

Alexander L. Francis

Curriculum Vitae

Spring, 2024

Speech, Language & Hearing Sciences
Purdue University
Lyles-Porter Hall
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West Lafayette, IN 47907
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francisa@purdue.edu

EDUCATION

Ph.D. in Linguistics and in Psychology (with Distinction), The University of Chicago, 1999
Dissertation Title: “Perceptual Learning, Attention, and Phonetic Categorization”
Committee: Howard C. Nusbaum, Karen L. Landahl (co-supervisors), David McNeill,
Terry Regier, Janellen Huttenlocher (reader)
M.A. in Linguistics, The University of Chicago, June, 1993
B.A. in Linguistics (with Honors), University of Illinois at Urbana-Champaign, 1991

ACADEMIC EMPLOYMENT

Professor, Dept. of Speech, Language & Hearing Sciences, Purdue University, August 2022–
present
Associate Professor, Dept. of Speech, Language & Hearing Sciences, Purdue University, August
2008–2022
Assistant Professor, Dept. of Speech, Language & Hearing Sciences, Purdue University, August
2002–2008
Post-doctoral Fellow, Dept. of Speech and Hearing, University of Hong Kong, August, 1999–
July, 2002
Research Assistant (Part-time), Dept. of Psychology, University of Chicago, 1995–1999
Graduate Research Assistant, C-3 Group (Computer Research and Applications), Los Alamos
National Laboratories, Summer 1993

HONORS AND AWARDS

Favorite Faculty Award for Most Distinguished Faculty for Research from the Purdue University
Residences. Spring 2023
Award for Exceptional Teaching and Instructional Support during the COVID-19 Pandemic,
Purdue University Teaching Academy and Office of the Provost
Appointed Fellow of the Acoustical Society of America, 2020 “For contributions to
understanding of cognitive-linguistic processes in speech perception, and mentorship of future
scientists”

HONORS AND AWARDS (continued)

Fellowship for Study in a Second Discipline (Psychophysiology), Purdue University, August 2014-May 2015

Student Paper Award (Speech Communication), 136th meeting of the Acoustical Society of America, Norfolk VA, 1998

Dewey Lecture Fellowship, Social Sciences Collegiate Division, The University of Chicago, 1998-1999

Alternate recipient of the Fujimura Fellowship to the 1993 Linguistic Summer Institute at The Ohio State University

National Science Foundation New Graduate Student Fellowship Honorable Mention, 1992

Four-year, Merit Based Graduate Fellowship (Unendowed Funds), University of Chicago, 1991

FUNDED RESEARCH

Synergistic Connections Between Life and Social Sciences Award. Social Context and Seeking Treatment for Hearing Loss. PI (with Melissa M. Franks). \$9,994. Purdue College of HHS Healthy Lifestyles and Vital Longevity (HLVL) Signature Area. December 1, 2022 – November 30, 2023.

Listening Demand, Balance, and Fall Risk in Older Adults. PI (with Melissa Newell, Jeffery Haddad, Shirley Rietdyk, Sharon Christ). \$24,767. Clifford B. Kinley Trust. May 1, 2022 – November 30, 2023.

Spring 2020 CEREBBRAL Pilot Grant Funding. PI (with Melissa Newell, Jeffery Haddad, Shirley Rietdyk, Dongjuan Xu). Center for Research on Brain, Behavior, and Neurorehabilitation. \$5,000. July 1, 2020-June 30, 2021.

NIH New R01 Program Award: Does effortful listening induce physiological stress? PI. Purdue University Office of Research and Partnerships and Office of the Provost. \$29,928. December 1, 2015-June 30, 2017.

Provost's Fellowship for Study in a Second Discipline: Psychophysiology of Listening Effort. PI. Purdue University. \$7,000. August 15, 2014 – May 15, 2015.

Do older adults attend to speech differently than younger adults? PI (with Joshua Alexander). Kinley Foundation Trust. \$20,000. May 1, 2012 – July 31, 2013.

Effects of neurocognitive training on regional patterns of brain metabolism in older adults with hearing impairment. PI. Indiana Clinical and Translational Sciences Institute. Pilot funding for use of core facilities. \$9,600. January 1, 2010-December 31, 2011.

FUNDED RESEARCH (continued)

Selective Attention and Perceptual Learning of Speech. NIH R03DC006811. National Institutes of Health, National Institute on Deafness and Other Communication Disorders (NIH NIDCD), June 1, 2004 – November 30, 2008, \$150,000.

Electrophysiological indices of perceptual restoration of filtered and noise-masked vowels. Co-PI (with Ravi Krishnan). Purdue University Research Incentive Award, September 2004 – August 2005, \$1000.

The role of tonal context in the learning of lexical tone categories by speakers of tonal and nontonal languages. Co-PI (with Valter Ciocca). Hong Kong Research Grants Council, January 2004 – December, 2005. HK \$707,000 (approx. US \$90,640).

Effects of linguistic experience on attention to tones. Co-PI (with V. Ciocca and L. Ma). Hong Kong University Research Grants Committee Seed Funding for Basic Research, February 2001 – March, 2002. HK \$120,000 (approx. US \$15,000).

FUNDING APPLIED FOR

Auditory, vestibular, and cognitive mechanisms linking hearing loss to fall risk in older adults. PI (with Sarah Burgin, Shirley Rietdyk, Jeff Haddad, Sharon Christ, Melissa Newell). \$2,449,286. R01 submitted to NIH-NIA, February 5, 2023. Not funded.

Shared user system for mobile/ambulatory psychophysiology. PI. \$69,790.98. Purdue Offices of the Executive Vice President for Research and Partnerships and the Provost and Executive Vice President for Academic Affairs and Diversity, November 1, 2022. Not funded.

Does hearing aid use reduce risk of falling in middle aged and older adults? PI. \$50,000. Hearing Health Foundation. Submitted February 26, 2021. Not funded.

Auditory, Vestibular, and Cognitive Contributions to Balance and Fall Risk in Older Adults. PI. \$1,250,000. R01 submitted to NIH-NIDCD, October 5, 2020. Not funded.

Attentional and affective psychophysiology for characterizing and treating misophonia. PI (with Daniel Foti and Anne Sommer), \$298,237. REAM Foundation, April 11, 2019. Not funded.

Why are hearing aids left in the drawer: Behavioral and psychophysiological predictors of hearing aid satisfaction. R01 submitted to NIH-NIDCD, February 5, 2018. Not funded.

Does working memory limit speech perception in spatially separated masking noise? PI. NIDCD/NIA, R21. \$275,000. Scored (65, 50th %tile) Not funded.

Effects of age and hearing on weighting of acoustic cues to English speech sounds. PI. Kinley Trust. \$20,000. Not funded.

FUNDING APPLIED FOR (continued)

Collision Events and Neurophysiologic Trauma in High School Athlete Concussion. Co-I (T. Talavage, PI; with Leverenz, Bouman, Nauman). National Institutes of Health NINDS/NICHHD/NIBIB, R01. \$ 2,494,164. Not funded.

Effects of neurocognitive training on regional patterns of brain metabolism in older adults with hearing impairment. PI. Clifford Kinley Trust. \$20,000. Not Funded.

Cognitive factors in speech perception. PI. National Institutes of Health, National Institute on Deafness and Other Communication Disorders (NIH NIDCD). R01. \$2,266,719. Not funded.

Enhancing hearing outcomes with neurocognitive training. Co-PI (with T. Talavage, Purdue; D. Pisoni, IU). National Institutes of Health Office of the Director (NIH-OD). R01. \$686,780. Not funded.

Effects of age and dementia on perception of speech in competing speech. PI. Indiana Alzheimer's Disease Center. July 1, 2009 – June 30, 2010. \$32,000. Not funded.

Selective attention and the acquisition of the tense/lax contrast in English. PI. National Science Foundation. June 1, 2005 – May 31, 2008. \$269,137. Not funded.

PUBLICATIONS

REFEREED JOURNAL ARTICLES

Alvar, A. & Francis, A.L. (2024). Effects of background noise level on autonomic arousal (skin conductance level). *JASA Express Letters*, 4(1), 013601. DOI: 10.1121/10.0024272

Exner, A. H., Francis, A. L., MacPherson, M. K., Darling-White, M., & Huber, J. E. (2023). The Effects of Speech Task on Lexical Stress in Parkinson's Disease. *American Journal of Speech-Language Pathology*, 1-17. DOI: 10.1044/2022_AJSLP-22-00185

Drown, L., Philip, B., Francis, A. L., & Theodore, R. M. (2022). Revisiting the left ear advantage for phonetic cues to talker identification. *The Journal of the Acoustical Society of America*, 152(5), 3107-3123. DOI: 10.1121/10.0015093

Francis, A.L. (2022). Adding noise is a confounded nuisance. *The Journal of the Acoustical Society of America*, 152(3), 1375-1388. DOI: 10.1121/10.0013874

Love, J., Sung, W., & Francis, A. L. (2021). Psychophysiological responses to potentially annoying heating, ventilation, and air conditioning noise during mentally demanding work. *The Journal of the Acoustical Society of America*, 150(4), 3149-3163. DOI: 10.1121/10.0006383

Keehn, B., Kadlaskar, G., Bergmann, S., McNally Keehn, R., & Francis, A. (2021). Attentional disengagement and the locus coeruleus – norepinephrine system in children with autism spectrum disorder. *Frontiers in Integrative Neuroscience*. DOI: 10.3389/fnint.2021.716447

REFEREED JOURNAL ARTICLES (continued)

- Xu, D., Newell, M., & Francis, A.L. (2021). Fall-related injuries mediate the relationship between self-reported hearing loss and mortality in middle-aged and older adults. *The Journals of Gerontology Series A: Medical Sciences*, 76(9), e213–e220.
DOI: 10.1093/gerona/glab123
- Francis, A. L., Bent, T., Schumaker, J., Love, J., & Silbert, N. (2021). Listener characteristics differentially affect self-reported and physiological measures of effort associated with two challenging listening conditions. *Attention, Perception, & Psychophysics*, 83(4), 1818-1841. DOI: 10.3758/s13414-020-02195-9
- Law, W.L., Dmitrieva, O., & Francis, A.L. (2021). Language attitudes modulate phonetic interactions between languages in bilingual speakers in diglossic settings. *Linguistic Approaches to Bilingualism*, 11(3), 289-322.
- Francis, A.L. & Love, J. (2020). Listening Effort: Are we measuring cognition, affect, or both? Invited review article, *WIREs Cognitive Science*. e1514.
- Xu, D., & Francis, A.L. (2019) Psychological distress mediates the relationship between hearing impairment and cardiovascular disease. *Journal of Speech, Language and Hearing Research*; 62(8), 2872-2881.
- Keehn, B., Kadlaskar, G., McNally Keehn, R., & Francis, A. L. (2019). Auditory attentional disengagement in children with autism spectrum disorder. *Journal of Autism and Developmental disorders*, 49(10), 3999-4008.
- Francis, A.L., & Oliver, J. (2018). Psychophysiological measurement of affective responses during speech perception. *Hearing Research*, 369, 103-119.
- Francis, A.L., Tigchelaar, L.J. Zhang, R., & Zekveld, A. (2018). Effects of second language proficiency and linguistic uncertainty on recognition of speech in native and non-native competing speech. *Journal of Speech, Language and Hearing Research*, 61(7), 1815-1830.
- Strauss, D.J. & Francis, A.L. (2017). Toward a taxonomic model of attention in listening effort. *Cognitive, Affective, & Behavioral Neuroscience*, 17(4), 809-825.
- Francis, A.L., MacPherson, M.K., Chandrasekaran, B., & Alvar, A.M. (2016). Autonomic nervous system responses during perception of masked speech may reflect constructs other than subjective listening effort. *Frontiers in Psychology: Cognitive Hearing Mechanisms of Language Understanding: Short- and Long-term Perspectives*, 7(263), 1-15.
- Llanos, F. & Francis, A.L. (2016). The effects of language experience and speech context on the phonetic accommodation of English-accented Spanish voicing. *Language & Speech*, 60(1), 3-26.

REFEREED JOURNAL ARTICLES (continued)

- Dmitrieva, O., Llanos, F., Shultz, A.A., & Francis, A.L. (2015). Phonological status, not voice onset time, determines the acoustic realization of onset f0 as a secondary voicing cue in Spanish and English. *Journal of Phonetics*, 49, 77-95.
- Lin, M. & Francis, A.L. (2014). Effects of language experience and expectations on attention to consonants and tones in English and Mandarin Chinese. *Journal of the Acoustical Society of America*, 136(5), 2827-2838.
- Llanos, F., Dmitrieva, O., Shultz, A.A., & Francis, A.L. (2013). Auditory enhancement and second language experience in Spanish and English weighting of secondary voicing cues. *Journal of the Acoustical Society of America*, 134(3), 2213-2224.
- Roberts, F. & Francis, A.L. (2013). Identifying a temporal threshold of tolerance for silent gaps after requests. *Journal of the Acoustical Society of America*, 133(6), EL471-EL477.
- Shultz, A.A., Francis, A.L., & Llanos, F. (2012). Differential cue weighting in perception and production of consonant voicing. *Journal of the Acoustical Society of America*, 132(2), EL95-EL101.
- Cristià, A., McGuire, G., Seidl, A., & Francis, A. (2011). Effects of the distribution of cues on infants' perception of speech sounds. *Journal of Phonetics*, 39, 388-402.
- Kondaurova, M.V. & Francis, A.L. (2010). The role of selective attention in the acquisition of English tense and lax vowels by native Spanish listeners: Comparison of three training methods. *Journal of Phonetics*, 38(4), 569-587.
- Zhang, Y. & Francis, A.L. (2010). The weighting of vowel quality in native and non-native listeners' perception of English lexical stress. *Journal of Phonetics*, 38(2), 260-271.
- Francis, A.L. (2010). Improved segregation of simultaneous talkers differentially affects perceptual and cognitive capacity demands for recognizing speech in competing speech. *Attention, Perception and Psychophysics*, 72(2), 501-516.
- Francis, A.L., & Nusbaum, H.C. (2009). Effects of intelligibility on working memory demand for speech perception. *Attention, Perception and Psychophysics*, 71(6), 1360-1374.
- Finneran, D., Francis, A.L., & Leonard, L. (2009). Sustained attention in preschool-age children with specific language impairment. *Journal of Speech, Language and Hearing Research*, 52, 915-929.
- Kondaurova, M.V., & Francis, A.L. (2008). The relationship between native allophonic experience with vowel duration and perception of the English tense/lax vowel contrast by Spanish and Russian listeners. *Journal of the Acoustical Society of America*, 124(6), 3959-3971.

REFEREED JOURNAL ARTICLES (continued)

- Francis, A.L., Kaganovich, N., & Driscoll-Huber, C.J. (2008). Cue-specific effects of categorization training on the relative weighting of acoustic cues to consonant voicing in English. *Journal of the Acoustical Society of America*, 124 (2), 1234-1251.
- Zhang, Y., Nissen, S.L., & Francis, A.L. (2008). Acoustic characteristics of English lexical stress produced by native Mandarin speakers. *Journal of the Acoustical Society of America*, 123(6), 4498-4513.
- Francis, A.L., Ciocca, V., Ma, L., & Fenn, K. (2008). Perceptual learning of Cantonese lexical tones by tone and non-tone language speakers. *Journal of Phonetics*, 36, 268-294.
- Tong, Y., Francis, A.L. & Gandour, J.T. (2007). Perceptual processing dependencies between segmental and suprasegmental features of a tone language. *Language and Cognitive Processes*, 23(5), 689-708.
- Francis, A.L., Nusbaum, H.C., & Fenn, K. (2007). Effects of training on the acoustic phonetic representation of synthetic speech. *Journal of Speech, Language and Hearing Research*, 50(6), 1445-1465.
- Francis, A.L., Ciocca, V., Wong, V.K.M., & Chan, J.K.L. (2006). Is fundamental frequency a cue to aspiration in initial stops? *Journal of the Acoustical Society of America*, 120(5), 2884-2896.
- Kaganovich, N., Francis, A.L., & Melara, R.D. (2006). Electrophysiological evidence for early interaction between talker and linguistic information during speech perception. *Brain Research*, 1114, 161-172.
- Francis, A.L., & Driscoll, C.J. (2006). Training to use voice onset time as a cue to talker identification induces a left ear/right hemisphere processing advantage. *Brain and Language*, 98, 310-318.
- Xu, Y., Gandour, J.T., & Francis, A.L. (2006). Effects of language experience and stimulus complexity on the categorical perception of pitch direction. *Journal of the Acoustical Society of America*, 120(2), 1063-1074.
- Roberts, F., Francis, A.L., & Morgan, M. (2006). The interaction of inter-turn silence with prosodic cues in listener perception of 'trouble' in conversation. *Speech Communication*, 48, 1079-1093.
- Francis, A.L., Ciocca, V.C., Wong, N.K.U., Leung, W.H.Y., & Chu, P.C.Y. (2006). Extrinsic context affects perceptual normalization of lexical tone. *Journal of the Acoustical Society of America*, 119(3), 1712-1726.
- Francis, A.L., Ciocca, V.C., & Ng, B.K.C. (2003). On the (non)categorical perception of lexical tones. *Perception & Psychophysics*, 65(6), 1029-1044.

REFEREED JOURNAL ARTICLES (continued)

- Francis, A.L. & Ciocca, V. (2003). Stimulus presentation order and the perception of lexical tones in Cantonese. *Journal of the Acoustical Society of America*, 114(3), 1611-1621.
- Francis, A.L., & Ho, D.W.L. (2003). Acquisition of three spoken languages by a child with a cochlear implant. *Cochlear Implants International*, 4(1), 31-47.
- Francis, A.L., Ciocca, V., & Yu, J.M.C. (2003). Accuracy and variability of acoustic measures of voicing onset. *Journal of the Acoustical Society of America*, 113(2), 1025-1032.
- Whitehill, T.L., Francis, A.L., & Ching, C. K.-Y. (2003). Perception of stop placement by children with cleft palate and posterior placement. *Journal of Speech, Language & Hearing Research*, 46, 451-461.
- Ciocca, V., Francis, A.L., Aisha, R., & Wong, L. (2002). The perception of Cantonese lexical tones by prelingually deaf cochlear implantees. *Journal of the Acoustical Society of America*, 111(5), 2250-2256.
- Francis, A.L., & Nusbaum, H. C. (2002). Selective attention and the acquisition of new phonetic categories. *Journal of Experimental Psychology: Human Perception and Performance*, 28(2), 349-366.
- Francis, A. L., Baldwin, K., & Nusbaum, H. C. (2000). Effects of training on attention to acoustic cues. *Perception and Psychophysics*, 62(8), 1668-1680.
- Francis, A. L., & Nusbaum, H. C. (1999). The effect of lexical complexity on intelligibility. *International Journal of Speech Technology*, 3, 15-25.
- Nusbaum, H. C., Francis, A. L., & Henly, A.S. (1995). Measuring the naturalness of synthetic speech. *International Journal of Speech Technology*, 1, 7-19.

BOOK CHAPTERS

- Lin, M. & Francis, A.L. (2021). The effort of listening to non-native accented English depends on talker fluency and listener working memory capacity. In Wayland, R. (Ed.). *Second Language Speech Learning: Theoretical and Empirical Progress* (pp. 399-417). Cambridge: Cambridge University Press. doi:10.1017/9781108886901
- Cristià, A., Seidl, A., and Francis, A. (2011). Phonological features in infancy. In G. N. Clements and R. Ridouane (Eds.), *Where do features come from? The nature and sources of phonological primitives* (pp. 306-326). Elsevier.
- Francis, A. L., & Nusbaum, H. C. (1999). Evaluating the Quality of Synthetic Speech. In D. Gardner-Bonneau (Ed.), *Human Factors and Voice Interactive Systems* (pp. 63-97). Boston: Kluwer Academic Publishers.

CONFERENCE PROCEEDINGS

Bhamborae, M. J., Flotho, P., Mai, A., Schneider, E. N., Francis, A. L., & Strauss, D. J. (2020, July). Towards Contactless Estimation of Electrodermal Activity Correlates. In *2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)* (pp. 1799-1802). IEEE.

Schneider, E.N., Bernarding, C., Francis, A.L., Hornsby, B.W., & Strauss, D.J. (2019). A quantitative model of listening related fatigue. *9th International IEEE EMBS Conference on Neural Engineering (NER)*, 619-622.

Love, J. Sollman, L., Niehl, A., & Francis, A.L. (2019). Physiological orienting response, noise sensitivity, and annoyance from irrelevant background sound. *Proceedings of Meetings on Acoustics*, 35(1), 040002.

Kondaurova M.V., & Francis A.L., (2008). Training to ignore vs. training to attend while learning a foreign phonetic contrast. *Proceedings from the Annual Meeting of the Chicago Linguistic Society*, 44 (1), 169-177. Chicago Linguistic Society.

Ciocca, V., Rani, A., Francis, A., & Wong, L. (2000). Can Cantonese children with cochlear implants perceive lexical tones?" *Proceedings of the 6th International Conference on Speech and Language Processing*. Beijing, China.

Nusbaum, H. C., Francis, A. L., & Luks, T. L. (1997). Speech Perception: A Special Mechanism or a Specialized Cognitive Process? In K. Singer, R. Eggert, and G. Anderson (Eds.), *Proceedings of the 33rd Regional Meeting of the Chicago Linguistic Society (CLS 33)*, vol. 2, *The Parasession on Phonetics* (pp. 415-434). Chicago: Chicago Linguistic Society. 1997.

Francis, A. L., & Nusbaum, H. C. (1996). Paying attention to speaking rate. *Proceedings: International Conference on Speech and Language Processing (ICSLP) '96*, vol. 3, SaA2L2.

REVIEWS

Francis, A. L. (1998). *Voice Recognition* by Richard L. Klevans and Robert D. Rodman. *International Journal of Speech Technology*, 2:3, 249-253.

Francis, A. L., & Jones, E. (1996). Phonetics and phonological theory. *Language and Communication*, 16, 381-391.

Francis, A. L. (1994). Parser 1.0: An elementary parsing program for the DOS environment. *Computers and the Humanities*, 27, 406-409.

INVITED PRESENTATIONS

Francis, A.L. (2021). *Listening Effort: What is it, how do we measure it, and why does it matter?* Invited lecture at Hearing4All Summer School. Presented online, July 8–9, 2021

INVITED PRESENTATIONS (continued)

Francis, A.L. (2019). Listening Effort: How it affects your Patients' Lives and How to Measure it. Talk invited as part of a research topic, *ASHA Convention*, Nov. 21-23, Orlando, FL.

Francis, A.L. (2019). Using physiological measures to assess distraction and annoyance from background noise. Invited talk presented at the *5th International Conference on Cognitive Hearing Science for Communication*, Linköping, Sweden, June 9-12, 2019.

Oliver, J., Sollmann, L., Niehl, A., & Francis, A.L. (2018). Do orienting responses predict annoyance from irrelevant sounds? Invited talk presented by Jordan Oliver at the *176th Meeting of the Acoustical Society of America*, Victoria, British Columbia, Canada. November 5-9, 2018.

Francis, A.L. (2017). Using psychophysiological measures to assess affective response to communication challenges across the lifespan. Invited talk presented at the *7th International and Interdisciplinary Research Conference on Aging and Speech Communication*. University of South Florida, Tampa FL, November 5-8th, 2017.

Francis, A.L. (2017). Listening effort: Phenomenology, psychology, physiology and application." Invited talk presented at the University of Connecticut and Haskins Labs, March 2 & 3, 2017.

Francis, A.L. (2017). Psychophysiological measures associated with listening effort. Talk presented at the *5th Ear Day at Rush University*, Chicago, IL, January 27, 2017.

Francis, A.L. & Alexander, J. (2013). Effects of age and hearing impairment on the perceptual weighting of acoustic cues." Talk presented at the *2nd Annual Rush Ear Day*, Chicago, IL, October 25, 2013.

Francis, A.L. (2013). Some factors that probably affect acoustic cue weighting in speech perception. Talk presented at the *7th Annual Meeting of the Auditory Cognitive Neuroscience Society*, Tucson, AZ, January 3-5, 2013.

Francis, A.L. (2012). Some effects of real and simulated cognitive and auditory aging on speech perception. Talk presented at the *6th Annual Meeting of the Auditory Cognitive Neuroscience Society*, Tucson, AZ, January 3-6, 2012.

Francis, A.L. (2011). How does spatial separation of sound sources interact with cognitive capacity limitations on speech perception? Talk presented at the *5th Annual Meeting of the Auditory Cognitive Neuroscience Society*, Tucson, AZ, January 6-7, 2011.

Francis, A.L. (2009). Perceptual learning of non-native speech sounds: The importance of features from an attention to dimensions perspective. Talk presented at the *158th Meeting of the Acoustical Society of America*, San Antonio, TX, October 29, 2009.

Francis, A.L. (2009). The role(s) of capacity limitations in speech perception. Talk presented at the *157th Meeting of the Acoustical Society of America*, Portland, OR, May 19, 2009.

INVITED PRESENTATIONS (continued)

Francis, A.L. (2009). Studies on the role of attention in speech perception: From perceptual learning to training attention. Talk presented at the *DeVault Otologic Research Laboratory Colloquium of the Indiana University School of Medicine*, Indianapolis, IN, February 11, 2009.

Francis, A.L. (2008). Features, not phonemes: Implications of studies of perceptual learning for L2 acquisition. Alexander L. Francis, Talk presented at the *Indiana University Linguistics Colloquium*, April 11, 2008.

Francis, A.L. (2008). Should we pay attention to attention? Talk presented at the *2nd Annual Meeting of the Auditory Cognitive Science Society*, Tucson AZ, January 11-12, 2008.

Francis, A.L. (2008). On babies and bathwater in the motor theory ‘debate’: The importance of active theories of perception. Rebuttal/discussion presented at the *2nd Annual Meeting of the Auditory Cognitive Science Society*, Tucson AZ, January 11-12, 2008.

Francis, A.L. (2007). What is attention, and what is it doing in speech perception? Talk presented at the *154th Meeting of the Acoustical Society of America*, New Orleans, LA, November 27-30, 2007.

Francis, A.L. (2006). Is the part greater than the whole? Experience, attention, and the role of features in phonetic learning. Talk presented to the *Department of Linguistics*, University of Illinois at Urbana-Champaign, Urbana, IL, November, 2006.

Francis, A.L. (2004). Some experiments on the perception of lexical tones in Cantonese.” Talk presented to the *Department of Linguistics*, Northwestern University, Evanston, IL, February, 2004.

Francis, A.L. & Ciocca, V. (2003). Lexical tone and cochlear implants: Basic issues, preliminary results, and future directions. Talk presented at the *DeVault Otologic Research Laboratory Colloquium of the Indiana University School of Medicine*, Indianapolis, IN, July, 2003.

CONFERENCE PRESENTATIONS (presented by me unless otherwise noted)

Francis, A., Rietdyk, S., Haddad, J., Burgin, S., Christ, S., Newell, M., Schmetter, M., & Foley, A. (2024). Effects of cognitive load and spatial hearing on postural sway and associations with fall risk in older adults with and without hearing aids. Podium presentation at the *47th Annual Midwinter Meeting of the Association for Research in Otolaryngology*, Anaheim, CA, February 3-7, 2024.

Francis, A. L., Rietdyk, S., Haddad, J., Newell, M., Christ, S., & Burgin, S. (2023). Preliminary findings from a study relating the effects of hearing loss and listening conditions on postural sway to fall risk in older adults. *Poster presented at the 184th Meeting of the Acoustical Society of America*, Chicago, IL, May 8-12, 2023.

CONFERENCE PRESENTATIONS (continued)

Francis, A. L., Kirk, N., Frain, E., Fong, K., Medina Lopez, P., Love, J., & Clougherty, J. E. (2022). Does having control over background noise affect listening effort or speech perception? *Poster presented at the 182nd Meeting of the Acoustical Society of America, Denver, CO, May 23-26, 2022.*

Medina Lopez, P., Stump, T., Kirk, N., Jung, V., Clougherty, J. E., & Francis, A. L. (2021). Individual differences in personality traits affect performance, frustration, and effort in a speech-in-noise task. *Poster presented at the 181st Meeting of the Acoustical Society of America, Seattle, WA, 29 November–3 December 2021.*

Xu, D. & Francis, A.L. (2019). Relationships among Self-reported Hearing Problems, Psychological Distress, and Cardiovascular Disease in US Adults, National Health Interview Survey 1997-2017. Paper presented by Dongjuan Xu at the Mental Health program of the APHA's 2019 Annual Meeting and Expo (Nov. 2 - Nov. 6, 2019), Philadelphia, PA.

Love, J. Sollmann, L., Niehl, A., & Francis, A.L. (2019). Does noise sensitivity or attentional capacity predict cardiovascular responses to distracting sound? Talk presented at the *177th Meeting of the Acoustical Society of America*, May 13-17, 2019, Louisville, KY.

OTHER PUBLICATIONS

Francis, A.L. & Xu, D. (2019). The Hearing Loss, Psychological Distress, and Cardiovascular Disease Connection. *Hearing Journal*, November 2019. Volume 72, Issue 11, p 18, 20

Tcl/Tk for Dummies. Tim Webster with Alex Francis, IDG Press, 1997.

MANUSCRIPTS IN PROGRESS

Seidl, N., Newell, M., & Francis, A.L. (in review) Just Keep Spinning? The impact of auditory and somatosensory cues on rotary chair testing. *American Journal of Audiology*.

Alvar, A. & Keehn, B., & Francis, A.L. (in revision) The effect of autonomic arousal on attentional orienting and associations with autism traits. To be submitted to *Attention, Perception, and Psychophysics*.

Francis, A.L., Rietdyk, S., Haddad, J.M., Burgin, S., Newell, M., & Christ, S. (in prep.) Relationship between hearing, balance, and fall incidence in older adults. To be submitted to *The Laryngoscope* or *Journal of the American Academy of Audiology*.

Francis, A.L., Richards, E., La Fratta, Z. & Healey, D. (in prep.) Relationship between age, duration of hearing aid use and fall risk in the NHANES corpus 1999-2004. To be submitted to *Journal of Speech, Language, & Hearing Research*, *Ear and Hearing*, or *Trends in Hearing*.

TEACHING EXPERIENCE

Purdue University

PhD Supervisor

- Ann Alvar: *The effects of noise on autonomic arousal and attention and their relationship to autism symptomatology* (SLHS, awarded December 2021).
- Wai Ling Christie Law: *The effects of social and experiential factors on the interactions between the phonetic systems of diglossic bilinguals* (Linguistics, awarded August 2017)
- Fernando Llanos Lucas: *The role of experience in processing foreign-accented speech* (SLC, with Bob Hammond: Spanish, awarded August 2016)
- Mengxi Lin: *The relationship between acoustic features of second language speech and listener evaluation of speech quality.* (Linguistics, awarded August 2015)
- Wei Grace Zhang: *Quantifying Fricatives and Affricates in Chinese-Accented English.* (Linguistics, awarded December 2010)
- Yanhong Zhang: *English lexical stress production and perception by native Mandarin speakers* (Linguistics, awarded, May 2008)
- Maria Kondaurova: *Training to ignore vs. training to attend: An investigation of the interaction between native language experience and training methods in the acquisition of a foreign phonetic contrast* (Linguistics, awarded, December 2008)
- Natalya Kaganovich: *Interaction between talker's voice, linguistic information, and attention during speech perception.* (Linguistics, awarded, August 2007)

Doctoral Committee Member (department, major professor): Kim, Yesol (SLHS, Brandon Keehn), in progress; Nodar, Leah (LING, Felicia Roberts), in progress; Seo, Yuhyeon (LING, Olga Dmitrieva), in progress; Jung, Yee-Jee (LING, Olga Dmitrieva), Graduated December, 2023; Staszewicz, Bruno (SLC, Lori Czerwionka), Graduated, December 2023; Hutchison, Amy (LING, Olga Dmitrieva), Graduated, May 2022; Kelly Anne Cole (ECE, Marcus Rogers), Graduated August 2021; Conklin, Jenna (LING, Mary Niepokuj), Graduated August 2019; Abu-Zhaya, Rana (SLHS, Amanda Seidl), Graduated, August 2018; Milvae, Kristina (SLHS, Beth Strickland), Graduated, August 2017; Hegland, Erica (SLHS, Beth Strickland), Graduated, August 2017; Mohan, Ranjini (SLHS, Chris Weber-Fox), Graduated, August 2016; Krok, Windi (SLHS, Larry Leonard), Changed committee membership, 2015; Wang, Yuanyuan (LING, Amanda Seidl), Graduated, May 2015; Carlson, Kristin (SLC, Robert Hammond), Graduated, May 2014; Hassink, Johanna (SLHS, Larry Leonard), Graduated, December 2013; Sugovic, Mila (PSYC, Jessica Witt), Graduated, May 2013; MacPherson, Megan (SLHS, Anne Smith) Graduated, December 2012; Kurtz, Robert (SLHS, Ronnie Wilbur), Graduated, December 2012; Jennings, Skyler (SLHS, Beth Strickland), Graduated, August 2011; Cappa, Kimberly (PSYC, Judith Conger), Graduated, August 2011; Han, Kihwan (ECE, Tom Talavage), Graduated, December 2010; Ranaweera, Ruwan (ECE, Tom Talavage), Graduated, December 2010; Krull, Vidya (SLHS, Xin Luo/Karen Kirk), Graduated, August 2010; Zdanczyk, Cynthia (PSY, Robert Melara), Graduated, August 2009; Cristia, Alejandrina (LING, Amanda Seidl), Graduated, May 2009; Finneran, Denise (SLHS, Larry Leonard), Graduated, December 2008; Vigil, Donny (FLL, Robert Hammond), Graduated August 2008;

Eccarius, Petra (LING, Diane Brentari), Graduated, May 2008; Chandrasekaran, Bharath (SLHS/PULSE/PUN, Jack Gandour), Graduated, May 2008; Chen, Sufen (PSY, Robert Melara) Graduated, August 2007; Xu, Yisheng (Neuroscience/SLHS, Jack Gandour) Graduated December 2005; Vokic, Gabriela (FLL, Robert Hammond) Graduated August 2005

Evidence-based Practice Project supervisor: Natalie Seidl (2022); Elizabeth Guyer (2021); Allison Reitz (co-supervised with Melissa Newell; 2020), Meghan Mauntler (2020)

Audiology Doctoral Research Supervision: Katie Connell (primary, 2010-2011), Kelly Rich (primary, 2010-2011), Caitlin Rinehart (primary, 2011-2012), Kelsie Johnson (primary, 2011-12), Diana True (secondary, 2011-2012), Alyson Gearhart (primary, 2013-2014)

Master's Thesis Supervisor: Maria Kondaurova (Linguistics, M.A., 2004), Courtney Driscoll (SLHS, M.Sc., 2005), Amanda A. Shultz (Linguistics, M.A., 2011)

Dean's Scholar Supervisor: Ross Nelson (2009-2010), Leigh Anderson (2010-2011)

Lecturer: HONR 299 *Open Science and Replication in Human Subjects Research* (Spring, 2021); AUS 306/ LING 315 *Introduction to Phonetics* (Fall, 2002, Spring 2004, Fall, 2012-2013, Spring 2013, 2014); SLHS 302 *Acoustic Bases of Speech and Hearing* (Spring, 2003-2008; 2010-2014); AUS/SLHS 419A/519A/LING 598C *Honors Acoustics* (Spring, 2005, 2007, 2008), SLHS 502 *Speech Science* (Fall, 2003- 2008); SLHS 519A/511 *Aging and Communication* (Fall, 2009-2012); PSYC 520 *Attention and Performance* (Fall, 2010); SLHS 606 *Experimental Phonetics* (Spring 2003, 2006, 2011; Fall, 2008); SLHS 444, *Introduction To Research In Communication Sciences And Disorders* (Fall, 2011); AUS/SLHS & LING 490/590/498/598/698 *Supervised Reading Course (various topics)*

University of Hong Kong

Dissertation Supervisor: Speech and Hearing Sciences B.Sc. program

PBL Tutor: Speech and Hearing Sciences problem-based learning curriculum

Lecturer: Speech & Hearing Sciences: *Master Class on Neurological Bases of Communication Disorders, Statistics Skills Labs*; Committee on Cognitive Science: *Introduction to Cognitive Science*; English Department: *American English*

University of Chicago

Lecturer: Psychology Department: *Computers, Brains and Behavior*

Teaching Assistant: Psychology Department: *Connectionist Modeling; Speech Perception*; Linguistics Department: *Phonetics*

PROFESSIONAL SERVICE

Acoustical Society of America (ASA)

Panel on Public Policy, 2018-present

Technical Program Organizing Committee Representative, Speech Communication 2014-2016

Associate Editor (Speech Perception), *Journal of the Acoustical Society of America*, 2004-2005

Local Organizing Committee Member, 168th Meeting of the Acoustical Society of America, Indianapolis, IN, October 27-31, 2014

Organizer, Special Session on “The Role of Attention in Speech Perception,” 154th Meeting of the Acoustical Society of America, New Orleans, LA, November 27-December 1, 2007

American Speech Language Hearing Association (ASHA)

Editor (Hearing), *Journal of Speech, Language & Hearing Research*, 2019-2021

Editorial Board, *Journal of Speech, Language & Hearing Research*, 2018-2019

Ad hoc Action Editor (Speech), *Journal of Speech, Language & Hearing Research*

Other

Associate Editor, *Language and Speech*, 2014-2017

Ad Hoc Editor/Reviewer/Editorial Consultant (Journals): Frequently: *Attention, Perception & Psychophysics, Ear and Hearing, Hearing Research, Journal of the Acoustical Society of America, Journal of Speech, Language & Hearing Research, PLoSOne, Psychophysiology*; Occasionally: *American Journal of Speech-Language Pathology, Acta Psychologica, Applied Psycholinguistics, Bilingualism: Language & Cognition, Brain and Language, Cerebral Cortex, Cognition, Current Directions in Psychology, Journal of Communication Disorders, Language and Cognitive Processes, Journal of Experimental Psychology: Human Perception and Performance, Journal of Memory and Language, Journal of Phonetics, Mathematical Biosciences, PLoSOne, Psychological Bulletin, Language & Speech, Second Language Research, Speech Communication*

Reviewer/Editorial Consultant (Grants): *American Speech, Language and Hearing Association, Natural Sciences and Engineering Research Council of Canada, Indiana Clinical and Translational Sciences Institute (CTSI), Social Science and Humanities Research Council of Canada; National Science Foundation; National Institutes of Health; Research Grants Council of Hong Kong; Israeli Science Foundation; Veteran’s Administration; The Wellcome Trust;*

Reviewer/Editorial Consultant (Other): *Educational Testing Service (ETS)*

Symposium Committee, *Center on Aging and the Life Course*, 2009

Steering Committee Member, *Asia Pacific Society for the Study of Speech, Language, and Hearing*, 2001-2002

External Reviewer, Ph.D. Thesis Committee, University of Hong Kong, 2019; University of Canterbury, New Zealand, 2011

DEPARTMENT, COLLEGE, AND UNIVERSITY SERVICE

Current

HHS Faculty Affairs Committee, Representative for SLHS, 2023-present
Chair, University Senate Library Committee, 2023-present
University Mediation Committee, 2023-present
Associate Director, Center for Research on Brain, Behavior, and Neurorehabilitation
(CEREBBRAL), 2023-present
SLHS NSSLHA Co-Advisor, 2022-present
SLHS Undergraduate Success and Recruitment Committee Chair, 2018-present
University Senate Library Committee, 2020-present

Past

University Grievance Committee, 2020-2023
SLHS Assistant Professor Search Committee, 2021-2022
Chair, University Senate Faculty Affairs Committee, 2020-2021
University Senate Steering Committee, 2020-2021
Susan Bulkeley Butler Center Working Papers Editorial Board Member, 2019-present
University Senate Faculty Affairs Committee Liaison to the Committee on Compensation and
Benefits, 2019-2021
AAUP Representative, Committee A (Academic Freedom and Tenure), 2018-2021
Purdue University Senate, 2017-2021
Purdue University Senate Faculty Affairs Committee, 2017-2021
Purdue Clifford B. Kinley Trust Committee, 2014-2019
SLHS Graduate Admissions Committee (MS-SLP), 2017-2020
SLHS Department Head Search Committee, 2018
Purdue MLK Planning Committee, 2015-2017
HHS Career Advisory Council, 2016-2017
Purdue IRB Executive Committee, 2012-2014
Purdue IRB Biomedical Review Committee, 2012-2014
Purdue Center on Aging and the Life Course (CALC) Steering Committee, 2010-2012
Purdue University Senate Committee for Student Excellence, 2009-2011
Purdue University Working Group on Neurologic Disorders Advisory Group, 2009
HHS Undergraduate Curriculum Committee representative for SLHS, 2014-216
HHS Grade Appeals Committee, 2014-2015
HHS Faculty Affairs Committee, SLHS Representative, 2011-2014
HHS Representative, Faculty Advisory Committee to the IRB, 2011-2014
HHS Interdisciplinary Programs Task Force, 2011-2012
SLHS Brownbag Seminar Convener, 2016
SLHS Undergraduate Committee Chair, 2014-2016
SLHS Advisory Committee to the Head, 2009-2010, 2013-2014
SLHS Undergraduate Website Committee Chair, 2012-2014
SLHS Undergraduate Curriculum Committee member, 2012-2014

SLHS ad hoc Committee on Studying Abroad, 2010-2011
SLHS Graduate Committee member, 2003-2004; 2009-2012
SLHS NSSLHA (Purdue Chapter) Faculty Advisor, 2007-2010
SLHS Ombudsperson, 2005-2006
SLHS College of Liberal Arts Honors Committee representative, 2004-2006, 2007-2010
CLA Faculty Senate representative for SLHS, 2004-2007
Program in Linguistics Policy Committee member, 2003-2005

INTERDISCIPLINARY ACTIVITY

Faculty Associate, Center for Research on Brain, Behavior, and NeuroRehabilitation
(CEREBBRAL), 2019-Present
Faculty Associate, Purdue Institute for Integrative Neuroscience, 2018-Present
Faculty Associate, Center on Aging and the Life Course (CALC), 2008-Present
Department of Psychological Sciences, Courtesy Appointment, 2006-Present
Linguistics Program Faculty Member, 2003-Present

ASSOCIATION MEMBERSHIPS

Acoustical Society of America (ASA) (Fellow)
American Association of University Professors (AAUP)
American Speech, Language, and Hearing Association (ASHA) (without certification)
Psychonomic Society (Fellow)
Society for Psychophysiological Research (Full Member)

REFERENCES

Available on request