



## Matthew Fitzgerald, PhD

Associate Professor of Otolaryngology - Head & Neck Surgery (OHNS)  
Otolaryngology (Head and Neck Surgery)

### Bio

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#### BIO

I received my undergraduate degree in Communication Sciences and Disorders from The Wichita State University. I then traveled to Vanderbilt University to complete a M.S. in Audiology and Hearing Sciences, before completing a clinical fellowship at Henry Ford Hospital in Detroit, MI with Dr. Gary Jacobson. I subsequently completed a Ph.D. at Northwestern University in Communication Disorders with Dr. Beverly Wright exploring patterns of perceptual learning in individuals with normal hearing. Upon completion of my doctorate, I moved to the New York University School of Medicine for a post-doctoral fellowship in the Department of Otolaryngology. There, I worked with Dr. Mario Svirsky to identify recipients of cochlear implants who have not yet fully adapted to their device, and to provide tools which audiologists could use to modify the map to help these patients. I later joined the faculty at NYU, and also at Montclair State University. In 2015 I became the Chief of Audiology at Stanford, where I oversee the Audiology departments of both Stanford Hospital and the Lucille Packard Children's Hospital.

#### ACADEMIC APPOINTMENTS

- Associate Professor - University Medical Line, Otolaryngology (Head and Neck Surgery)
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Speech Language Hearing Association (1995 - present)
- Member, Association for Research in Otolaryngology (2005 - present)
- Member, American Auditory Society (2005 - present)
- Member, American Academy of Audiology (2015 - present)

#### PROFESSIONAL EDUCATION

- B.A., The Wichita State University , Communication Sciences and Disorders
- M.S., Vanderbilt University , Audiology and Hearing Sciences
- Ph.D., Northwestern University , Communication Sciences and Disorders

#### LINKS

- Google Scholar: <https://scholar.google.com/citations?user=vw0MhSMAAAAJ>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

My research encompasses several translational projects. One focus is to modify the routine audiologic test battery such that it places equal weight on hearing acuity and hearing function. This work includes measures of speech in noise, or electrophysiologic responses such as the FFR. I also explore tools to better assess and maximize performance in users of hearing aids and cochlear implants. Finally, I am also investigating the benefits of telemedicine, and new treatments for tinnitus.

### CLINICAL TRIALS

- Fall Risk Assessment and Speech Intelligibility Enhancement Using In-ear Device, Recruiting

## Teaching

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### COURSES

#### 2025-26

- Seminar in Music Perception and Cognition I: MUSIC 351A (Aut)

#### 2024-25

- Seminar in Music Perception and Cognition I: MUSIC 351A (Aut)

#### 2023-24

- Seminar in Music Perception and Cognition I: MUSIC 351A (Aut)

#### 2022-23

- Seminar in Music Perception and Cognition I: MUSIC 351A (Aut)

### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Elish Mahajan, Varsha Mysore Athreya

## Publications

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### PUBLICATIONS

- **Speech-in-Noise Assessment in the Routine Audiologic Test Battery: Relationship to Perceived Auditory Disability.** *Ear and hearing*  
Fitzgerald, M. B., Ward, K. M., Gianakas, S. P., Smith, M. L., Blevins, N. H., Swanson, A. P.  
2024
- **A Large-Scale Study of the Relationship Between Degree and Type of Hearing Loss and Recognition of Speech in Quiet and Noise.** *Ear and hearing*  
Smith, M. L., Winn, M. B., Fitzgerald, M. B.  
2024
- **Preliminary Guidelines for Replacing Word-Recognition in Quiet With Speech in Noise Assessment in the Routine Audiologic Test Battery.** *Ear and hearing*  
Fitzgerald, M. B., Gianakas, S. P., Qian, Z. J., Losorelli, S., Swanson, A. C.  
2023
- **Evaluation of Asymmetries in Speech-in Noise Abilities in Audiologic Screening for Vestibular Schwannoma.** *Ear and hearing*  
Jason Qian, Z., Vaisbuch, Y., Gianakas, S. P., Tran, E. D., Ali, N. E., Blevins, N. H., Fitzgerald, M. B.  
2023

- **Use of Hearing Aids Embedded with Inertial Sensors and Artificial Intelligence to Identify Patients at Risk for Falling** *OTOLOGY & NEUROTOLOGY*  
Steenerson, K. K., Griswold, B., Keating III, D. P., Srour, M., Burwinkel, J. R., Isanhart, E., Ma, Y., Fabry, D. A., Bhowmik, A. K., Jackler, R. K., Fitzgerald, M. B.  
2025; 46 (2): 121-127
- **The Relationship of Pitch Discrimination with Segregation of Tonal and Speech Streams for Cochlear Implant Users.** *Trends in hearing*  
Camarena, A., Ardis, M., Fujioka, T., Fitzgerald, M. B., Goldsworthy, R. L.  
2024; 28: 23312165241305049
- **Comparing human and machine speech recognition in noise with QuickSIN.** *JASA express letters*  
Slaney, M., Fitzgerald, M. B.  
2024; 4 (9)
- **Safety and Early Outcomes of Cochlear Implantation of Nucleus Devices in Infants: A Multi-Centre Study.** *Trends in hearing*  
Honigman, T., Cushing, S. L., Papsin, B. C., Waltzman, S., Woodard, J., Neumann, S., Fitzgerald, M. B., Gordon, K. A.  
2024; 28: 23312165241261480
- **Immigrant Status Disparities in Hearing Health Care Use in the United States.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*  
Halagur, A. S., Fitzgerald, M. B., Megwalu, U. C.  
2024
- **Prevalence of Cochlear Nerve Deficiency and Hearing Device Use in Children With Single-Sided Deafness** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*  
Ward, K. M., Coughran, A. J., Lee, M., Fitzgerald, M. B., Cheng, A. G., Chang, K. W., Ahmad, I. N.  
2023
- **Prevalence of Cochlear Nerve Deficiency and Hearing Device Use in Children With Single-Sided Deafness.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*  
Ward, K. M., Coughran, A. J., Lee, M., Fitzgerald, M. B., Cheng, A. G., Chang, K. W., Ahmad, I. N.  
2023
- **Identifying Listeners Whose Speech Intelligibility Depends on a Quiet Extra Moment After a Sentence.** *Journal of speech, language, and hearing research : JSLHR*  
Gianakas, S. P., Fitzgerald, M. B., Winn, M. B.  
2022: 1-14
- **Remote Intraoperative Neural Response Telemetry: Technique and Results in Cochlear Implant Surgery.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Kouhi, A., Swanson, A., Fitzgerald, M. B., Blevins, N. H.  
2022; 43 (6): 638-642
- **Outcomes in Patients Meeting Cochlear Implant Criteria in Noise but Not in Quiet.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Thai, A., Tran, E., Swanson, A., Fitzgerald, M. B., Blevins, N. H., Ma, Y., Smith, M. L., Larky, J. B., Alyono, J. C.  
2022; 43 (1): 56-63
- **Valid Acoustic Models of Cochlear Implants: One Size Does Not Fit All.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Svirsky, M. A., Capach, N. H., Neukam, J. D., Azadpour, M., Sagi, E., Hight, A. E., Glassman, E. K., Lavender, A., Seward, K. P., Miller, M. K., Ding, N., Tan, C., Fitzgerald, et al  
2021; 42 (10S): S2-S10
- **Treatment Tone Spacing and Acute Effects of Acoustic Coordinated Reset Stimulation in Tinnitus Patients.** *Frontiers in network physiology*  
Munjal, T., Silchenko, A. N., Pfeifer, K. J., Han, S. S., Yankulova, J. K., Fitzgerald, M. B., Adamchic, I., Tass, P. A.  
2021; 1: 734344
- **Influence of electrode to cochlear duct length ratio on post-operative speech understanding outcomes.** *Cochlear implants international*  
Cooperman, S. P., Aaron, K. A., Fouad, A., Tran, E., Blevins, N. H., Fitzgerald, M. B.  
2021: 1-11

- **Assessment of Inter- and Intra-Rater Reliability of Tablet-Based Software to Measure Cochlear Duct Length.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Cooperman, S. P., Aaron, K. A., Fouad, A., Tran, E., Blevins, N. H., Fitzgerald, M. B.  
2021
- **Ocular Vestibular-Evoked Myogenic Potential Amplitudes Elicited at 4 kHz Optimize Detection of Superior Semicircular Canal Dehiscence.** *Frontiers in neurology*  
Tran, E. D., Swanson, A. n., Sharon, J. D., Vaisbuch, Y. n., Blevins, N. H., Fitzgerald, M. B., Steenerson, K. K.  
2020; 11: 879
- **Health Literacy and Hearing Healthcare Use.** *The Laryngoscope*  
Tran, E. D., Vaisbuch, Y. n., Qian, Z. J., Fitzgerald, M. B., Megwalu, U. C.  
2020
- **Ambient Pressure Tympanometry in the Workup of Patulous Eustachian Tube and Neurotologic Disorders.** *Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery*  
Thai, A. n., Lee, J. Y., Sayyid, Z. N., Hosseini, D. K., Swanson, A. n., Fitzgerald, M. B., Vaisbuch, Y. n.  
2020
- **Factors influencing classification of frequency following responses to speech and music stimuli.** *Hearing research*  
Losorelli, S. n., Kaneshiro, B. n., Musacchia, G. A., Blevins, N. H., Fitzgerald, M. B.  
2020; 398: 108101
- **Rhythmic Wave Patterns on Ambient Pressure Tympanometry in Patients With Objective Tinnitus-associated Pathologies.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Sayyid, Z. N., Thai, A., Swanson, A., Hosseini, D. K., Fitzgerald, M. B., Ma, Y., Vaisbuch, Y.  
2019
- **Frequency-following response among neonates with progressive moderate hyperbilirubinemia.** *Journal of perinatology : official journal of the California Perinatal Association*  
Musacchia, G., Hu, J., Bhutani, V. K., Wong, R. J., Tong, M., Han, S., Blevins, N. H., Fitzgerald, M. B.  
2019
- **Occupational Noise Exposure and Risk for Noise-Induced Hearing Loss Due to Temporal Bone Drilling.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Vaisbuch, Y., Alyono, J. C., Kandathil, C., Wu, S. H., Fitzgerald, M. B., Jackler, R. K.  
2018; 39 (6): 693–99
- **Assessment of Hearing During the Early Years of the American Otological Society.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Fitzgerald, M. B., Jackler, R. K.  
2018; 39 (4S Suppl 1): S30–S42
- **Detection of tones of unexpected frequency in amplitude-modulated noise.** *The Journal of the Acoustical Society of America*  
Wright, B. A., Fitzgerald, M. B.  
2017; 142 (4): 2043
- **Self-Selection of Frequency Tables with Bilateral Mismatches in an Acoustic Simulation of a Cochlear Implant** *JOURNAL OF THE AMERICAN ACADEMY OF AUDIOLOGY*  
Fitzgerald, M. B., Prosolovich, K., Tan, C., Glassman, E. K., Svirsky, M. A.  
2017; 28 (5): 385-394
- **Bilateral Loudness Balancing and Distorted Spatial Perception in Recipients of Bilateral Cochlear Implants** *EAR AND HEARING*  
Fitzgerald, M. B., Kan, A., Goupell, M. J.  
2015; 36 (5): E225-E236
- **Bilateral cochlear implants with large asymmetries in electrode insertion depth: implications for the study of auditory plasticity** *ACTA OTO-LARYNGOLOGICA*  
Svirsky, M. A., Fitzgerald, M. B., Sagi, E., Glassman, E. K.  
2015; 135 (4): 354-363

- **Feasibility of Real-Time Selection of Frequency Tables in an Acoustic Simulation of a Cochlear Implant** *EAR AND HEARING*  
Fitzgerald, M. B., Sagi, E., Morbiwala, T. A., Tan, C., Svirsky, M. A.  
2013; 34 (6): 763-772
- **Factors influencing consistent device use in pediatric recipients of bilateral cochlear implants.** *Cochlear implants international*  
Fitzgerald, M. B., Green, J. E., Fang, Y., Waltzman, S. B.  
2013; 14 (5): 257-265
- **Perceptual learning and generalization resulting from training on an auditory amplitude-modulation detection task** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*  
Fitzgerald, M. B., Wright, B. A.  
2011; 129 (2): 898-906
- **A New Software Tool to Optimize Frequency Table Selection for Cochlear Implants** *OTOLOGY & NEUROTOLOGY*  
Jethanamest, D., Tan, C., Fitzgerald, M. B., Svirsky, M. A.  
2010; 31 (8): 1242-1247
- **Enhancing Perceptual Learning by Combining Practice with Periods of Additional Sensory Stimulation** *JOURNAL OF NEUROSCIENCE*  
Wright, B. A., Sabin, A. T., Zhang, Y., Marrone, N., Fitzgerald, M. B.  
2010; 30 (38): 12868-12877
- **Reimplantation of hybrid cochlear implant users with a full-length electrode after loss of residual hearing** *OTOLOGY & NEUROTOLOGY*  
Fitzgerald, M. B., Sagi, E., Jackson, M., Shapiro, W. H., Roland, J. T., Waltzman, S. B., Svirsky, M. A.  
2008; 29 (2): 168-173
- **What matched comparisons can and cannot tell us: The case of cochlear implants** *EAR AND HEARING*  
Sagi, E., Fitzgerald, M. B., Svirsky, M. A.  
2007; 28 (4): 571-579
- **The effect of perimodiolar placement on speech perception and frequency discrimination by cochlear implant users** *ACTA OTO-LARYNGOLOGICA*  
Fitzgerald, M. B., Shapiro, W. H., McDonald, P. D., Neuburger, H. S., Ashburn-Reed, S., Immerman, S., Jethanamest, D., Roland, J. T., Svirsky, M. A.  
2007; 127 (4): 378-383
- **Perceptual-learning evidence for separate processing of asynchrony and order tasks** *JOURNAL OF NEUROSCIENCE*  
Mossbridge, J. A., Fitzgerald, M. B., O'Connor, E. S., Wright, B. A.  
2006; 26 (49): 12708-12716
- **Customized selection of frequency maps in an acoustic simulation of a cochlear implant.** *Conference proceedings : ... Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual Conference*  
Fitzgerald, M. B., Morbiwala, T. A., Svirsky, M. A.  
2006; 1: 3596-3599
- **A perceptual learning investigation of the pitch elicited by amplitude-modulated noise** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*  
Fitzgerald, M. B., Wright, B. A.  
2005; 118 (6): 3794-3803
- **The time course of attention in a simple auditory detection task** *PERCEPTION & PSYCHOPHYSICS*  
Wright, B. A., Fitzgerald, M. B.  
2004; 66 (3): 508-516
- **Different patterns of human discrimination learning for two interaural cues to sound-source location** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Wright, B. A., Fitzgerald, M. B.  
2001; 98 (21): 12307-12312

## PRESENTATIONS

- Listen and learn: the latest in hearing science - Stanford Health Matters