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Education

1992	Ph.D., University of Washington, Speech and Hearing Sciences
1988	M.S., University of Washington, Speech and Hearing Sciences
1984	B.S., Stanford University, Biological Sciences

Positions and Employment

2013-	Professor, Department of Speech, Language and Hearing Sciences, University of Colorado at Boulder.
2000-2013	Associate Professor, Department of Speech, Language and Hearing Sciences, University of Colorado at Boulder.
1992-2000	Assistant Professor, Department of Speech, Language and Hearing Sciences, University of Colorado at Boulder.
1991-1992	Contract Audiologist, Veteran's Administration Medical Center Pacific Medical Center, Seattle, WA.
1991-1992	NIH Predoctoral Trainee, Hearing Research Lab, University of Washington.
1988-1991	Research Assistant, Hearing Research Lab, University of Washington.
1987-1988	Audiologist, Seattle Veteran's Administration Medical Center.
1986-1987	Teaching Assistant, University of Washington.
1985-1986	Research Assistant, Hearing Research Lab, University of Washington.

Professional Memberships

Acoustical Society of America
American Academy of Audiology
American Speech-Language-Hearing Association
Colorado Academy of Audiology

Clinical Certifications and Licensure

Certificate of Clinical Competence-Audiology American Speech-Language-Hearing Association
Colorado State Licensure in Audiology

Editor-reviewed Publications

Arehart, K.H., Kates, J.M, and Souza, P. (2014). The role of metrics in studies of hearing and congition.*ENT & audiology news 23(3), 92-93.*

Peer-reviewed Publications (Student authors are underlined)**.**

Anderson, M.C., Rallapalli, V. Schoof, T., Souza, P. Arehart, K.H. (2018). The use of self-report measures to examine changes in perception in response to fittings using different signal processing parameters. *International Journal of Audiology* 57(11), 809-815.

Kates, J.M., Arehart, K.H. Muralimanohar, R.K., & Sommerfeldt, K. (2018). Externalization of remote microphone signals using a structural binaural model. *Journal of the Acoustical Society of America 143(5), 2666-2677.*

Kates, J.M., Arehart, K.H., Anderson, M.C., Muralimanohar R.K. & Harvey, L.O. (2018). Using objective metrics to measure hearing aid performance. *Ear and Hearing* 39(6) 1165-1175.

Anderson, M.C., Arehart, K.H., & Souza, P.E. (2018). Survey of current practice in the fitting and fine-tuning of common signal-processing features in hearing aids for adults. *Journal of the American Academy of Audiology* 29(2) 118-124.

Muralimanohar, R.K., Kates, J.M. and Arehart, K.H. (2017). Using envelope modulation to explain speech intelligibility in the presence of a single reflection. *J. Acoust. Soc. Am*. Vol. 141(5), EL482-EL487. DOI: 10.1121/1.4983630

Jin, I.K., Kates, J.M., and Arehart, K.H. (2017). Sensitivity of the Speech Intelligibility Index to the assumed dynamic range. *Journal of Speech, Language, Hearing Research*, 60(6) 1674-1680.

Jin, I,K., Kates, J.M., and Arehart, K.H. (2017). Does language matter when using a graphical method for calculating the Speech Intelligibility Index? *Journal of the American Academy of Audiology* 28(2), 119-126.

Croghan, N.B.H., Swanberg, A.M., Anderson, M.C., Arehart, K.H. (2016). Chosen listening levels for music with and without the use of hearing aids. *American Journal of Audiology* 25(3), 161-166.

Shen, J., Anderson, M.C., Arehart, K.H., and Souza, P. (2016). Using cognitive screening tests in audiology. *American Journal of Audiology*, 25(4) 319-331.

Kates, J.M. and Arehart, K.H. (2016).The Hearing-Aid Audio Quality Index (HAAQI). *IEEE-ACM Transactions on Audio Speech and Language* 24 (2) 354-365.

Souza, P.E., Arehart, K.H., Neher, T. (2015). Working memory and hearing aid processing: literature findings, future directions, and Clinical Applications. *Front Psychol*. 2015; 6: 1894. Published online 2015 December 16. doi: 10.3389/fpsyg.2015.01894. PMCID: PMC4679849.

Souza, P.E., Arehart, K.H., Shen, J., Anderson, M.C. and Kates, J.M. (2015). Working memory and intelligibility of hearing-aid processed speech. *Frontiers Psych*., Vol. 6, Article 526. PMID: PMC4423473. DOI: 10.3389/fpsyg.2015.00526.

Jin, I.K. Kates, J.M. Lee, K. and Arehart, K.H. (2015). Band importance function for Korean sentences. *Journal of the Acoustical Society of America* 138(2):938-941. doi: 10.1121/1.4927412

Kates, J.M. & Arehart, K.H. (2015). Comparing the information conveyed by envelope modulation for speech intelligibility, speech quality, and music quality. *Journal of the Acoustical Society of America* 138, 2470-2482. http://dx.doi.org/10.1121/1.4931899

Arehart, K.H. Souza, P.E., Kates, J.M., Lunner, T., and Pedersen, M.S. (2015). Relationship between distortion, hearing loss, and working memory for digital noise reduction. *Ear and Hearing* 36(5), 505-516.

Falk, T.H., Parsa, V., Santos, J.F., Arehart, K.H., Hazrati, O., Huber, R., Kates, J.M., and

Scollie, S. (2015). Objective quality and intelligibility prediction for users of assistive listening devices. *IEEE Sig. Proc. Mag.* 32(2), 114-124.

Souza, P.E., & Arehart, K.H. (2015). Robust relationship between reading span and speech perception in noise. *International Journal of Audiology* 54(10), 705-713.

Croghan, N.B.H., Arehart, K.H., and Kates, J.M. (2014). Music preferences with hearing aids: Effects of signal properties, compression settings, and listener characteristics. *Ear and Hearing*, 35(5), 170-184.

Jin,I.K., Kates, J.M.and Arehart, K.H. (2014). The dynamic range for speech materials in Korean, English, and Mandarin: A cross-language comparison. J Speech Hear. Lang. Research 57, 2024-2030.

Kates, J.M. and Arehart, K.H. (2014), The hearing aid speech perception index (HASPI). *Speech Communication* 65, 75-93.

Kates, J.M., and Arehart, K.H. (2014). The Hearing-Aid Speech Quality Index (HASQI) Version 2. *Journal of the Audio Engineering Society* 62(3), 99-117.

Arehart, K. H.; Croghan, N.B. H.; Muralimanohar, R.K. (2014). Effects of age on melody and timbre perception in simulations of electro-acoustic and cochlear-implant hearing. *Ear & Hearing* 35(2):195-202.

Anderson, M.C., Arehart, K.H., & Kates, J.M. (2014). The effects of noise vocoding on speech quality perception. *Hearing Research* 309, 75-83.

Kates, J.M., Arehart, K.H., & Souza, P.E. (2013). Integrating cognitive and peripheral factors in predicting hearing-aid processing effectiveness. *Journal of the Acoustical Society of America* 134(6), 4458-4469.

Portnuff, C.D. F.; Fligor, B.J. & Arehart, K.H. (2013). New measurement techniques for portable listening devices: Technical Report *Journal of the Audio Engineering Society* 61(10) 749-754.

Souza, P.E., Arehart, K.H., Kates, J.M., Croghan, N.B.H., and Gehani, N. (2013). Exploring the limits of frequency compression. Journal of Speech, Language, Hearing Research 56(5) 1349—1363.

Arehart, K.H., Souza, P.E., Baca, R.L., & Kates, J.M. (2013). Age, hearing loss and cognition: Susceptibility to hearing aid distortion. *Ear and Hearing 34(3), 251-260.*

Portnuff, C.D.F., Fligor, B.J. & Arehart, K.H. (2013). Self-report and long-term field measures of MP3 player use: How accurate is self-report? *International Journal of Audiology* 52, Suppl 1, S33-S40.

Jin, I.K., Kates, J.M., & Arehart, K.H. (2012). The effect of noise envelope modulation on quality judgments of noisy speech. *Journal of the Acoustical Society of America,* 132(4), EL277-EL283.

Croghan, N.B.H., Arehart, K.H., & Kates, J.M. (2012). Quality and loudness judgments for music subjected to compression limiting. *Journal of the Acoustical Society of America,* 132(2), 1177-1188.

Rossi-Katz, J.A. & Arehart, K.H.(2011). Survey of audiological service provision to older adults with cochlear implants. *American Journal of Audiology,* 20(2), 84-89.

Portnuff, C.D.F., Fligor, B., & Arehart, K.H. (2011). Teenage use of portable listening devices: A hazard to hearing? *Journal of the American Academy of Audiology,* 22(10), 663–677.

Arehart, K.H., Kates, J.M., Anderson, M.C., & Moats, P. (2011). Determining perceived sound quality in a simulated hearing aid using the international speech test signal. *Ear and Hearing,* 32(4), 533-535.

Arehart, K.H., Kates, J.M., & Anderson, M.C. (2011). Effects of noise, nonlinear processing, and linear filtering on perceived music quality. *International Journal of Audiology,* 50(3), 177-190.

Arehart, K., Souza, P., Miller, C., & Muralimanohar, R.K. (2011). Effects of age on concurrent vowel perception in acoustic and simulated electro-acoustic hearing. *Journal of Speech,*

Language and Hearing Research, 54(1), 190-210.

Souza, P., Arehart, K.H., Miller, C., & Muralimanohar, R.K. (2011). Effects of age on F0-discrimination and intonation perception in acoustic and simulated electro-acoustic hearing, *Ear and Hearing*, 32(1), 75-83.

Kates, J.M. & Arehart, K.H. (2010). Hearing Aid Speech Quality Index. *Journal of the Audio Engineering Society,* 58(5), 363-381.

Arehart, K.H., Kates, J.M., & Anderson, M.C. (2010). Effects of noise, nonlinear processing and linear filtering on perceived speeh quality. *Ear and Hearing,* 31(3), 420-436.

Anderson, M.C., Arehart, K.H., & Kates, J.M. (2009). The acoustic and perceptual effects of series and parallel processing. *EURASIP Journal on Advances in Signal Processing*, Vol. 2009, Article ID 619805, doi:10.1155/2009/619805.

Rossi-Katz, J. & Arehart, K.H. (2009). Message and talker identification in older adults: Effects of task, distinctiveness of the talkers' voices and meaningfulness of the competing message. *Journal of Speech, Language, Hearing Research,* 52(2), 435 - 453.

Arehart, K.H., Kates, J.M., Anderson, M.C., & Harvey, L.0. (2007). Effects of noise and distortion on speech quality judgments in listeners with normal hearing and with hearing loss. *Journal of the Acoustical Society of America*, 122(2), 1150-1164.

Hansen, J.H.L., Radhakrishnan, V., & Arehart, K.H. (2006). Speech enhancement based on generalized minimum mean square error estimators and masking properties of the auditory system. *IEEE Transactions on Audio, Speech, and Language Processing,* 14(6), 2049-2063.

Rossi-Katz, J. & Arehart, K.H. (2005). Effects of cochlear hearing loss on perceptual grouping cues in competing vowel perception. *Journal of the Acoustical Society of America,* 118(4), 2588-2598.

Kates, J.M. & Arehart, K.H. (2005). Multi-channel dynamic-range compression using digital frequency warping. *EURASIP Journal on Applied Signal Processing,* 2005(18), 3003-3014.

Natarajan, A., Hansen, J.H.L., Arehart, K.H., & Rossi-Katz, J. (2005). An auditory masked threshold based noise suppression algorithm GMMSE-AMT[ERB] for listeners with sensorineural hearing loss. *EURASIP Journal on Applied Signal Processing,* 2005(18), 2938-2953.

Arehart, K.H., Rossi-Katz, J., & Swensson, J. (2005). Double-vowel perception in listeners with cochlear hearing loss: Differences in fundamental frequency, ear of presentation and relative amplitude. *Journal of Speech, Language, Hearing Research,* 48(1), 236-252.

Kates, J.M. & Arehart, K.H. (2005). Coherence and the Speech Intelligibility Index. *Journal of the Acoustical Society of America,* 117(4), 2224-2237.

Arehart, K.H., Hansen, J.H.L., Gallant, S., & Kalstein, L. (2003). Evaluation of an auditory-masked-threshold noise suppression algorithm in normal-hearing and hearing-impaired listeners. *Speech Communication,* 40(4), 575-592.

Stredler-Brown, A. & Arehart, K.H. (2000). Universal newborn hearing screening: Impact on early intervention services. *Volta Review,* 100(5), 85-117.

Arehart, K.H. & Burns, E.M. (1999). A comparison of monotic and dichotic complex-tone pitch perception in listeners with hearing loss. *Journal of the Acoustical Society of America,* 106(2), 993-997.

Arehart, K.H. & Rosengard, P.F. (1999). Psychometric functions for discrimination of two-component complex tones in listeners with normal hearing and listeners with hearing loss. *Journal of the Acoustical Society of America,* 105(4), 2454-2465.

Arehart, K.H. & Yoshinaga-Itano, C. (1999). The role of educators in the early identification of hearing loss. *American Annals of the Deaf,* 144(1), 19-23.

Arehart, K.H., Yoshinaga-Itano, C., Gabbard, S., Stredler-Brown, A., & Thomson, V. (1998). State of the states: Status of universal newborn hearing screening, assessment and intervention in 17 states. *American Journal of Audiology,* 7, 101-111.

Arehart, K.H. (1998). Effects of high-frequency amplification on double-vowel perception in listeners with hearing loss. *Journal of the Acoustical Society of America,* 104(3), 1733-1736.

Scherer, R.C., Arehart, K.H., Guo, C.G., Milstein, C.F., & Horii, Y. (1998). Just noticeable differences for glottal flow waveform characteristics. *Journal of Voice,* 12(1), 21-30.

Arehart, K.H., King, C.A., & Mudgett, K. (1997). Role of fundamental frequency differences in the perceptual separation of competing vowel sounds by listeners with normal hearing and listeners with hearing loss*. Journal of Speech, Language, Hearing Research,* 40(6), 1434-1444.

Arehart, K.H. (1994). Effects of harmonic content on complex-tone fundamental frequency discrimination in hearing-impaired listeners. *Journal of the Acoustical Society of America,* 95(6), 3574-3585.

Burns, E.M., Campbell, S.L., & Arehart, K.H. (1994). Longitudinal measurements of spontaneous otoacoustic emissions in infants. *Journal of the Acoustical Society of America,* 95(1), 385-394.

Keefe, D.H., Bulen, J.C., Arehart, K.H., & Burns, E.M. (1993). Ear canal impedance and reflection coefficient in human infants and adults. *Journal of the Acoustical Society of America,* 94(5), 2617-2638.

Burns, E. M., Arehart, K.H., & Campbell, S.L. (1992). Prevalence of spontaneous otoacoustic emissions in neonates. *Journal of the Acoustical Society of America,* 91(3), 1571-1575.

Arehart, K.H., Burns, E.M., & Schlauch, R.S. (1990). A comparison of psychometric functions for detection in normal-hearing and hearing-impaired listeners. *Journal of Speech and Hearing Research,* 33(3), 433-439.

Dobie, R.A., Hoberg, K.E., & Rees, T.S. (1986). Electrical tinnitus suppression: A double-blind crossover study. *Otolaryngology - Head and Neck Surgery,* 95,319-323.

Invited and Other Talks

Arehart, K.H. Beyond the rules: Individualized hearing-aid fitting. (2018). Invited talk 12th International Workshop on Advances in Audiology 31 May – 2 June 2018, University of Salamanca, Salamanca, Spain.

Arehart, K.H. and Kates, J.M. (2017). Predicting intelligibility and sound quality for noisy speech processed by hearing aids. Invited talk at Palm Springs Hearing Seminars, Palm Springs, CA, Dec 1-2, 2017.

Arehart, K.H. & Souza, P.E. (2017). Individual Differences in Response to Hearing Aid Signal Processing. Invited talk at Palm Springs Hearing Seminars, Palm Springs, CA, Dec 1-2, 2017.

Arehart, K.H., Souza, P. and Kates, J.M. (2017). Quantifying the relationship between listener response and amount of hearing aid signal processing. Invited keynote speaker 4th International Conference on Cognitive Hearing Science for Communication, Linköping University, Sweden, 18-21 June 2017.

Anderson, M.C., and Arehart, K.H. (2017, October). Invited lecture for continuing education for clinical audiolgoists for the Colorado Academy of Audiology. Using Cognitive Screening Tests in Audiology, Denver, C0.

Aging, Cognition and Hearing Aids. Invited speaker for conference on Communication Problems in Older Adults. University of Cologne, Germany. November 9, 2015.

Souza P, Arehart K. (2015). Using frequency lowering: why, when, and for whom? A review of current evidence. Phonak Adult Care Conference, Phoenix, AZ

Effects of hearing aid signal processing on speech perception in older adults. Invited speaker for monthly seminar series at the National Center for Rehabilitative Auditory Research **(**NCRAR**)** of the VA Rehabilitation Research and Development (RR&D) Service. April 2011.

The role of fundamental frequency differences in competing speech perception. Invited

Colloquium, University of Washington, Speech and Hearing Sciences. April 2008.
Arehart, Kathryn H. (10/24/13). Aging, Cognition and Hearing Aids. Seminar given to NIH T32 grant mentors and trainees. Department of Otolaryngology, University of Colorado Anschutz Medical Campus.
Arehart, Kathryn H. (2/28/14). Aging, Cognition and Hearing Aids. Colloquium given to Institute of Cognitive Science, University of Colorado Boulder,
Arehart, K.H. (9/19/14). Cognition and Hearing Aids. Three-hour Tier-1 workshop given at the Colorado Academy of Audiology annual confernece.

Invited Book Review

Moore, Brian C. J. (2008). Cochlear Hearing Loss: Physiological, Psychological and Technical Issues, Second Edition (Wiley Series in Human Communication Science). Invited book review published in the *Journal of the Acoustical Society of America,* 124(5), 2665.

Conference Presentations

Anderson, M., Rallapalli, V. Kates, J., Souza, P. & Arehart, K.H. (2018. Evaluating the impact of methodology on calculating signal modification resulting from hearing aid processing. Presentation at the International Hearing Aid Research Conference, Lake Tahoe, CA August 15-19 2018.
Rallapalli, V. Anderson, M., Kates, J., Sirow, L., Arehart, K.H., & Souza, P. (2018). Quantifying the range of signal modifiication in clinically fit hearing aids. Presentation at the International Hearing Aid Research Conference, Lake Tahoe, CA August 15-19 2018.
Kates, J.M. & Arehart, K.H. (2018). Integrating remote microphone signals with hearing-aid processing. Presenation at the Acoustical Society of America. Minneapolis, MN, May 2018.
Rallapalli V, Welles R, Anderson M, Arehart K, & Souza P. (2018). Hearing aid compression: Product vs. prescription. American Academy of Audiology, Nashville, TN.
Anderson, M.C., Arehart, K.H., Schoof, T., Souza, P.E. (2017). Variability in Hearing Aid Outcomes in Older Adults: Outcome Measures from a Clinical Trial. Presentation at the Aging and Speech Communication Conference, University of South Florida Tampa November, 2017.
Kates, J.M. & Arehart, K.H. (2017). Improving auditory externalization for hearing-aid remote microphones. Special session on Signal Processing for Hearing Aids at the 51st Asilomar Conference on Signals, Systems, and Computers to be held in Pacific Grove, California, October 29 - November 1, 2017 (see http://www.asilomarssc.org).
Jin, I.K., Kates, J.M., Lee, K. & Arehart, K.H. (2016). Sensitivity of the Speech Intelligibility Index to the assumed dynamic range. Poster presentation at the International Hearing Aid Research Conference, Tahoe City, CA, August 2016.
Arehart, K.H., Anderson, M.C., Muralimanohar, R.K., Kates, J.M., & Souza, K.H. (2016). Quantitative benchmarks for the evaluation of signal processing in commercial hearing devices. Poster presentation at the International Hearing Aid Research Conference, Tahoe City, CA, August 2016.
Kates, J.M., Muralimanohar, R.K., & Arehart, K.H. (2016). Improving Externalization in Remote Microphone Systems Poster presentation at the International Hearing Aid Research Conference, Tahoe City, CA, August 2016.
Muralimanohar, R.K., Kates, J.M., Arehart, K.H. (2016). Envelope modulation and intelligibility for speech in a simple model of reverberation. Poster presentation at the International

Hearing Aid Research Conference, Tahoe City CA, August 2016.

Souza, P., Schoof, T., Anderson, M.C., & Arehart, K.H. (2016). Variability in hearing aid outcomes in older adults: Clinical trial design and preliminary results. Poster presentation at the International Hearing Aid Research Conference, Tahoe City, CA, August 2016.

Shen J, Souza P, Anderson M, Arehart K, Kates J, Muralimanohar R. (2015). Can cognitive screening tests explain recognition of distorted speech? American Auditory Society, Scottsdale, AZ. March 2015.

Kates, J.M. & Arehart, K.H. (2014). A unified approach to predicting speech intelligibility and quality. Proc. Int. Hearing Aid Research Conf 2014, Lake Tahoe, CA, Aug 13-17, 2014.

Souza, P.E., Arehart, K.H. Shen, J., Kates, J.M., Muralimanohar, R.K. and Anderson, M.C. (2014). Individual sensitivity to distortion from combined signal processing. Proc. Int. Hearing Aid Research Conf 2012, Lake Tahoe, CA, Aug 13-17, 2014.

Kates, J.M., Arehart, K.H., Souza, P.E., Anderson, M.C., Muralimanohar, R.K. & Portnuff, C.D. (2014). Quantifying processing interactions in hearing aids. Am. Aud. Soc. 2014 Meeting, Scottsdale, AZ, March 6-8, 2014.

Jin, I.K., Kates, J.M., Arehart, K.H. (2014). Dynamic Range of Speech Materials in Korean, English, and Mandarin Am. Aud. Soc. 2014 Meeting, Scottsdale, AZ, March 6-8, 2014.

Souza P., & Arehart K. (2013). The relationship between working memory and communication in noisy environments. Gerontological Society of America, New Orleans, LA. Paper presented to the Gerontological Association of America, November 20-24, 2013.

Souza P, Arehart K, Miyake A, & Flowers S. (2013). Understanding the relationship between working memory and speech in noise. Aging and Speech Communication, Bloomington, IN. (October 6-9).

Kates, J.M. & Arehart, K.H. (2013). SNR is not enough: Noise modulation and speech quality. Paper presented to the 38th International Conference on Acoustics, Speech and Signal Processing, Vancouver, B.C., Canada, May 29.

Goy, H., Pichora-Fuller, M.K., Van Lieshout, P., & Arehart, K. (2013). Quality of older voices processed by hearing aids: Acoustic factors explaining inter-talker differences. Paper presented at the International Congresss of Acoustics Montreal, Canada. (Proceedings of Meetings on Acoustics 19, 060133).

Arehart, K., Souza, P., Lunner, T., Syskind Pedersen, M., & Kates, J. (2013). Relationship between distortion and working memory for digital noise-reduction processing in hearing aids Paper presented at the International Congresss of Acoustics Montreal, Canada. (Proceedings of Meetings on Acoustics 19, 050084).

Muralimanohar, R.M., Kronen, C., Arehart, K., Kates, J., & Pichora-Fuller, M.K. (2013). Quality of voices processed by hearing aids: Intra-talker differences. Paper presented at the International Congresss of Acoustics Montreal, Canada. (Proceedings of Meetings on Acoustics 19, 060112).

Arehart, K.H., Pichora-Fuller, K., Kates, J.M., et al. (2012). Do voices matter? Interactions between hearing aid signal processing and talker characteristics. Paper presented at the International Hearing Aid Conference, Tahoe City, CA.

Croghan, N.B.H., Kates, K.H., Arehart, K.H., & Waterman, K. (2012). Quantifying the acoustic features of recorded music processed through hearing aids. Paper presented at the International Hearing Aid Conference, Tahoe City, CA.

Portnuff, C. D. F., Fligor, B. J., & Arehart, K. H. (2012). Noise dosimetry of MP3 player use: Real-world exposure monitoring to evaluate risk? Paper presented at the Academy Research Conference, part of the AudiologyNow Conference, Boston, MA.

Croghan, N.B.H., Arehart, K.H., & Kates J.M. (2012). Normally hearing listeners' perceptions of dynamic-range compressed music. Paper presented at the annual American Auditory Society meeting, Scottsdale, AZ.

Portnuff, C.D.F., Fligor, B. J., & Arehart, K.H. (2012). New measurement techniques for portable

listening devices: Technical report. Paper presented at the Audio Engineering Society 47th International Conference on Music Induced Hearing Disorders, Chicago, IL.

Souza, P., Arehart, K.H., Kates, J., Croghan, N.B.H., Gehani, N., Muralimanohar, R.K., & Hoover, E. (2011). Age, hearing loss and cognition: Susceptibility to hearing aid distortion. Paper presented at the Conference on Aging and Speech Communication, Indiana University, Bloomington, IN.

Souza, P., Arehart, K.H., Kates, J.M., Muralimanohar, R.K., Croghan, N.B.H., & Hoover, E. (2011). Effects of frequency compression on the intelligibility and quality of speech in noise. Paper presented at the 161st Meeting of the Acoustical Society of America, Seattle, WA.

Arehart, K.H., Souza, P.E., Kates, J.M., Muralimanohar, R.K., Croghan, N.B.H., & Hoover, E. (2011). Effects of age and cognition on perception of frequency-compressed speech. Paper presented at the annual American Auditory Society meeting, Scottsdale, AZ.

Arehart, K.H., Kates, J.M., Anderson, M.C., and Moats, P.M.K. (2010). Sound quality ratings for the International Speech Test Signal (ISTS). Paper presented at the International Hearing Aid Research Conference, Tahoe City, CA.

Anderson, M.C., Arehart, K.H., & Kates, J.M. (2010). The role of temporal fine structure in sound quality perception. Paper presented at the International Hearing Aid Research Conference, Tahoe City, CA.

Anderson, M.C., Arehart, K.H., Kates, J.M., & Croghan, N.B.H. (2010). Sensitivity to temporal fine structure in older adults using the TFS1 test. Paper presented at the Proc. International Hearing Aid Research Conference, Tahoe City, CA.

Kates, J.M. & Arehart, K.H. (2010). Modeling quality judgments of music stimuli reproduced by a simulated hearing aid. Paper presented at the 159th Meeting of the Acoustical Society of America, Baltimore, MD.

Kates, J.M. & Arehart, K.H. (2010). Modeling quality judgments of music stimuli reproduced by a simulated hearing aid. Paper presented at the 159th Meeting of the Acoustical Society of America, Baltimore, MD.

Souza, P. & Arehart, K.H. (2010). Aging, auditory perception and hearing aids. Paper presented at the Academy Research Conference (ARC), American Academy of Audiology, San Diego, CA.

Miller, C., Souza, P., Arehart, K.H., & Anderson, M.C. (2009). Objective and subjective speech perception in noise in older adults. Paper presented at the Conference on Aging and Speech Communication, Indiana University, Bloomington, IN.

Rossi-Katz, J.A. & Arehart, K.H. (2009). Cochlear implantation in older adults: Standards of care. Paper presented at the Conference on Aging and Speech Communication, Indiana University, Bloomington, IN.

Arehart, K.H., Croghan, N., Anderson, M.C., & Muralimanohar, R.K. (2009). Effects of age on melody and timbre perception in simulations of electro-acoustic and cochlear-implant hearing. Paper presented at the Conference on Aging and Speech Communication. Indiana University, Bloomington, IN.

Arehart, K.H., Croghan, N.B.H., Anderson, M.C., & Muralimanohar, R.K. (2009). Music perception using simulated cochlear implant and electro-acoustic systems: Effects of age and processing condition. Paper presented at the Colorado Academy of Audiology, Breckenridge, CO.

Kates, J.M. & Arehart, K.H. (2009). A speech quality metric based on a cochlear model. Paper presented at the 157th Meeting of the Acoustical Society of America, Portland, OR.

Arehart, K.H., Kates, J.M., & Anderson, M.C. (2009). Quality judgments for music signals by normal-hearing and hearing-impaired listeners. Paper presented at the 157th Meeting of the Acoustical Society of America, Portland, OR.

Portnuff, C.D. F., Flilgor, B.J., & Arehart, K.H. (2009). Teenage use of MP3 players: A risk to hearing? Paper presented at the annual American Academy of Audiology meeting, Dallas,

TX.

Souza, P. & Arehart, K.H. (2009). Hearing aid features: Do older people need different things? In *Hearing Care for Adults 2009.* Chicago: Phonak AG. Paper presented at Hearing Care for Adults , Chicago, IL.

Arehart, K.H., Souza, P.E., Miller, C.M., & Muralimanohar, R.K. (2008). Age-related deficits in F0 processing: Use of periodicity and fine-structure cues. Paper presented at the International Hearing Aid Research Conference, Tahoe City, CA.

Anderson, M.C., Arehart, K.H., & Kates, J.M. (2008). Digital signal processing algorithms in hearing aids: Parallel vs. series. Paper presented at the International Hearing Aid Research Conference, Tahoe City, CA.

Kates, J.M. & Arehart, K.H. (2008). A model of sound quality judgments. Paper presented at the International Hearing Aid Research Conference, Tahoe City, CA.

Arehart, K.H., Kates, J.M., Anderson, M.C., & Harvey, L. (2008). Effects of linear, nonlinear and combined linear and nonlinear distortion on perceived speech quality. Paper presented at the International Hearing Aid Research Conference, Tahoe City, CA.

Kates, J.M. & Arehart, K.H. (2008). Speech intelligibility: Audibility or envelope? Paper presented at the annual American Auditory Society meeting, Scottsdale, AZ.

Kates, J.M. & Arehart, K.H. (2007). A time-frequency modulation model of speech quality. Paper presented at the IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, New Paltz, NY.

Rossi-Katz, J. & Arehart, K.H. (2007). Intersubject variability among older adults on speech-in-noise tasks: Auditory and cognitive factors. Paper presented at the Aging and Speech Communication Research Conference, Indiana University, Bloomington, IN.

Arehart, K.H. & Kates, J.M. (2007). Perceptual basis of speech quality judgments. Paper presented at the annual American Academy of Audiology meeting, Denver, CO.

Campbell, J.D., Habegger, N.B., & Arehart, K.H. (2007). Temporally-based pitch perception in cochlear hearing loss. Paper presented at the annual American Academy of Audiology meeting, Denver, CO.

Rossi-Katz, J. & Arehart, K.H. (2007). Age-related changes in competing-speech perception. Paper presented at the annual American Academy of Audiology meeting, Denver, CO.

Kates, J.M. & Arehart, K.H. (2007). Time-frequency modulation and speech quality judgments. Paper presented at the annual American Auditory Society meeting, Scottsdale, AZ.

Kates, J.M., Arehart, K.H., & Muralimanohar, R. (2007). Nonlinear distortion in hearing aids: Relating signal characteristics to auditory perception. Paper presented at the Association for Research in Otolaryngology, Denver, CO.

Kates, J.M., Arehart, K.H., Harvey, L., & Anderson, M. (2006). Predictions of speech quality under conditions of noise and distortion. Paper presented at the 151st Meeting of the Acoustical Society of America, Providence, RI.

Rossi-Katz, J. & Arehart, K.H. (2006). Effects of task complexity on perceptual organization of speech cues by older listeners. Paper presented at the 151st Meeting of the Acoustical Society of America, Providence, RI.

Rossi-Katz, J. & Arehart, K.H. (2005). Separation of competing talkers and older listeners with and without cochler hearing loss. Paper presented at the Aging and Speech Communication Research Conference, Indiana University, Bloomington, IN.

Rossi-Katz, J. & Arehart, K.H. (2005). Effects of age and cochlear hearing loss on the perceptual organization of competing speech. Paper presented at the Biennial International Conference of the VA RR&D National Center for Rehabilitative Auditory Research (NCRAR) titled The Aging Auditory System: Considerations for Rehabilitation, Portland, OR.

Zhang, X., Hansen, J.H.L., Arehart, K.H., & Rossi-Katz. J. (2004). In-vehicle based speech processing for hearing impaired subjects. Paper presented at the 8th International

Conference on Spoken Language Processing, Jeju Island, Korea.
Zhang, X., Hansen, J.H.L., & Arehart, K.H. (2004). Speech enhancement based on a combined multi-channel array with constrained iterative and auditory masked processing. IEEE ICASSP-2004: International Conference on Acoustics, Speech and Signal Processing vol. 1, pp. 229-232.
Natarajan, A., Hansen, J.H.L., Arehart, K.H., & Rossi-Katz, J. (2003). Perceptual based speech enhancement for normal-hearing and hearing-impaired individuals. INTERSPEECH/Eurospeech, pp. 1425-1428, Geneva, Switzerland.
Kates, J.M. & Arehart, K.H. (2004). Using coherence to compute the Speech Intelligibility Index. Paper presented at the International Hearing Aid Research Conference, Tahoe City, CA.
Rossi-Katz, J. & Arehart, K.H. (2004). Contribution of frequency region on the identification of competing vowels in listeners with cochlear hearing loss. Paper presented at the International Hearing Aid Research Conference, Tahoe City, CA.
Kates, J.M. & Arehart, K.H. (2004). Coherence and the Speech Intelligibility Index. Paper presented at the 147th Meeting of the Acoustical Society of America, New York, NY.
Natarajan, A., Hansen, J.H.L., Arehart, K.H., & Rossi-Katz, J. (2003). Perceptual based speech enhancement for normal-hearing and hearing-impaired individuals. Paper presented at INTERSPEECH/Eurospeech; 8th European Conference on Speech Communication and Technology, Geneva, Switzerland.
Arehart, K.H., Natarajan, A., Rossi-Katz, J., & Hansen, J. (2003). Noise suppression algorithm based on the auditory masked threshold in listeners with cochlear hearing loss. Paper presented at the 145th Meeting of the Acoustical Society of America, Nashville, TN. Abstract reference: (2003) *Journal of the Acoustical Society of America, 113(4), 2289.*
Rossi-Katz, J. & Arehart, K.H. (2003). Vowel dominance in competing vowel perception in cochlear hearing loss. Paper presented at annual American Auditory Society meeting, Phoenix, AZ.
Arehart, K.H., & Kates, J.M. (2002). Detection thresholds for frequency-dependent group delay: Implications for digital hearing-aid design. Paper presented at the International Hearing Aid Research Conference , Tahoe City, CA.
Arehart, K.H. & Hansen, J. (2001). Speech enhancement based on aspects of the auditory process. Paper presented at the 141st Meeting of the Acoustical Society of America Conference, Chicago, IL.
Arehart, K.H., Yoshinaga-Itano, C., & Gabbard, S. (2001) Optimizing auditory development in infants with hearing loss and cognitive disability. Paper presented at the Coleman Institute of Cognitive Disabilities Workshop, Aspen, CO.
Arehart, K.H. & Swensson, J. (2000). Effects of relative amplitude and fundamental frequency differences in the perceptual separation of competing voices in listeners with hearing loss. Paper presented at the International Hearing Aid Research Conference, Tahoe City, CA.
Arehart, K.H., Rossi, J., & Swensson, J. (1999). Effects of peripheral masking on competing vowel perception in listeners with hearing loss. Paper presented at the Association for Research in Otolaryngology, St. Petersburg Beach, FL.
Arehart, K.H. (1999). State systems for infant hearing: A reality by year 2000? Instructional Course presented at the American Academy of Audiology National Convention, Miami, FL.
Arehart, K.H. & Burns, E.M. (1998). A comparison of monotic and dichotic musical interval identification in listeners with hearing loss. Paper presented at the 135th Meeting of the Acoustical Society of America, Seattle, WA.
Campbell, S., Arehart, K.H., & Scherer, R.C. (1998). Auditory models of just noticeable differences for glottal flow waveform characteristics. Paper presented at 135th Meeting of the Acoustical Society of America, Seattle, WA.
Arehart, K.H. & Mayne, A. (1998). State of the states revisited: Status of universal newborn hearing screening, assessment and intervention in 17 states. Paper presented at the

annual American Academy of Audiology meeting, Los Angeles, CA.

Arehart, K.H. (1998). State of the states: Systems for universal newborn hearing identification and intervention. Talk presented at the National Infant Hearing Symposium, Denver, CO.

Arehart, K.H. (1998). State of the states: Systems for universal newborn hearing identification and intervention. Paper presented at the Early Hearing Detection and Intervention workshop at Center for Disease Control, Atlanta, GA.

Arehart, K.H. (1998). Otoacoustic emissions testing. Talk presented at workshop sponsored by the Colorado Academy of Audiology, Pediatric Hearing Assessment and Management Series, Aurora, CO.

Arehart, K.H., Yoshinaga-Itano, C., Gabbard, S., Stredler-Brown, A., Thomson, V., & Hayes, D. (1997). State of the states: Status of universal newborn hearing screening, assessment and intervention in 17 states. Paper presented to the annual American Academy of Audiology meeting, Fort Lauderdale, FL.

Arehart, K.H., King, C.A., & McLean, K.M. (1996). Role of fundamental frequency differences in perception of simultaneous vowels by hearing-impaired listeners. Paper presented at the Acoustical Society of America meeting, Indianapolis, IN.

Arehart, K.H. & Fine, P.S. (1996). Discriminability of two-component complex tones by normal hearing and hearing impaired listeners. Paper presented at the 131st Meeting of the Acoustical Society of America, Indianapolis, IN.

Burns, E.M., Keefe, D.H., Campbell, S.L., & Arehart, K.H. (1993). Short term instabilities in spontaneous otoacoustic emissions. Paper presented at the International Congress on Otoacoustic Emissions, Lyon, France.

Arehart, K.H. & Burns, E.M. (1992). Effects of harmonic content on complex-tone frequency discrimination in hearing-impaired listeners. Paper presented to the American Speech-Language-Hearing Association, San Antonio, TX.

Burns, E.M., Arehart, K.H., & Campbell, S.L. (1992). Longitudinal measurements of spontaneous otoacoustic emissions in neonates. Paper presented at the mid-winter meeting of the Association for Research in Otolaryngology, St. Petersburg Beach, FL.

Burns, E.M., Arehart, K.H., & Campbell, S.L. (1991). Prevalence of spontaneous otoacoustic emissions in neonates. Paper presented at the mid-winter meeting of the Association for Research in Otolaryngology, St. Petersburg Beach, FL.

Burns, E.M., Campbell, S.L., & Arehart, K.H. (1990). Categorical perception revisited, yet again: Frequency and frequency ratio resolution by "possessors" and other musicians. Paper presented at the 119th Meeting of the Acoustical Society of America, State College, PA.

Burns, E.M., Campbell, S.L., & Hoberg, K.E. (1989). Is absolute pitch an example of "categorical perception"? Paper presented at the First International Conference on Music Perception and Cognition, Kyoto, Japan.

Burns, E.M., Campbell, S.L., & Hoberg, K.E. (1989). Categorical perception of musical intervals, revisited. Paper presented at the 13th International Conference on Acoustics, Belgrade, Serbia.

Hoberg, K.E., Burns, E.M., & Schlauch, R.S. (1987). Psychometric function slopes for detection in normal-hearing and hearing-impaired listeners. Paper presented to the American Speech-Language-Hearing Association, New Orleans, LA.

Burns, E.M., Hoberg, K.E., Schlauch, R.S., Bargones, J.Y., & Beaman, W.B. (1986). Frequency microstructure of pitch-level functions. Paper presented to the 112th Meeting of the Acoustical Society of America, Anaheim, CA.

Research Funding

GN ReSound 1/01/19-12/31/23

Spatial Metrics
Role: Principal Invesitgator (in collaboration with James Kates)

NIH NIDCD 1R01DC012289- (Arehart PI on sub-contract; Souza PI) 4/01/17-03/31/22
Characterizing variability in hearing aid outcomes among older adults
Role: Principal Investigator on Sub-Contract to University of Colorado Boulder

NIH NIDCD 1R01DC012289-01 (Arehart PI on sub-contract; Souza PI) 4/01/12-03/31/17
Characterizing variability in hearing aid outcomes among older adults
Role: Principal Investigator on Sub-Contract to University of Colorado Boulder

GN ReSound 1/01/15-12/31/18
Integrating Remote and Hearing-Aid Microphones in Rooms
Role: Principal Investigator (in collaboration with James Kates)

GN ReSound 9/01/05-09/01/14
Hearing Aid Research
Role: Principal Investigator (in collaboration with James Kates)

CARTSS Scholar Fund Program 2008-2009
Aging and Cochlear Implants
Role: Principal Investigator

University of Washington Virginia Merrill Bloedel Hearing Research Center 2008
Visiting Scholar (to work with Dr. Pamela Souza
Role: Visiting Scholar

CU-Boulder LEAP Program 2007
Associate Professor Growth Grant
Aging and Speech Communication

CU-Boulder LEAP Program 2007
Clinical Research Station for Hearing Aid Research
Role: Co-Principal Investigator

CU-Boulder Council on Research and Creative Work 2006-2007
Modeling the Effects of Noise and Nonlinear Distorion on Hearing Aid Performance.
Role: Principal Investigator

Centers for Disease Control and Prevention (CDC). UR3/CCU824219 2004-2005
Marion Downs International Hearing Center (PI Yoshinaga-Itano)
Role: Co-Investigator (Hearing Peception and Aging)

Whitaker Foundation
New Speech Enhancement Algorithms for Listeners with Hearing Loss 2001-2004
Based on Studies of Speech In Noisy Environments
Role: Principal Investigator

CU-Boulder Council on Research and Creative Work 2001
Benefits on Speech Enhancement Algorithms: Benefits for Perception
of Speech in Noise by Listeners with Hearing Loss

Role: Principal Investigator

Burroughs Wellcome Fund 2001
Models of Auditory Perception in Listeners with Cochlear Hearing Loss
Travel Grant to be Visiting Scholar at University of Cambridge

Maternal Child Health Bureau 1996-2000
Universal Newborn Hearing Screening (PI Yoshinaga-Itano)
Role: Co-Investigator

TRW 1999-2000
Data Sonification for Detecting and Identifying Digital Communication
Signals in Low SNR Settings
Role: Co-Investigator

National Organization of Hearing Research 1999
Benefits on Speech Enhancement Algorithms: Benefits for Perception
of Speech in Noise by Listeners with Hearing Loss
Role: Principal Investigator

Deafness Research Foundation 1996-1998
Perceptual Sepration of Simultaneous Sounds in Listeners with Hearing Loss
Role: Principal Investigator

CU-Boulder Junior Faculty Development Award 1995
Role: Principal Investigator

Virginia Merill Bloedel Hearing Research Center 1991
University of Washington
Role: Principal Investigator

Sigma Xi
Grants-in-Aid of Research 1991
Role: Principal Investigator

Classroom Teaching

I typically teach two courses each semester, for a total of four three-credit courses per year. The following courses are the ones I have taught on a regular basis over the past several years.

SLHS 6544 Adult Assessment. Course for first-year graduate students in Doctorate of Audiology (AUD) program. Theoretical foundations and clinical applications for hearing assessment of adults. Includes auditory disorders, pure tone audiometry, speech audiometry, physiological measures of middle ear function, and otoacoustic emissions. Students learn about auditory disorders and evidence-based practice and discuss case studies. Typical class sizes: 5 to 12 students.

SLHS 6006 Advanced Hearing Science. Course for AUD and Ph.D. students addressing physical, physiological, and psychological acoustics of both normal and impaired auditory systems. Students are introduced to critical analysis of hearing science literature and pursue projects in which they examine the scientific bases for new clinical tests. Typical class sizes: 4 to 13 students.

SLHS 3106 Hearing Science. Upper-division undergraduate course for students majoring in Speech, Language, Hearing Sciences. Focuses on the three main aspects of the hearing process: sounds in the environment (physical acoustics), sounds encoded within the auditory system (physiological acoustics), and perception of sound (psychological acoustics). Typical class sizes range from 45 to 116 students.

SLHS 2010 Science of Human Communication. Large lower-division lecture course. Discusses how human communication (the process by which a thought is transmitted from the brain of a speaker to the brain of a listener) involves a complex interaction of acoustics, anatomy, physiology, neurobiology, and psychology. This class is comprised mostly of non-majors who take the course to fulfill a portion of their natural sciences for the College of Arts and Sciences core curriculum. Typical class sizes range from 64 to 151 students. I have also taught honors sections of this course, with class sizes ranging from 12 to 17 students.

Teaching Conference Paper

Finan, D., Arehart, K. & Gilley, P. (2009). A content and recruiting course: The science of human communciation. Paper presented at the conference of the American Speech Language Hearing Association, New Orleans, November 2009.

Course and Program Development

Primary author of new degree proposal for the Doctorate of Audiology (AUD) for Department of Speech, Language and Hearing Sciences. Developed course proposals and curriculum for new degree program. First class of students entered August 2006.

Developed and routinely teach the following courses: SLHS 3106 Hearing Science (upper-division course for majors) and SLHS 2010, Science of Human Communication (lower-division course which fulfills University of Colorado Arts and Sciences core requirement for natural science).

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Student Mentorship Ph. D. Students (*committee chair)

*In-Ki Jin: Defended 2014.

*Ramesh Kumar Muralimanohar: Defended April 2018

Julia Campbell. Cross-modal re-organization in children with cochlear implants. Advisor: Anu Sharma.

*Naomi Croghan (2013). Effects of dynamic-range compression on the acoustics and perception of recorded music for listeners with hearing loss.

Amy Nash (Anticipated completion date 2012) Inter-trial coherence as a marker of cortical dys-synchrony in children with auditory neuropathy spectrum disorder (ANSD). Advisor: Anu Sharma.

*Cory Portnuff (2011) Music-induced hearing loss from portable listening devices: Evaluating the factors that influence risk behaviors.

*Melinda Anderson (2010) Effects of envelope and fine structure on sound quality perception.

Kristin Uhler (2008) Longitudinal study of infant speech perception in young cochlear implant candidates: Three case studies. Advisor: Christine Yoshinaga-Itano.

Vickie Rae Thomson (2007) A programmatic analysis of a newborn hearing screening program for evaluation and improvement. Advisor: Christine Yoshinaga-Itano.

*Jessica Rossi-Katz (2006) Effects of task complexity on perceptual organization of speech cues by older listeners.

Sharmistha Sarkar Gray (2006) Speech science modeling for automatic accent and dialect classification. Advisor: John Hansen.
*Deanna Meinke (2005) Detailed DPOAE level/phase maps in normal and noise-damaged human ears. Co-Advisor with Brenda Lonsbury-Martin and Glen Martin.
Xianxian Zhang (2005) Robust speech processing based on microphone array, audio-visual, and frame selection for in-vehicle speech recognition and in-set speaker recognition. Advisor: John Hansen.
Antonia B.L. Johnson (2000) Clear vs. conversational speech: Intelligibility and acoustic characteristics of nonnative (Korean) speakers of English. Advisor: Christine Yoshinaga-Itano.
Christopher Dromey (1995) Global and component-specific modifications of speech: A multi level study. Advisor: Lorraine Ramig.
Michael Allan Grim (1995) An evaluation of the efficacy of a binaural digital hearing aid designed to facilitate the perception of speech in noise. Advisor: Christine Yoshinaga-Itano.

Student Mentorship Au.D. Capstone Students (*committee chair)

*Chelsea Heitzmann(2016)
*Liz Falconer (2016)
*Kristin Stromsted (2015)
*Leticia Nunez (2015)
*Anne Swanberg (2015)
*Jessica Jones (2014)
*Deanna Iff (2012) Preferred listening levels of music through hearing aids.
*Krista Waterman (2012) Music and hearing aids.
*Laura Greer (2012) Sound quality with continuous versus interrupted noise.
*Carly Lang (2011-2012) An assessment of outcome measures for the sound and hearing health workshop.
*Nicole Cyr (2011-2012) Evidence on cognition and hearing aid outcomes, and its application in hearing aid technology.
*Bryan McDonald (2011) Evaluation of frequency compression and frequency transposition on KEMAR.
*Kori Nitta (2010) List equivlancy of CNC word lists.
*Peter Moats (2010) Sound quality ratings for the International Speech Test Signal.

Student Mentorship Masters Thesis Students (*committee chair)

*Ramesh Kumar Muralimanohar (2010) Frequency domain bin-normalized LMS feedback cancellation in hearing aids. Co-advisor: Jim Kates.
Kristen R. Anderson Foery (2008) Triggering the Lombard effect: Examining automatic thresholds. Advisor: Donald Finan.
Amit Das (2007) Rover based constrained iterative speech enhancement. Advisor: John Hansen
Sepideh Baghaii (2004) A study on accent perception and analysis of pitch structure for accent classification. Advisor: John Hansen.
*Ajay Natarajan (2003) Perceptual based speech enhancement for normal-hearing and hearing-impaired individuals. Co-advisor: John Hansen.
*Jessica A. Rossi (1999) The effects of fundamental frequency differences in monotic and dichotic double vowel identification in listeners with normal hearing and listeners with hearing loss.

*Julie Swensson (1999) The effects of amplitude differences on double vowel identification in listeners with normal hearing and listeners with hearing loss.
*Kelly McLean-Mudgett (1996) The effect of fundamental frequency differences on a masked vowel identification task for people with normal-hearing and people with hearing loss.
*Catherine Arriaga King (1996) Use of fundamental frequency difference cues for double vowel identification by listeners with normal hearing and a sensorineural hearing loss.
*Peninah Fine Rosengard (1995) Pitch perception of complex tones in normal-haring and hearing impaired persons.

Student Mentorship Senior Honors Thesis Students (*committee chair)

*Elizabeth McNichols (2018). Music Perception in Simulations of Cochlear Implant Listening
*Caleb Kronen (2014). User-adjusted settings for music listening with a simulated hearing aid app: Effects of dynamic range compression, data-rate and genre.
Miranda Aragon (2012) Applying the LENA device to Spanish-speaking families with deaf or hard of hearing children. Advisor: Christine Yoshinaga-Itano.
Melissa Coyne (2012) Insights into discourse by neurologically normal participants and participants with right and left hemisphere brain damage. Advisor: Gail Ramsberger.
Delora Abedzadeh (2011) ERP correlates of priming in a recognition memory task. Advisor: Tim Curran.
*Jessica Elliott (2011) The relationship between acceptable noise level and sound quality.
Lauren Janich (2011) The effects of word form rehearsal and language experience on fast mapping in young bilingual adults. Advisor: Pui Fong Kan.
Danielle Kemp (2010) Adjective gender agreement in situations of language contact and specific language impairment. Advisor: Pui Fong Kan.
Isa Down (2010) The effects of speech/voice therapy (LSVT®) post-neurosurgical intervention on intelligibility in individuals with Parkinson's disease. Advisors: Neeraja Sadagopan and Lorraine Ramig.
Jenny Chang (2010) Cultivating a bicultural identity: The effects of parental verbal and nonverbal communication on the self-concept of Chinese-American young adults. Advisors: Brenda Schick and Pui Fong Kan.
*Alexandra Allen (2007-2008) The role of voice pitch differences in competing sentence perception in listeners with normalhearing and listeners with a hearing loss.

Student Mentorship Undergraduate Research Opportunities Program (UROP)

Elizabeth McNichols (2018). Music Perception in Simulations of Cochlear Implant Listening
Kelsey Wade (2015). Externalization of sounds.
Caleb Kronen (2012). Interactions between voice characteristics of older adults and signal processing algorithms: Implications for hearing aid sound quality.
Jessica Elliot (2010-2011) The relationship between acceptable noise level and sound quality.
Alexandra Allen (2007-2008) The role of voice pitch differences in competing sentence perception in listeners with normal hearing and listeners with a hearing loss.
Kassi Longway (2000) Frequency resolution.
Danielle M. Thompson (1996-1997) Effects of attention and memory on auditory and visual frequency discrimination.
Nichole Kingham and Darby Hart (1996-1997) Auditory perception in normal-hearing and hearing-impaired listeners.

Student Mentorship High School Students

Andrea Lin (2015-2016). Student project placed in regional level science competitions.
Madeline Goosman (2014-2015). Effects of vocoding on Mandarin tone recognition. Student places in local and state science competitions.
Kathryn McClain (2010-2011) Audiovisual coactivation in noise. Student project placed as semifinalist in national science competitions (Intel, Siemens).
Kaylie White (2009) Music perception for simulated cochlear implants. Student placed in district level science competition.

Nomination for Teaching Award

Graduate students submitted nomination for "Outstanding Graduate Stduent Mentor Faculty Award" Spring 2011.

Service/Outreach Grants

CU-Boulder Outreach Grant 2008-2010
Sound, Hearing and Hearing Health Workshop for K-12 educators.
Outreach to Colorado educators to become trained in teaching about sound, hearing and hearing health, with goal of teaching children about hearing and hearling loss prevention. Outreach includes full-day workshops for teachers and individualized consultation to teachers.
Role: Principal Investigator
Total Award: $16,000

CU-Boulder Outreach Grant 2004-2005; 2006-2007; 2007-2008
Sound, Hearing and Hearing Health Workshop for K-12 educators.
Outreach to Colorado educators to become trained in teaching about sound, hearing and hearing health, with goal of teaching children about hearing and hearing loss prevention. Outreach includes full-day workshops for teachers and individualized consultation to teachers.
Role: Principal Investigator
Total Award: $15,000 ($5000 per year for three years)

Service to Profession

Technical co-chair (Elected), International Hearing Aid Conference (for conference in 2014).
Associate Editor at large, Ear and Hearing, 2013-present.
Steering Committee, International Hearing Aid Conference, 2010-present.
Member, Research Committee, American Academy of Audiology, 2009-2012.
Associate Editor, Journal of Speech, Language and Hearing Research, 2008-2011.
Member, Technical Committee, Physiological and Psychological Acoustics, Acoustical Society of America, 2006-2009.
Publications Board, American-Speech-Language-Hearing Association, 2004-2007.
Member Dept. of Veteran Affairs Rehabilitation Research & Development Scientific Review Panel Audiology 2005, 2006, 2007.
Ad-hoc reviewer for Journal of the Acoustical Society of America, Journal of Speech, Language, Hearing Science, Ear and Hearing, Journal of the American Academy of Audiology, Neuroscience, International Journal of Audiology.

Service to College of Arts and Sciences

Member of Internal Review Committee, Program Review, Germanic and Slavic Languages and Literaure, 2015-2016.
Member, Arts and Sciences Core Curriculum Revsion Committee (2015-present)
Member of Internal Review Committee, Program Review, Insitute of Cognitive Science, 2012.
ASSETT Advisory committee, 2009-present.
Member of Undergraduate Honors Council, 2008-present.
Pre-health Advisory Committee, 2005-2018.
Faculty mentor in Leadership and Advancement program, 2003-2007.
Arts and Sciences Budget Committee, 1999-2000.
Arts and Science Strategic Planning Task Force, 2000.
Arts and Science Council, 1998-1999, 1999-2000.
Dean's Advancement Fund Committee Chair, 1998-1999, 1999-2000.
Advisor for Freshman Orientation, 1996, 1997.

Service to Speech Language Hearing Sciences Department

Member of Merit Committee (2015); Member and Chair of Merit Committee (2016, 2017, 2018).
Coordinator of Undegraduate Honors Thesis for SLHS.
Chair, AUD committee 2011-present.
Chair, Research Committee, 2008-2011.
Undergraduate Studies Coordinator, 2008-2011.
Chair, Search Committee for new assistant professor in SLHS, 2006-07.
Chair, Search Committee for new senior faculty member in SLHS, 2005-2006.
Chair, SLHS Department Merit Committee, 2005-2007.
SLHS Executive Committee Member 2004-2006, 2008-2011.
AUD Committee member, 2006-2011.
Personnel Committee, 1992-present
Course Development for New Undergraduate and Graduate Curricula, 1994.
Natural Science Core Course Development Committee, 1997.
Head of Audiology, 1993-1999, 2001-2006.

Service to Community

Workshop for K-12 teachers in Colorado on teaching hearing-loss prevention to K-12 students. 2005, 2007, 2008, 2009, 2010, 2012, 2013
Spring 2009: Lectures at local high school for advanced placement physics classes. Spring 2009, 2010, 2014.
Physics of sound workshop presented in Planetarium "Sound Lab" to three third-grade classes from Bear Creek Elemenatry School, 2006, 2007.
Guest speaker at Boulder/Denver chapter of Self Help for Hard of Hearing People. Presentation entitled "Inner Ear Hearing Loss and Understanding Speech", May 1999.