

## POSITIONS HELD

2020 - Lecturer · Dartmouth College

Instructor of record:

- LING 1: Introduction to Linguistics
- LING 15: Language Acquisition
- LING 11: History of the Arabic Language
- LING 25: Psycholinguistics
- PSYCH 10: Experimental Design, Methodology, and Data Analysis Procedures
- PSYCH 28: Cognitive Psychology
- COGS 1: Introduction to Cognitive Science
- COGS 50: Computational Psychology of Language
- COGS 50: Aphasiology and Neurobiology of Language
- COGS 80: Senior Seminar in Cognitive Science

Researcher focusing on word recognition models for understudied languages using behavioral and neuroimaging methods. Faculty supervisor for Honors student projects and independent studies

2017 - 2020 Postdoctoral Associate · New York University Abu Dhabi

Researcher in Neuroscience of Language Lab focusing on word recognition models in magnetoencephalography. Developing and executing experiments, building and improving Arabic corpora; Managing research assistants, experimental protocols and grant funds

2016 Faculty Associate · Arizona State University

Instructor of record:

- ENG 313: Phonology and Morphology
- LIN 511: Phonetics and Phonology

Faculty supervisor for Honors student projects

2014 - 2015 Research Associate · Qatar Computing Research Institute

Creator of spoken dialectal Arabic corpora built using automatic and human computation (crowdsourcing) classification, used for training of automatic Arabic dialect identification, speech recognition and speech-to-text models

## EDUCATION

2016 Ph.D. Linguistics · University of Arizona

Dissertation: *Decomposability and the effects of morpheme frequency in lexical access*  
Committee: Adam Ussishkin (chair), Michael Hammond, Samira Farwaneh

2013 M.Sc. Human Language Technology · University of Arizona

2008 B.A. Linguistics - English Literature ·  
Western Washington University

## PUBLICATIONS

- (to appear) Cayado, Dave Kenneth\*, **Samantha Wray**, Dustin Chacón, Marco Chia-Ho Lai, Suhail Matar, and Linnaea Stockall. MEG evidence for left temporal and orbitofrontal involvement in breaking down inflected words and putting the pieces back together. *Cortex*.
- (to appear) Stanford, James N. and **Samantha Wray**. Language acquisition and language change. in *The Routledge Handbook of Historical Linguistics*.
- 2023 Cayado, Dave Kenneth\*, **Samantha Wray**, and Linnaea Stockall. Does linear position matter for morphological processing? Evidence from a Tagalog masked priming experiment. *Language, Cognition and Neuroscience*, 38(8): 1167-1182.
- 2022 **Wray, Samantha**, Linnaea Stockall, and Alec Marantz. Early Form Based Morphological Decomposition in Tagalog: MEG evidence from Reduplication, Infixation and Circumfixation. in *Neurobiology of Language*, 3(2): 235-255
- 2022 **Wray, Samantha &** Adam Ussishkin. Productivity effects on morphological processing in Maltese auditory word recognition. in Sims, A., Ussishkin, A., Parker, J., and Wray, S., eds *Morphological Diversity and Linguistic Cognition*. Cambridge University Press.
- 2022 Sims, Andrea, Adam Ussishkin, Jeffrey Parker, and **Samantha Wray**. At the intersection of cognitive processes and linguistic diversity. in Sims, A., Ussishkin, A., Parker, J., and Wray, S., eds. *Morphological Diversity and Linguistic Cognition*. Cambridge University Press.
- (in prep) **Wray, Samantha**. *Productivity modulates decomposition in auditory lexical access: evidence from colloquial Arabic*.
- (in prep) Cayado, Dave Kenneth\*, **Samantha Wray**, Marco Lai, Adam Chong, and Linnaea Stockall. *Breaking down complex words is unaffected by morphological boundary opacity: evidence from MEG and behavioral experiments*.
- (in prep) Cayado, Dave Kenneth\*, **Samantha Wray**, and Linnaea Stockall. Dustin Chacón, Linnaea Stockall, and Alec Marantz. *Seeing affixes everywhere? Evidence for a position-independent recognition of affixes*.

## PUBLICATIONS IN PROCEEDINGS

- 2024 Saddiki, Hind, **Samantha Wray**, and Daisy Li. LexiVault: A repository for psycholinguistic lexicons of lesser-studied languages. in *Proceedings of International Conference on Language Resources and Evaluation (LREC) 2024*.
- 2018 Coto-Solano, Rolando, Sally Akevai Nicholas, and **Samantha Wray**. Development of Natural Language Processing Tools for Cook Islands Maori. in *Proceedings of Australasian Language Technology Association Workshop*.
- 2018 **Wray, Samantha**. Classification of Closely Related Sub Dialects of Arabic Using Support Vector Machines. in *Proceedings of International Conference on Language Resources and Evaluation (LREC) 2018*.
- 2015 **Wray, Samantha &** Ahmed Ali. Crowdsourcing a little to label a lot: labeling a speech corpus of Dialectal Arabic. in *Proceedings of Interspeech 2015*.
- 2015 **Wray, Samantha**, Hamdy Mubarak, and Ahmed Ali. Best Practices for Crowdsourcing Dialectal Arabic Speech Transcription. in *Proceedings of the Second Workshop on Arabic Natural Language Processing*.

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\* Indicates graduate student first author

## PRESENTATIONS

### Conference talks

- 2024, September Cayado, Dave Kenneth\*, **Samantha Wray**, Marco Chia-Ho Lai, Adam Chong, and Linnaea Stockall. "Can the visual system recognize obscured morphemes? Behavioral and MEG evidence from Tagalog prefixation." at the 30th Architectures and Mechanisms for Language Processing (AMLaP) Conference, Edinburgh, United Kingdom
- 2024, August **Wray, Samantha**, Suhail Matar, Sherine Bou Dargham, Linnaea Stockall, and Alec Marantz. "Neuroimaging evidence that Arabic roots are syntactically underspecified." at the 57th Annual Meeting of the Societas Linguistica Europaea (SLE), Helsinki, Finland
- 2024, August **Wray, Samantha** & Hind Saddiki. "LexiVault: a web tool for supporting research on the Arabic lexicon." at the 57th Annual Meeting of the Societas Linguistica Europaea (SLE), Helsinki, Finland
- 2024, July Cayado, Dave Kenneth\*, **Samantha Wray**, and Linnaea Stockall. "Seeing affixes everywhere? Evidence for a position-independent recognition of affixes." at WoProc/MoProc International Word Processing Conference, Belgrade, Serbia
- 2024, February **Wray, Samantha**, Suhail Matar, and Marianne Azar. "Arabic Morphology as a Window into How the Brain Processes Language." at the 37th Annual Symposium on Arabic Linguistics, New York, United States of America
- 2024, February Hermes, Zainab, Benjamin Lang, **Samantha Wray**, Haidee Paterson, Osama Abdullah and Alec Marantz. "An MRI Examination of the Pharyngeal Place of Articulation in Arabic." at the 37th Annual Symposium on Arabic Linguistics, New York, United States of America
- 2023, October Cayado, Dave Kenneth\*, **Samantha Wray**, and Linnaea Stockall. "Does linear position of affixes matter during early morphological processing? Evidence from Tagalog masked priming." at the 30th Austronesian Formal Linguistics Association Conference, Lund, Sweden
- 2022, September Stockall, Linnaea, Dave Kenneth Cayado, Dustin Chacón, Karin Kavcic, Swarnendu Moitra, Christina Manouilidou, Alec Marantz, Suhail Matar, Bojana Ristić, **Samantha Wray** and Rok Žaucer. "Complex word de/recomposition across languages: lexical decision and MEG studies." at Crosslinguistic Perspectives on Processing and Learning, Zurich, Switzerland
- 2022, September Cayado, Dave Kenneth\*, **Samantha Wray**, and Linnaea Stockall. "Morphological recombination in Tagalog: support for a two-stage model." at the 28th Architectures and Mechanisms for Language Processing (AMLaP) Conference, York, United Kingdom
- 2022, June Cayado, Dave Kenneth\*, **Samantha Wray**, and Linnaea Stockall. "Morphological decomposition in Tagalog: a masked priming study on infixation, prefixation, and suffixation." at Austronesian Formal Linguistics Association (AFLA) conference, Manchester, United Kingdom
- 2020, February **Wray, Samantha**. "Morphosyntactic Derivation of the Form VIII Verb: Stuck in the Middle Again." at the 34th Arabic Linguistics Symposium, Tucson, Arizona, United States of America
- 2019, August **Wray, Samantha**, Linnaea Stockall, and Alec Marantz. "Automatic decomposition revisited with MEG evidence from visual processing of Tagalog circumfixes, infixes, and reduplication (Poster Slam)" at Society for Neurobiology of Language (SNL), Helsinki, Finland
- 2019, February Coto-Solano, Rolando, Sally Akevai Nicholas, **Samantha Wray**, and Tyler Peterson. "Accelerating the analysis of your audio recordings with Untrained

- Forced Speech Alignment." at the 6th International Conference on Language Documentation & Conservation, Honolulu, Hawaii, United States of America
- 2018, December Coto-Solano, Rolando, Sally Akevai Nicholas, and **Samantha Wray**. "Development of Natural Language Processing Tools for Cook Islands Maori." at Australasian Language Technology Association Workshop, Dunedin, Aotearoa New Zealand
- 2017, July **Wray, Samantha** & Adam Ussishkin. "Binyan productivity effects on morphological processing in Maltese auditory word recognition." at the Workshop on Morphological Typology and Linguistic Cognition, University of Kentucky, Lexington, Kentucky, United States of America
- 2016, September Ussishkin, Adam, Hadas Velan, Michael Spagnol, Andrew Wedel, and **Samantha Wray**. "Maltese root priming is morphological, not phonological." at the 22nd Architecture and Mechanisms of Language Processing (AMLaP) Conference, Bilbao, the Basque Country
- 2015, June Ussishkin, Adam, Luke Galea, Andrew Wedel and **Samantha Wray**. "Maltese templates and vocalic melodies are phonological: evidence from auditory priming." at the 5th International Conference on Maltese linguistics, Turin, Italy
- 2015, May Ussishkin, Adam, Luke Galea, Andrew Wedel and **Samantha Wray**. "Phonology vs. morphology: How auditory lexical decision in Maltese resolves the conflict." at the 23rd Manchester Phonology Meeting, Manchester, United Kingdom
- 2015, March Coto-Solano, Rolando & **Samantha Wray**. "Distribution of consonantal features in Middle Egyptian verb roots." at 46th Annual Conference of African Linguistics, Eugene, Oregon, United States of America
- 2015, January Ussishkin, Adam, Luke Galea, Andrew Wedel and **Samantha Wray**. "The phonological status of Maltese word patterns: Evidence from auditory priming." at the 89th Annual Meeting of the Linguistics Society of America (LSA), Portland, Oregon, United States of America
- 2013, June Ussishkin, Adam, Luke Galea, Andrew Wedel and **Samantha Wray**. "When visual and auditory processing diverge: evidence from Maltese." at 4th International Conference on Maltese linguistics, Bremen, Germany
- 2012, March **Wray, Samantha**. "Prosodic Features of a Sanaani Arabic Language Game." at the 26th Annual Arabic Linguistics Symposium, New York, New York, United States of America

### Conference posters

- 2024, September **Samantha Wray** & Alec Marantz. "Say that again: is reduplication hearing something twice?" at the 30th Architectures and Mechanisms for Language Processing (AMLaP) Conference, Edinburgh, United Kingdom
- 2024, September Cayado, Dave Kenneth\*, **Samantha Wray**, Dustin Chacón, Marco Chia-Ho Lai, Suhail Matar, and Linnaea Stockall. "Breaking down inflected words and putting the pieces back together involve the left occipitotemporal and orbitofrontal regions: MEG evidence from Tagalog" at the 30th Architectures and Mechanisms for Language Processing (AMLaP) Conference, Edinburgh, United Kingdom
- 2024, July **Wray, Samantha**, Suhail Matar, Sherine Bou Dargham, Alec Marantz and Linnaea Stockall. "Arabic roots are syntactically underspecified: evidence from MEG" at WoProc/MoProc International Word Processing Conference, Belgrade, Serbia
- 2024, January Lang, Benjamin, Zainab Hermes, **Samantha Wray**, Haidee Paterson, Osama Abdullah, Alec Marantz. "Pharyngeal consonants and laryngeal articulation in

Modern Standard Arabic." at the 98th Annual Meeting of Linguistic Society of America (LSA), New York, United States of America

- 2023, October **Wray, Samantha**, Suhail Matar, Sherine Bou Dargham, Alec Marantz and Linnaea Stockall. "Getting to the 'root' of semantic and syntactic processing of morphologically complex words: MEG evidence from Arabic." at Society for Neurobiology of Language (SNL), Marseille, France
- 2023, October Cayado, Dave Kenneth\*, **Samantha Wray**, Marco Chia-Ho Lai, and Linnaea Stockall. "Breaking down complex words is unaffected by morphological boundary opacity: evidence from MEG and behavioral experiments." at Society for Neurobiology of Language (SNL), Marseille, France
- 2023, October Cayado, Dave Kenneth\*, **Samantha Wray**, Marco Chia-Ho Lai, and Linnaea Stockall. "Neurobiological bases of morphological decomposition and recomposition in Tagalog: MEG evidence from inflectional morphology." at Society for Neurobiology of Language (SNL), Marseille, France
- 2023, September Cayado, Dave Kenneth\*, **Samantha Wray**, and Linnaea Stockall. "Seeing affixes everywhere: Position-Independent Recognition of Tagalog Infixes." at the 29th Architectures and Mechanisms for Language Processing (AMLaP) Conference, San Sebastian, the Basque Country
- 2023, September **Wray, Samantha**, Suhail Matar, Alec Marantz and Linnaea Stockall. "Away from the edge: early automatic decomposition of morphologically complex words in Visual Word Form Area." at the 30th Architectures and Mechanisms for Language Processing (AMLaP) Conference, San Sebastian, The Basque Country
- 2022, October **Wray, Samantha**, Suhail Matar, Alec Marantz and Linnaea Stockall. "Localizing early visual word processing for Arabic script." at Society for Neurobiology of Language (SNL), Pennsylvania, United States of America
- 2022, October **Wray, Samantha**, Laura McPherson, Joseph Fausey, Mamadou Diabate, Yong Hoon Chung, Kevin Ortego and Viola Störmer. "When music is language: electroencephalography of a musical speech surrogate." at Society for Neurobiology of Language (SNL), Pennsylvania, United States of America
- 2022, October Cayado, Dave Kenneth\* **Samantha Wray**, and Linnaea Stockall. "Localising and Investigating Morphological Decomposition in Tagalog: an MEG study." at Society for Neurobiology of Language (SNL), Pennsylvania, United States of America
- 2022, September Cayado, Dave Kenneth\*, **Samantha Wray**, and Linnaea Stockall. "Breaking down, breaking down: Tagalog infixed, prefixed, and suffixed words are automatically decomposed in visual word processing." at the 28th Architectures and Mechanisms for Language Processing (AMLaP) Conference, York, United Kingdom
- 2019, September **Wray, Samantha**, Linnaea Stockall, and Alec Marantz. "Breaking down breaking down: automatic decomposition revisited with MEG evidence from visual processing of circumfixes, infixes, and reduplication in Tagalog." at the 25th Architectures and Mechanisms for Language Processing (AMLaP) Conference, Moscow, Russia
- 2019, August **Wray, Samantha**, Linnaea Stockall, and Alec Marantz. "Automatic decomposition revisited with MEG evidence from visual processing of Tagalog circumfixes, infixes, and reduplication." at Society for Neurobiology of Language (SNL), Helsinki, Finland
- 2019, March **Wray, Samantha**, Alec Marantz, and Linnaea Stockall. "Reduplicated words are automatically decomposed, even when they are fake: MEG evidence from Tagalog pseudoreplicants." at the 32nd CUNY Conference on Human Sentence Processing, Boulder, Colorado, United States of America

- 2019, March **Wray, Samantha** & Alec Marantz. "Words in speech decompose to their roots even when the root is interrupted: a study on Emirati Arabic." at Cognitive Neuroscience Society (CNS) Annual Meeting, San Francisco, California, United States of America
- 2018, September **Wray, Samantha** & Alec Marantz. "Phonemic Prediction at the Root for Arabic Words with Prefixes and Infixes." at the 24th Architectures and Mechanisms for Language Processing (AMLaP) Conference, Berlin, Germany
- 2018, May **Wray, Samantha.** "Classification of Closely Related Sub Dialects of Arabic Using Support Vector Machines." at the International Conference on Language Resources and Evaluation (LREC), Miyazaki, Japan
- 2016, October **Wray, Samantha.** "Affix productivity and morpheme frequency in lexical access" at the 10th International Conference on the Mental Lexicon, Ottawa, Canada
- 2015, September **Wray, Samantha** & Ahmed Ali. "Crowdsource a little to label a lot: labeling a speech corpus of Dialectal Arabic." at Interspeech 2015, Dresden, Germany
- 2015, July **Wray, Samantha,** Hamdy Mubarak, and Ahmed Ali. "Best Practices for Crowdsourcing Dialectal Arabic Speech Transcription." at the Second Workshop on Arabic Natural Language Processing, Beijing, China
- 2014, September **Wray, Samantha,** Jennifer Boutz, Valerie Novak and Tim Buckwalter. "Authenticating and supplementing a Yemeni Arabic dictionary using a web corpus." at American Association of Corpus Linguistics, Flagstaff, Arizona, United States of America

#### Demo

- 2015, December Hakouz, Waed, Abdurrahman Ghanem, **Samantha Wray** and Ahmed Ali. "Lahajet: A Game for Classifying Dialectal Arabic Speech." at IEEE Automatic Speech Recognition and Understanding Workshop, Scottsdale, Arizona, United States of America

#### Invited talks

- 2024, April **Wray, Samantha.** "New lessons in psycho- and neurolinguistics from Arabic morphology" at Arabic Linguistics workshop, Georgetown University, Washington DC, United States of America
- 2024, March **Wray, Samantha.** "Say that again: is reduplication hearing something twice?" on panel: The impact of Tagalog on Psycholinguistics and Formal Linguistics, Queen Mary University of London, United Kingdom
- 2024, March **Wray, Samantha.** "Getting to the 'root' of morphological processing: Arabic as a window to the syntactic and phonological interfaces" at Linguistics Department Colloquium, University of Georgia, Athens, Georgia, United States of America
- 2024, March **Wray, Samantha.** "Illuminating language processing by leveraging linguistic diversity" at Linguistics Department Colloquium, Western Washington University, Bellingham, Washington, United States of America
- 2023, November **Wray, Samantha.** on panel "Language and Pain" at Geisel School of Medicine, Dartmouth College, New Hampshire, United States of America
- 2022, September **Wray, Samantha.** "Word, interrupted: processing complex words with discontinuous morphemes." at Linguistics Department Colloquium, Stonybrook University, New York, United States of America
- 2020, November **Wray, Samantha.** "Whats in a word? Phonological transparency in Tagalog

pseudo-reduplicates.” at Applied Phonology course at UCLA, California, United States of America

2019, June

**Wray, Samantha.** “Whats in a word? Neural correlates of morphophonemic processing.” at Dartmouth College, Hanover, New Hampshire, United States of America

2018, December

Coto-Solano, Rolando and **Samantha Wray.** “Forced alignment workshop.” at Jawaharlal Nehru University, New Delhi, India

2016, April

**Wray, Samantha.** “Creating and utilizing colloquial Arabic corpora.” at Arizona State University, Phoenix, Arizona, United States of America

## FELLOWSHIPS, GRANTS AND HONORS

### Inter/National

2021 - 2025

United Kingdom Research and Innovation Economic and Social Research Council (ESRC) - Systematicity and Variation in Word Structure Processing Across Languages: a Neuro-Typology approach (SAVaNT) (co-Investigator, with Principal Investigator Linnaea Stockall and co-Investigators Christina Manouilidou, Dustin Chacón, Rok Žaucer, and Alec Marantz) US\$958,598

2020 - 2023

Abu Dhabi Department of Education and Knowledge - Lisaaniyat: A real-time MRI collection of Arabic speech in motion (co-Investigator, with Principal Investigator Alec Marantz and co-Investigators Ben Lang, Haidee Paterson, Osama Abdullah, and Zainab Hermes) AED300,000 US\$81,677

2015 - 2017

National Science Foundation Doctoral Dissertation Research Improvement Grant - Morphological Decomposition in Arabic (co-Principal Investigator, with Principal Investigator Adam Ussishkin) BCS-1533780, US\$10,711

2013 - 2014

CASA I (Center for Arabic Study Abroad) Fellowship American University Cairo, Egypt + Qasid Institute Amman, Jordan

2011

USDE FLAS (Foreign Languages and Area Studies) Fellowship for Advanced Modern Standard Arabic at Qalam wa Lawh Institute, Rabat, Morocco

### Local

2019

New York University Postdoctoral Research Travel Award - US\$2000 for participating in ICLDC panel

2015

University of Arizona Graduate Interdisciplinary Programs Raphael and Jolene Gruener Research Travel Award - US\$500 for fieldwork in Amman, Jordan

2015

University of Arizona Graduate and Professional Student Council Research and Project Grant - US\$2000 for creation of a colloquial Arabic corpus

2014

University of Arizona Graduate Professional Student Council Travel Grant for professional development - US\$500 for travel to present at AACL

2012

University of Arizona Graduate Professional Student Council Travel Grant for professional development - US\$500 for travel to present at Arabic Linguistics Symposium

2011

University of Arizona Social and Behavioral Sciences Research Institute Pre-doctoral grant, coawardee: Kevin Schluter - US\$500 for creation of Palestinian word familiarity materials

2010

University of Arizona Graduate and Professional Student Council Student Showcase for poster Sanaani language games - First Place Winner Languages and Literature Category

## ACADEMIC SERVICE

|                       |  |
|-----------------------|--|
| <i>Grant review</i>   | National Science Foundation  |
| <i>Journal review</i> | Australian Journal of Linguistics<br>Poznan Studies in Contemporary Linguistics<br>Language and Speech<br>Journal of Phonetics       |
| 2020                  | Reviewer · 34th Arabic Linguistics Symposium   |
| 2019                  | Reviewer/Program Committee · Neuroscience of Language Conference (NeuroLang-AD)  |
| 2019                  | Organizing Committee · Neuroscience of Language Conference (NeuroLang-AD)  |
| 2017                  | Reviewer/Program Committee · 6th International Conference on Maltese Linguistics   |
| 2017                  | Reviewer/Program Committee · Morphological Typology and Linguistic Cognition Workshop - 2017 Linguistic Society of America Institute |
| 2017                  | Organizing committee · Morphological Typology and Linguistic Cognition Workshop - 2017 Linguistic Society of America Institute       |
| 2015                  | Reviewer/Program Committee · Arabic Natural Language Processing Workshop (co-located with ACL)                                       |
| 2015                  | Mentor · "Hot Summer Cool Research" Internship Program at Qatar Computing Research Institute   |
| 2012 - 2013           | Lab Manager · Psycholinguistics and Computational Linguistics Lab (PsyCol) at the University of Arizona                              |
| 2012                  | Outreach Committee · Linguistics Department at the University of Arizona   |
| 2012                  | Organizing Committee · Arizona Linguistics Circle Conference   |
| 2011 - 2012           | President · Arizona Linguistics Circle, Linguistics Graduate Council at the University of Arizona                                    |
| 2011                  | Organizing Committee · Arizona Linguistics Circle Conference   |
| 2010 - 2011           | Treasurer · Arizona Linguistics Circle, Linguistics Graduate Council at the University of Arizona                                    |