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CURRICULUM VITAE

EMPLOYMENT

2021-Present Associate Professor, **University of California, Davis**
Department of Linguistics

2014-2021 Assistant Professor, **University of California, Davis**
Department of Linguistics

2013-2014 Postdoctoral Researcher, **University of Arizona**
Department of Physiology

EDUCATION

2008-2013 PhD. Linguistics, Phonetics, **University of Alberta**
Thesis: Cognitively-Active Speaker Normalization Based on Formant-Frequency
Scaling Estimation

2006-2008 MA. Hispanic Studies, Language and Linguistics, **University of Western Ontario**.
Thesis: The acquisition of Canadian English vowels by L1 Spanish speakers.

2002-2006 BA Combined Honours, Linguistics and Spanish Language and Literature,
University of Western Ontario.

JOURNAL ARTICLES

Barreda, S. & P. Assmann. (in press). Perception of Gender in Children's Voices. *Journal of the Acoustical Society of America*.

Cappa, C., Asadi, S., Barreda, S., Wexler, A., Bouvier, N., & Ristenpart, W. (2021). Expiratory aerosol particle escape from surgical masks due to imperfect sealing.

Barreda, S. (2021). Perceptual validation of vowel normalization methods for variationist research. *Language Variation and Change*, 1-27.

- Barreda, S. (2021). Fast Track: fast (nearly) automatic formant-tracking using Praat. *Linguistics Vanguard*, 7(1).
- Asadi, S., Cappa, C. D., Barreda, S., Wexler, A. S., Bouvier, N. M. & Ristenpart, W. D. (2020). Efficacy of masks and face coverings in controlling aerosol particle emission from expiratory activities. *Scientific reports*.
- Barreda, S. (2020). Vowel Normalization as Perceptual Constancy. *Language*, 96:2, 224-254.
- Zellou, G., Barreda, S., & Ferenc Segedin, B. (2020). Partial perceptual compensation for nasal coarticulation is robust to fundamental frequency variation. *The Journal of the Acoustical Society of America*, 147(3), EL271-EL276.
- Asadi, S., Wexler, A. S., Cappa, C. D., Barreda, S., Bouvier, N. M., & Ristenpart, W. D. (2020). Effect of voicing and articulation manner on aerosol particle emission during human speech. *PloS one*, 15(1), e0227699.
- Asadi, S., Wexler, A. S., Cappa, C. D., Barreda, S., Bouvier, N. M., & Ristenpart, W. D. (2019). Aerosol emission and superemission during human speech increase with voice loudness. *Scientific reports*, 9(1), 2348.
- Barreda, S., & Nearey, T. M. (2018). A regression approach to vowel normalization for missing and unbalanced data. *The Journal of the Acoustical Society of America*, 144(1), 500-520.
- Barreda, S., & Assmann, P. F. (2018). Modeling the perception of children's age from speech acoustics. *The Journal of the Acoustical Society of America*, 143(5), EL361-EL366.
- Barreda, S., & Liu, Z. Y. (2018). Apparent-talker height is influenced by Mandarin lexical tone. *The Journal of the Acoustical Society of America*, 143(2), EL61-EL66.
- Barreda, S. (2017). An investigation of the systematic use of spectral information in the determination of apparent-talker height. *The Journal of the Acoustical Society of America*, 141(6), 4781-4792.
- Barreda, S. (2017). Listeners respond to phoneme-specific spectral information when assessing speaker size from speech. *Journal of Phonetics* 63: 1-18.
- Such, O. and S. Barreda. (2016). Bayes covariant multi-class classification. *Pattern Recognition Letters* 84: 99-106.
- Kidder, I. J., Mudery, J. A., Barreda, S., Taska, D. J., & Bailey, E. F. (2016). Evaluating the control: minipump implantation and breathing behavior in the neonatal rat. *Journal of Applied Physiology*, 121(3), 615-622.
- Barreda, S. (2016). Investigating the use of formant frequencies in listener judgments of speaker size. *Journal of Phonetics* 55: 1-18.
- Barreda, S., Kidder, I., Mudery, J. and E. F. Bailey. (2015). Developmental nicotine exposure adversely effects respiratory patterning in vivo. *Respiratory Physiology and Neurobiology* 208: 45-50.

- Barreda, S. and Nearey, T. (2013). Training listeners to report the acoustic correlate of formant-frequency scaling using synthetic voices. *The Journal of the Acoustical Society of America* 133(2): 1065-1077.
- Barreda, S. (2012). Vowel normalization and the perception of speaker changes: An exploration of the contextual tuning hypothesis. *The Journal of the Acoustical Society of America* 132(5): 3453-3464.
- Barreda, S. and T.M. Nearey. (2012a). The direct and indirect roles of fundamental frequency in vowel perception. *The Journal of the Acoustical Society of America* 131(1): 466-477.

PROCEEDINGS AND WORKING PAPERS

- Brotherton, C., Cohn, M., Zellou, G., & Barreda, S. (2019). Sub-regional variation in positioning and degree of nasalization of /æ/allophones in California. In *Proceedings of the XIX International Congress of Phonetic Sciences*.
- Cohn, M., Zellou, G., & Barreda, S. (2019). The Role of Musical Experience in the Perceptual Weighting of Acoustic Cues for the Obstruent Coda Voicing Contrast in American English. *Proc. Interspeech 2019*, 2250-2254.
- Šuch, O., Barreda, S., Klimo, M., Tarábek, P., & Tinajová, A. (2018). Comparing Classification Methods in Isolated Vowel Classification. In *2018 World Symposium on Digital Intelligence for Systems and Machines (DISA)* (pp. 331-337). IEEE.
- Barreda, S. and Georgia, Z. (2015). Speaker identity and spectral changes in word recognition. *Proceedings of the 18th International Congress of Phonetic Sciences (ICPhS XVIII)*, August, Glasgow, UK.
- Barreda, S. and T. Nearey. (2013). The perception of formant-frequency range is affected by veridical and judged fundamental frequency. *Proceedings of the 21st International conference on Acoustics*, Montreal, 2013.
- Assmann, P., Barreda, S. and T. Nearey. (2013). Perception of speaker age in children's voices. *Proceedings of the 21st International conference on Acoustics*, Montreal, 2013.
- Barreda, S. and Nearey, T. (2012b). The association between speaker-dependent formant space estimates and perceived vowel quality. *Canadian Acoustics* 40: 12-13.
- Barreda, S. (2011). The Tsuut'ina Vocalic System. *Rochester Working Papers in the Language Sciences* 6: 1-10.
- Barreda, S. and T. M. Nearey. (2010). How the role of F3 in vowel perception may be influenced by listener expectations. *Canadian Acoustics* 38: 124-125.

PRESENTATIONS

- Barreda, S. (2019). Perceptual validation of vowel normalization methods for variationist research. NWAV 49, Eugene, Oregon.

- Brotherton, C., Cohn, M., Zellou, G., & Barreda, S. (2019). Sub-regional variation in positioning and degree of nasalization of /æ/ allophones in California. *The XIX International Congress of Phonetic Sciences*. Melbourne, Australia.
- Cohn, M., Zellou, G., & Barreda, S. (2019). The Role of Musical Experience in the Perceptual Weighting of Acoustic Cues for the Obstruent Coda Voicing Contrast in American English. *Interspeech 2019*, Vienna.
- Brotherton, C., Cohn, M., Zellou, G., & Barreda, S. (2019). Regional variation in vowel positioning and diphthongization in TRAP allophones in California. Annual meeting of the Linguistic Society of America, New York.
- Barreda, S. (2019). A theoretical and statistical investigation of vowel normalization procedures. Annual meeting of the Linguistic Society of America, New York.
- Barreda, S., Liu, Z. Y. (2019). The effect of linguistic experience on the perception of talker height from speech. Annual meeting of the Linguistic Society of America, New York.
- DeLucia, C. M., Barreda, S., Vranish, J. R., & Bailey, E. F. (2018). Can Daytime Measures of Respiratory Sinus Arrhythmia and Breathing Stability Serve as Biomarkers for OSA?. *Experimental Biology*, San Diego, California.
- Assmann, P. F., Kopolowicz, M. R., & Barreda, S. (2018). Perception of talker height and sex from children's voices. *The Journal of the Acoustical Society of America*, 144(3), 1964-1964.
- Šuch, O., Barreda, S., Klimo, M., Tarábek, P., & Tinajová, A. (2018). Comparing Classification Methods in Isolated Vowel Classification. *2018 World Symposium on Digital Intelligence for Systems and Machines*, Kosice, Slovakia.
- Barreda, S., & Nearey, T. M. (2017). A regression approach to vowel normalization for missing and unbalanced data. *The Journal of the Acoustical Society of America*, 142(4), 2583-2583. New Orleans.
- Nearey, T. M., Barreda, S., Kieffe, M., & Assmann, P. F. (2017). Random effects and the evaluation of the uniform scaling hypothesis for vowels. *The Journal of the Acoustical Society of America*, 141(5), 3582-3582.
- Barreda, S. (2016). Investigating the sliding template model of vowel perception. The 172th meeting of the Acoustical Society of America, Honolulu, HI.
- Zellou, G., Barreda, S., McIntyre, N., Swain-Lerro, L., Zajic, M., & Mundy, P. (2016). The role of fundamental and formant frequency information on voice and speaker perception in children with Autism and Attention Deficit Hyperactivity. 15th Laboratory Phonology Conference (LabPhon 15), July 17-19, Ithaca, NY.
- Barreda, S. and Georgia, Z. (2015). Speaker identity and spectral changes in word recognition. The 18th International Congress of Phonetic Sciences (ICPhS XVIII), Glasgow, UK.

- Barreda, S., Vranish, J. R., and E. Fiona Bailey. (2014). A novel approach for the analysis of respiratory sinus arrhythmia using breath phase information. Meeting of the Society for Neuroscience, Washington, D.C..
- Assmann, P., Kapolowicz, M., Massey, D., Barreda, S., and T. Nearey. (2014). *Perception of speaker sex in re-synthesized children's voices*. The 167th meeting of the Acoustical Society of America, Providence, RI.
- Assmann, P., Barreda, S. and T. Nearey. (2013). *Modeling the perception of speaker age and sex in children's voices*. The 166th meeting of the Acoustical Society of America, San Francisco, CA.
- Barreda, S. and Nearey, T. (2013). *Investigating the perception of relative speaker size using synthetic talkers*. The 166th meeting of the Acoustical Society of America, San Francisco, CA.
- Barreda, S. and Nearey, T. (2012). *The association between speaker-dependent formant space estimates and perceived vowel quality*. The 2012 Annual Conference of the Canadian Acoustical Association. Banff, AB.
- Barreda, S. and Nearey, T. (2011). *Formant frequencies, vowel identity and the perceived relative tallness of synthetic speakers*. The 162nd meeting of the Acoustical Society of America, San Diego, CA.
- Barreda, S. and Nearey, T. (2011). *Training listeners to report fundamental frequency and formant range information independently*. The 161th meeting of the Acoustical Society of America, Seattle, WA.
- Barreda, S. and Nearey, T. (2010). *Using systematic synthetic voice differences to probe the perception of mixed-talker vowels*. The 160th meeting of the Acoustical Society of America, Cancun, Mexico.
- Barreda, S. and Nearey, T. (2010). *The relationship between fundamental frequency and vowel quality*. The 159th meeting of the Acoustical Society of America, Baltimore, MA.
- Barreda, S. and Nearey, T. (2010). *How the role of F3 in vowel perception may be influenced by listener expectations*. The 2010 Annual Conference of the Canadian Acoustical Association. Victoria, BC.
- Barreda, S. (2009). *The use of trigrams in the classification of texts based on authorship*. Conference of the American Association for Corpus Linguistics. University of Alberta.
- Barreda, S. (2008). *Perception and Production of Canadian English Vowels by L1 Spanish Speakers*. Hispanic Linguistics Symposium. The University of Laval.

WORKSHOPS

Bayesian modeling for linguistic researchers. New Ways of Analyzing Variation, University of Oregon., Oct 2019.

AWARDS

- 2019 Helman Fellow Award (USD \$ 23000)
- 2015 UC Davis ISS Individual Research Grant (USD \$5000)

SOFTWARE PACKAGES

Barreda, S. (2015). phonTools: Functions for phonetics in R. R package version 0.2-0.
<https://cran.r-project.org/web/packages/phonTools/index.html>

Barreda, S. (2020). Fast Track: A Praat plugin for fast, accurate, (nearly) automatic formant-tracking
<https://github.com/santiagobarreda/FastTrack>