

# Sarah Bakst

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## Current position

*Postdoctoral Researcher*, Brain, Language, and Acoustic Behavior Laboratory.  
PI: Caroline A. Niziolek. Waisman Center, University of Wisconsin–Madison.  
*Also affiliated with*: Binaural Hearing and Speech Laboratory.  
PI: Ruth Y. Litovsky. Waisman Center, University of Wisconsin–Madison.

## Education

- 2014-2017 Ph.D. in Linguistics, University of California at Berkeley.  
Dissertation: *Articulation and Altered Auditory Feedback*.  
Dissertation Committee: Keith Johnson (co-chair), Susan Lin (co-chair), John Houde (UCSF), Richard Ivry (Psychology).  
Qualifying paper: “Differences in the relationship between palate shape, articulation, and acoustics of American English /r/ and /s/.”  
Qualifying Committee: Sharon Inkelas (chair), Keith Johnson, Susan Lin, and Justin Davidson.
- 2012-2014 M.A. in Linguistics, University of California at Berkeley.  
Qualifying paper: “A phonetic basis for the sonority of [χ].”  
Advisor: Keith Johnson.
- 2011-2012 M.Phil. with Distinction in Linguistics, University of Cambridge, Trinity College.  
Thesis: “Rhotics and Retroflexes in Indic and Dravidian.”  
Supervisor: Francis Nolan.
- 2007-2011 A.B. Magna cum laude in Linguistics (secondary field Classics), Harvard University.  
Thesis: “Clique-y Clitics: Accentuation in Ancient Greek Enclitics and Clitic Groups.”  
Advisors: Jay Jasanoff and Michael Becker.

## Grants, honors and awards

- 2019-2021 NIH F32 training grant DC017653-01A1: *Speech error-detection with degraded auditory representations*.
- 2020 First Place, Postdoc Poster Blitz, Association for Research in Otolaryngology Mid-Winter Meeting, San Jose, CA.

- 2020 Travel award to the Association for Research in Otolaryngology Mid-Winter Meeting, San Jose, CA.
- 2019 Travel award to the Conference on Implantable and Auditory Prostheses, Tahoe, CA.
- 2018-2019 NIH T32 training grant 5T32DC005359-13
- 2016-2017 National Science Foundation Doctoral Dissertation Research Improvement Grant BCS-1628789: *Articulation and Altered Auditory Feedback* with Susan Lin and Keith Johnson.
- 2014-2015 Foreign Language and Area Studies (FLAS) academic year fellowship for Tamil.
- 2013 Linguistics Society of America Summer Institute Fellowship, provided tuition for summer institute at University of Michigan, Ann Arbor.
- 2011 Herchel Smith Scholarship for M.Phil at Trinity College, Cambridge.
- 2011 Phi Beta Kappa.
- 2010 Harvard College John Harvard Scholar.
- 2010 David Rockefeller International Experience Grant, internship at King's College, Cambridge.
- 2010 Harvard-Cambridge Undergraduate Summer Fellowship, internship at King's College, Cambridge.

## Publications and presentations

### Publications

- 2020 **Bakst, S.** "Palate shape influence depends on the segment: articulatory and acoustic variability in American English /ɹ/ and /s/." (under review)
- 2020 **Bakst, S.** and Niziolek, C. A. "Effects of syllable stress in adaptation to altered auditory feedback in vowels." (under review)
- 2018 **Bakst, S.** and Johnson, K. "Modeling the Effect of Palate Shape on the Articulatory-Acoustics Mapping."
- 2016 **Bakst, S.** and Johnson, K. "Modeling the Effect of Palate Shape on the Articulatory-Acoustics Mapping." *UC Berkeley Phonology Lab Annual Report*
- 2016 Johnson, K. and **Bakst, S.** "'Many to One' in the Articulation to Acoustic Map." *UC Berkeley Phonology Lab Annual Report*
- 2016 **Bakst, S.** "Differences in the relationship between palate shape, articulation, and acoustics of American English /r/ and /s/." *UC Berkeley Phonology Lab Annual Report*
- 2015 **Bakst, S.** and Lin, S. "An ultrasound investigation into articulatory variation in American /r/ and /s/." Peer-reviewed. In *The Scottish Consortium for ICPHS 2015 (Ed.), Proceedings of the 18th International Congress of Phonetic Sciences. Glasgow, UK: the University of Glasgow. ISBN 978-0-85261-941-4. Paper number 0696.*
- 2015 **Bakst, S.** and Katz, J. "A phonetic basis for the sonority of [χ]." In *The Proceedings of the 50th Annual Meeting of the Chicago Linguistics Society.*
- 2012 **Bakst, S.** "Rhotics and Retroflexes in Indic and Dravidian", *UC Berkeley Phonology Lab Annual Report.*

### Invited talks/organized sessions

- 2020 **Bakst, S.** “Reconsidering ‘articulatory effort’ as an explanatory force.” Invited talk to be presented at the Acoustical Society of America, TBD, Chicago, IL
- 2019 **Bakst, S.** and Niziolek, C., *session organizers* “Self-Perception in Speech Production” Acoustical Society of America, December 2-6, San Diego, CA
- 2019 **Bakst, S.** “Target practice: Self-monitoring in L1 and L2 speech production”, invited colloquium, Dept. of Linguistics, University of Wisconsin–Milwaukee.
- 2016 **Bakst, S.** “Modeling the effect of palate shape on the articulation and acoustics of American /r/”, Phonology Research Weekend, UC Santa Cruz.
- 2016 **Bakst S.** “The role of palate shape in individual articulatory and acoustic variability in American English /r/ and /s/”, UC Santa Cruz Phonetics and Phonology Lunch.
- 2013 **Bakst, S.** “Phonetic evidence for the phonological patterning of [χ]”, Stanford Phonetics and Phonology Workshop.
- 2012 **Bakst, S.** “Retroflexes in Indic and Dravidian”, Trinity College, Cambridge Arts and Humanities Symposium.

### Conferences presentations

- 2020 **Bakst, S.** and Niziolek, C. “Monitoring self-produced speech variability in native and learned languages.” Poster to be presented at the Acoustical Society of America, TBD, Chicago, IL
- 2020 **Bakst, S.**, Niziolek, C., and Litovsky, R. “Subphonemic variation detection and correction in cochlear implant users.” Poster to be presented at the Acoustical Society of America, TBD, Chicago, IL
- 2020 **Bakst, S.** and Lin, S. “Stability and instability in the articulatory-acoustic mapping over time.” Poster presented at the Linguistic Society of America, January 2-5, New Orleans, LA
- 2019 **Bakst, S.** and Niziolek, C. “The role of auditory feedback in error-detection and correction in first and second language production.” Talk presented at the Acoustical Society of America, December 2-6, San Diego, CA
- 2019 **Bakst, S.** and Lin, S. “Post-collection ultrasound-audio synchronization.” Poster presented at the Acoustical Society of America, December 2-6, San Diego, CA
- 2019 **Bakst, S.** and Niziolek, C. “Sensitivity to natural and altered auditory feedback in L1 and L2.” Poster presented at Society for Neuroscience, October 19-23, Chicago, IL.
- 2019 **Bakst, S.**, Niziolek, C, and Litovsky, R. Y. “Error-detection in Cochlear Implant and Normal Hearing Listeners.” Talk presented at the Tenth Annual Midwest Mini-Conference on Cochlear Implants, October 18-19, 2019, Madison, WI.
- 2019 **Bakst, S.** and Niziolek, C. “How many targets does schwa have? An altered auditory feedback study.” Talk presented at the 24th Annual Mid-continental Phonetics and Phonology Conference, October 4-5, Milwaukee, WI.

- 2019 **Bakst, S.** and Niziolek, C. “Does schwa have an auditory target? An altered auditory feedback study.” Talk presented at International Congress of Phonetic Sciences, August 5-9, Melbourne, Australia.
- 2019 **Bakst, S.** and Niziolek, C. “Self-correction in L1 and L2 vowel production.” Poster presented at International Congress of Phonetic Sciences, August 5-9, Melbourne, Australia.
- 2019 **Bakst, S.**, Niziolek, C., and Litovsky, R. “Discrimination thresholds in self-produced speech in cochlear implant listeners and normal listeners.” Poster presented at Conference on Implantable Auditory Prostheses, July 15-19, Lake Tahoe, CA. **Bakst, S.** and Niziolek, C. “Self-monitoring in L1 and L2: a magnetoencephalography study.” Talk presented at Neural Bases of Speech Production, March 22, University of California, San Francisco.
- 2018 **Bakst, S.** and Niziolek, C. “Self-monitoring in L1 and L2 speech production: an MEG study.” Talk presented at Society for Neuroscience, November 3-7, San Diego, CA.
- 2019 **Bakst, S.**, Houde, J., Lin, S., Johnson, K. “Native language differences in adaptation to altered auditory feedback.” Talk presented at MidPhon, Oct 5-6, Northwestern University, Evanston, IL.
- 2018 **Bakst, S.** and Niziolek, C. “Self-monitoring in L1 and L2 speech production: an MEG study.” Poster presented at Society for the Neurobiology of Language, August 16-18, Quebec City, Canada.
- 2018 **Bakst, S.**, Houde, J. F., Lin, S., and Johnson, K. “Individual strategies in adaptation to altered auditory feedback.” Poster presented at the Acoustical Society of America, May 7-11, Minneapolis, MN.
- 2017 **Bakst, S.**, Houde, J. F., and Johnson, K. “Articulation and adaptation to altered auditory feedback.” Poster presented at the Acoustical Society of America (joint with the European Acoustics Association), June 25-29, Boston, MA.
- 2017 Pycha, A., Inkelas, S., and **Bakst, S.** “Why do morpheme-internal segments resist alternations? A word-learning experiment.” Talk presented at the 53rd Annual meeting of the Chicago Linguistics Society, May 25-27, Chicago, IL.
- 2016 **Bakst, S.** and Johnson, K. “Modeling the effect of palate shape on the articulatory-acoustics mapping.” Poster presented at the Acoustical Society of America (joint with Acoustical Society of Japan), November 27-December 1, Honolulu, Hawaii.
- 2016 **Bakst, S.** “The role of palate shape in individual articulatory and acoustic variability.” Poster presented at Laboratory Phonology, July 13-16, Cornell University, Ithaca, NY.
- 2016 **Bakst, S.** “Variability in /s/ production as a function of palate shape.” Poster presented at the Linguistic Society of America, January 7-10, Washington DC.
- 2015 **Bakst, S.** and Lin, S. “An Ultrasound investigation into articulatory variation in American /r/ and /s/.” Poster presented at the International Congress of Phonetic Sciences, August 10-14, Glasgow, UK.
- 2015 **Bakst, S.** “Cue-weighting in retroflex and dental perception by Hindi and Tamil listeners.” Talk presented at Phonetics and Phonology in Europe, June 29-30, Cambridge, UK.
- 2014 **Bakst, S.** “Accounting for variation in Tamil retroflex articulation.” Poster pre-

sented at the Sound Change in Interacting Human Systems Workshop on Sound Change, Berkeley, CA.

- 2014 Johnson, K., **Bakst, S.**, and Minas, E. “Audio/visual correlates of a vowel near-merger in the Bay Area.” Poster presented at the Acoustical Society of America Conference, Providence, RI.
- 2014 **Bakst, S.** and Katz, J. “A phonetic basis for the sonority of [χ].” Talk presented at the 50th Annual meeting of the Chicago Linguistics Society, Chicago, IL.

## Teaching, mentoring, and work experience

- 2020 Co-developing and teaching basic computing (command line tools, GitHub, introductory Matlab) workshop with Robin Karlin (Spring).
- 2017-9 **Bakst, S.** “The visual system in speech perception.” Guest lecture in Comm. Sci & Dis. 303, *Speech Acoustics and Perception*, Univ. Wisconsin–Madison.
- Sum 2016 Instructor and course developer for Linguistics 10: The Sounds of English.
- Fall 2015 Graduate Student Instructor for Linguistics 110: Introduction to Phonetics and Phonology with Professor Susan Lin.
- Spring 2014-present Linguistics Research Apprenticeship Program (pairing of linguistics graduate mentors with undergraduate research apprentices). Projects: Articulation and Altered Auditory Feedback (Sp 2016–Sp 2017); Ultrasound study of articulatory variation in coronals (Sp, Fa 2015); Cue-weighting with Hindi synthesized speech continuum (Fa 2014); Fricatives as bearers of cues to adjacent consonants (Sp 2014).
- 2012 Speech technology work at Toshiba, Science Park, Cambridge, UK (July).

## Service

- 2020 Peer reviewer, *ACM Transactions on Asian and Low-Resource Language Information Processing*.
- 2020 Peer reviewer, *Ear and Hearing*.
- 2018-2019 Peer reviewer, *Journal of Speech, Language, and Hearing Research*.
- 2018 Peer reviewer, *Proceedings of the National Academy of Sciences*.
- 2016-2017 Peer reviewer, *Language and Speech*.
- 2012-2016 Abstract reviewer, 39th, 40th, 41st, 42nd, and 43rd Annual Meeting of the Berkeley Linguistics Society (committee chair for 40th and 42nd meetings).
- 2013-2014 Co-organizer, 40th Annual Meeting of the Berkeley Linguistics Society (BLS 40).
- 2013-2014 Co-organizer, UC Berkeley Phonetics and Phonology Forum (weekly talk series).

## Professional Memberships

- 2019-pres. Association for Research in Otolaryngology
- 2018-pres. Society for Neuroscience

2015-pres. International Phonetic Association  
2012-pres. Linguistic Society of America  
2013-pres. Acoustical Society of America

## Languages

Beginner Tamil  
Intermed. Hindi, Italian  
Dead Latin, Ancient Greek, Sanskrit  
Computer R, Python, Matlab