the Society for the Neurobiology of Language, Québec City, Québec, Canada.
5. **McHaney, J. R.,** Zinszer, B. D., Smayda, K. E., Xie, Z., & Chandrasekaran, B. (December 2018). Cortical entrainment to the speech envelope relates to speech comprehension in older adults under adverse listening conditions. Poster presented at the 12th Annual Aging Institute Research Day, Pittsburgh, PA.
6. **McHaney, J. R.**, Schuerman, W. L., Leonard, M. K., & Chandrasekaran, B. (October 2020). Non-invasive peripheral nerve stimulation paired with speech sounds modulates pupillary responses and selectively enhances learning. Poster presented at the Twelfth Annual Meeting of the Society for Neurobiology of Language, Virtual.
7. Roark, C. L., Reetzke, R., Llanos, F., **McHaney, J. R.**, & Chandrasekaran, B. (December 2020). Learning Mandarin tone categories with natural speech and a non-speech homologue. Poster to be presented at the 179th Meeting of the Acoustical Society of America, Chicago, IL. (Conference canceled)
8. Lescht, E., Venker, C., **McHaney, J. R.,** & Hampton Wray, A. (January 2021). Novel word learning in children who stutter. Poster presented at the 12th Oxford Dysfluency Conference, Virtual.
9. **McHaney, J. R.,** Hancock, K. E., Polley, D. B., & Parthasarathy, A. (February 2022). Neurophysiological markers of central gain and their relationship to speech-in-noise intelligibility. Poster presented at the 45th Annual MidWinter Meeting of the Association for Research in Otolaryngology, Virtual.
10. Cancel, V. E., **McHaney, J. R.,** Milne, V., Palmer, C., & Parthasarathy, A. (February 2022). Hearing Difficulties with Normal Audiograms: Insights from the Auditory Processing Disorder Test Battery. Poster presented at the 45th Annual MidWinter Meeting of the Association for Research in Otolaryngology, Virtual.
11. Cancel, V. E., **McHaney, J. R.,** Milne, V., Palmer, C., & Parthasarathy, A. (April 2022). Hearing Difficulties with Normal Audiograms: Insights from the ADP Test Battery. Poster presented at

[†] Last name changed to McHaney from Richardson in 2017

the American Academy of Audiology 2022 + HearTECH Expo, St. Louis, MO. *****Received the James and Susan Jerger Award for Excellence in Student Research, American Academy of Audiology Foundation*

12. **McHaney, J. R.,** Yurasits, K., Hancock, K. E., Polley, D. B., & Parthasarathy, A. (July 2022). Neurophysiological markers of central gain and their relationship to speech-in-noise intelligibility in normal-hearing listeners. Poster presented at the Auditory System Gordon Research Conference: Preventing Loss and Recovering Function of the Auditory System, Smithfield, RI.
13. **McHaney, J. R.,** Zhen, L., Roark, C. L., Parthasarathy, A. & Chandrasekaran, B. (October 2022). Sensory Encoding and Decision-making in Speech Perception in Noise. Poster presented at the Fourteenth Annual Meeting of the Society for Neurobiology of Language, Philadelphia, PA.
14. Zhen, L. Q., **McHaney, J. R.,** Zink, M. E., Mitchell, C., Parida, S., Anthony, S., Hallihan, M., Brown, C. A., Chandrasekaran, B., & Parthasarathy, A. (February 2023). Age-related Differences in Neural and Perceptual Signatures of Temporal Fine Structure Processing Underlying Muti-talker Speech Intelligibility. Poster to be presented at the Association for Research in Otolaryngology 46th Annual MidWinter Meeting, Orlando, FL.
15. Zink, M. E., **McHaney, J. R.,** Mitchell, C., Hallihan, M., Anthony, S., Chandrasekaran, B., & Parthasarathy, A. (February 2023). Neurophysiological Markers of Sensory Gain and Their Relationship to Speech Perception in Noise in Young and Middle-Aged Adults. Poster to be presented at the Association for Research in Otolaryngology 46th Annual MidWinter Meeting, Orlando, FL.
16. Parker, A., **McHaney, J. R.,** Xie, Z., Chandrasekaran, B., & Hampton Wray, A. (February 2023). Cortical Tracking of Continuous Speech-in-Noise: Children's Use of Linguistic and Acoustic Information. Poster to be presented at the Association for Research in Otolaryngology 46th Annual MidWinter Meeting, Orlando, FL.
17. **McHaney, J. R.** & Chandrasekaran, B. (March 2023). Lexical knowledge facilitates phoneme categorization at intermediate noise levels. Poster presented at the American Auditory Society's 50th Annual Scientific & Technology Conference, Scottsdale, AZ.
18. Mitchell, C., Zink, M. E., **McHaney, J. R.,** Anthony, S., Hallihan, M., Chandrasekaran, B., & Parthasarathy, A. (April 2023). Relationship between altered auditory temporal processing and speech perception in noise in young and middle-aged adults. Poster to be presented at the American Academy of Audiology 2023 + HearTECH Expo, Seattle, WA.
19. Yurasits, K., Zhen, L. Q., Parida, S., Klara, J., **McHaney, J. R.,** Cancel, V., Zink, M. E., Mitchell, C., Chandrasekaran, B., & Parthasarathy, A. (April 2023). Age-related changes in the representation of stimulus temporal fine structure cues and their relationship to multi-talker speech intelligibility. Poster to be presented at the American Academy of Audiology 2023 + HearTECH Expo, Seattle, WA. *****Received the James and Susan Jerger Award for Excellence in Student Research, American Academy of Audiology Foundation*
20. Parker, A., **McHaney, J. R.,** Coleman, B., Chandrasekaran, B., & Hampton Wray, A. (November 2023). Phonological Awareness and the Impact of Noise Level on Speech Perception. Poster to be presented at the 2023 American Speech-Language-Hearing Association Convention, Boston, MA.

CONFERENCE PODIUM PRESENTATIONS

1. **McHaney, J. R.,** Zhen, L., Anthony, S., Xie, Z., Parthasarathy, A., & Chandrasekaran, B. (February 2023). Deficits in Sensory Decision-Making Underlie Self-Perceived Hearing Difficulties. Talk presented at the Association for Research in Otolaryngology 46th Annual MidWinter Meeting, Orlando, FL.

PRESENTATIONS

Aug 2017 *Effect of listening environment on continuous speech processing in older adults*, Sixth Annual Communication Sciences and Disorders Research Blitz, The University of Texas at Austin, Austin, TX.

Dec 2019 *Aging, cognition, and speech processing*, Auditory and Vestibular Neuroscience T32 Seminar, University of Pittsburgh, Pittsburgh, PA.

Mar 2020 *Cortical Tracking of Speech in Older Adults*, Auditory and Vestibular Neuroscience T32 Retreat, University of Pittsburgh, Pittsburgh, PA.

Apr 2020 *Cortical Tracking of Speech in Older Adults*, Department of Communication Science and Disorders Research Round Table Seminar, University of Pittsburgh, Pittsburgh, PA.

Jan 2021 *Working Memory During Non-Native Speech Category Learning*, Auditory and Vestibular Neuroscience T32 Seminar, University of Pittsburgh, Pittsburgh, PA.

Feb 2021 *Influence of Working Memory on Non-Native Speech Category Learning*, Department of Communication Science and Disorders Research Round Table Seminar, University of Pittsburgh, Pittsburgh.

Apr 2021 *Working Memory Influences Speech Category Learning: A Pupillometry Study,* Auditory and Vestibular Neuroscience T32 Annual Retreat, University of Pittsburgh, Pittsburgh, PA.

Nov 2022 *Sensory and Cognitive Factors Underlying Individual Variability in Speech in Noise Perception,* Hearing and Cookies Seminar Series, University of Pittsburgh, Pittsburgh, PA.

Aug 2023 *Neural encoding of the fundamental frequency supports the decisional processes in speech in noise categorization,* Mini-symposium on Speech processing in challenging listening environments: Towards a multi-dimensional framework, Northwestern University, Evanston, IL.

MEDIA COVERAGE

- FACETS. (2019). Team-Based Science at its best. [press release]. Retrieved from https://issuu.com/pittshrs/docs/facets_spring_19_pdf/28
- Inverse (2020). Scientists discover brain hack that improves language abilities by 13%. Retrieved from Scientists discover brain hack for language learning (inverse.com)
- Psychology Today. (2020). Can Vagus Nerve Stimulation Improve How We Learn? [press release]. Retrieved from Can Vagus Nerve Stimulation Improve How We Learn? | Psychology Today

- Science Daily. (2020). Non-invasive nerve stimulation boosts learning of foreign language sounds. [press release]. Retrieved from Non-invasive nerve stimulation boosts learning of foreign language sounds -- ScienceDaily

JOURNAL REVIEWER

Journal of Speech, Language, and Hearing Research, 2023

Nature Neuroscience (co-reviewer), 2023

HONORS & AWARDS

2012 Phi Theta Kappa Honor Society
2015 University Honors, The University of Texas at Austin
2015 Psi Chi International Honor Society in Psychology
2022 Society for Neurobiology of Language Travel Award
2022 Gordon Research Conference – Auditory System Travel Funds
2023 Association for Research in Otolaryngology Childcare Grant

PROFESSIONAL MEMBERSHIPS

Society for Neurobiology of Language
Association for Research in Otolaryngology
American Auditory Society

SERVICE

University of Pittsburgh
2019-2021 **PhD Student Representative**, Communication Science and Disorders
2020-2021 **Organizer,** Communication Science and Disorders Research Round Table Seminar

Northwestern University
2023 **Organizer,** Mini-symposium on Speech processing in challenging listening environments: Towards a multi-dimensional framework

TEACHING

University of Pittsburgh
2021 **Assistant Instructor,** Neuroscience of Communication (CSD 2110)
2021 **Guest Lecturer**, Introduction to Neuroscience of Communication (CSD 1237)
2023 **Guest Lecturer,** Neuroscience of Communication (CSD 2110)
2023 **Guest Lecturer,** Advanced Physiological Assessment (CSD 2252)

MENTORSHIP

Undergraduate Honors Thesis

University of Texas at Austin
2016 Yuan Han
2017-2018 Elise LeBovidge

University of Pittsburgh
2018-2020 Megan McKenzie

Undergraduate Research Assistants

University of Texas at Austin

2016	Karen Lin	2016-2017	Danielle De La Rosa
2016	Kay Torriente	2016-2017	Abigail Hall
2016	Isabelle Arseneau Bruneau	2016-2017	Megan Burke
		2017-2018	Sarina Lieberman
2016-2017	Stephen Slaughter	2017-2018	Sarah Campbell
2016-2017	Dominique Arzola	2017-2018	Priyanka Deshmane

University of Pittsburgh

2019-2020	Danielle Wu	2022	Olivia Flemm
2019-2020	Laura Fahs	2022-2023	Sarah Anthony
2019-2020	Olivia Gall	2022-2023	Shaina Wasileski
2019-2020	Inca Malik	2022-2023	Katie Bergstrom
2019-2020	Santosh Donepudi	2022-2023	Megan Hallihan
2022	Rebecca Kime	2022-2023	Miaofang Hu
2022	Angelina DiNardo	2022-2023	Jasmine Cardino
2022	Madison Andreano	2022-2023	Claire Mitchell

High School Students

Austin High School

2016	Emma Green

Winchester Thurston School

2022-Present	Marysia Brown

Shady Side Academy

2021-2022	Karen Linares Mendoza	2022	Zoey Miller
2022	Cassidy Mineo	2022	Savitha Thompson

DIVERSITY AND INCLUSION

2021	Hosted virtual lab tour at University of Pittsburgh for Innovative Mentoring and Professional Advancement through Cultural Training (IMPACT) program at Case Western Reserve University in collaboration with Hampton University, a historically black university.
2022	Co-mentor for Karen Linares Mendoza, recipient of a diversity supplement from NIDCD to conduct research through a summer internship.
2022	Mentor for two undergraduate CSD students from the Innovative Mentoring and Professional Advancement through Cultural Training (IMPACT) program through a summer research internship at the University of Pittsburgh.