Laura Gwilliams

Department of Neurological Surgery
University of California, San Francisco
505 Parnassus Avenue, M779
San Francisco, CA 94143

Phone: +1 (415) 353 7500
Email: laura.gwilliams@ucsf.edu
Home: http://lauragwilliams.github.io
ORCID iD: 0000-0002-9213-588X

Education

2015–2020 *Ph.D., Psychology (focusing on Cognitive Neuroscience)*
New York University, USA
Thesis Title: Towards a mechanistic account of speech comprehension
Supervisors: Alec Marantz and David Poeppel
Committee: Eero Simoncelli, Liina Pylkkänen, Nima Mesgarani

2012–2013 *M.Sc., Cognitive Neuroscience of Language*
Basque Center on Cognition, Brain and Language (BCBL), Spain
Supervisors: Arthur Samuel and Phillip Monahan

2009–2012 *B.A., Linguistics*
Cardiff University, UK
Supervisor: Lise Fontaine

Research positions

2020-present *Post-doctoral Fellow*, Chang Lab
University of California, San Francisco
Supervisors: Edward Chang and Matthew Leonard

2013–2015 *Research Assistant*, Neuroscience of language lab
New York University Abu Dhabi
Supervisors: Alec Marantz and Liina Pylkkänen

Awards and Scholarships

2022 *Trainee Professional Development Award*, Society for Neuroscience (SfN)

2021 *Glushko Dissertation Prize*, The Cognitive Science Society

2021 *Douglas H. and Katharine Fryer Thesis Award*, New York University
(Award for Best Doctoral Thesis)

2020 *Dissertation Award*, Society for the Neurobiology of Language

2020 *Martin Braine Fellowship*, New York University

2019 *William Orr Dingwall Dissertation Fellowship*
Fellowship in the Cognitive, Clinical, and Neural Foundations of Language

2019 *Facebook PhD Fellowship*, Facebook (Finalist)

2018 *Trainee Professional Development Award*, Society for Neuroscience (SfN)

2018 *Poster Prize*, Salzburg Mind Brain Annual Meeting (SAMBA)

2018 *Travel Award*, Society for the Neurobiology of Language Conference

2018 *Travel Award*, Cognitive Modelling and Computational Linguistics

2017 *Travel Award*, Cognitive Computational Neuroscience Conference

2016 *Dean's Travel Grant*, New York University

2016 *Travel Award*, Society for the Neurobiology of Language Conference

2016 *Helmsley Fellowship* Cold Spring Harbor
(Genetics and Neurobiology of Language Course attendance fee)

2015 *Henry M. MacCracken Fellowship*, New York University
(Full funding of PhD tuition and maintenance)

2012 *Tuition Waiver*, Basque Center on Cognition, Brain and Language

2012 *Dell Hymes Commendation for Academic Achievement*, Cardiff University
(Awarded to the top graduating student within the department)

Publications

Preprints & Manuscripts

[1] ***Gwilliams, L.**, *Leonard, M.K., Sellers, K.K., Chung, J.E., Dutta, B., & Chang, E.F. (in prep). Single neuron encoding of speech across cortical layers of the human superior temporal gyrus.

[2] ***Gwilliams, L.**, *Metzger, S., *Xu, D., Leonard, M.K., Sellers, K.K., Chung, J.E., Dutta, B., & Chang, E.F. (in prep). Articulator encoding in human single neurons of motor cortex during listening and speaking.

[3] **Gwilliams, L.**, Marantz, A., Poeppel, D. & King, JR. (in prep). Parsing continuous speech into linguistic representations.

[4] ElShafei, H., **Gwilliams, L.**, Cousijn, H., Harrison, P., Nobre, A. & Haegens, S. (submitted). Distinct roles for alpha and beta oscillations in information maintenance in working memory.

[5] ***Gwilliams, L.**, *Brooks, T., Gramfort, A. & Marantz, A. (in prep). Modelling stages of word recognition with concurrent eye-tracking and MEG recordings.

[6] **Gwilliams, L.**, Flick, G., Marantz, A., Pylkkanen, L., Poeppel, D. & King, J.R. (submitted). MEG-MASC: a high-quality magento-encephalography dataset for evaluating natural speech processing. arXiv

[7] Zuanazzi, A., Ripollés, P., Lin, WM., **Gwilliams, L.**, *King, JR & *Poeppel, D (submitted). Tracking the online construction of linguistic meaning through negation. bioRxiv

[8] **Gwilliams, L.**, Marantz, A., Poeppel, D. & King, J.R. (under review). Top-down information flow drives lexical access when listening to continuous speech. bioRxiv

[9] **Gwilliams, L.**, & Wallisch, P. (under review). Immediate ambiguity resolution in speech perception based on prior acoustic experience. PsyArXiv

Peer-reviewed articles

[10] *Chung, J.E., *Sellers, K.K., Leonard, M.K., **Gwilliams, L.**, Xu, D., Dougherty, M., Kharazia, V., Welkenhuysen. M., Dutta, B., Chang, E.F. (2022). High density single-unit human cortical recordings using the Neuropixels probe. *Neuron*. DOI: 10.1016/j.neuron.2022.05.007

[11] **Gwilliams, L.**, King, JR., *Marantz, A. & *Poeppel, D. (2022). Neural dynamics of phoneme sequences: Position-invariant code for content and order. *Nature Communications*. DOI: 10.1038/s41467-022-34326-1

[12] Dikker, S., Mech, EM., **Gwilliams, L.**, West, T., Dumas, G. & Federmeier, KD. (2022). Exploring age-related changes in inter-brain synchrony during verbal communication. *Psychology of Learning and Motivation*. DOI: 10.1016/bs.plm.2022.08.003

[13] Iemi, L., **Gwilliams, L.**, Samaha, J., Auksztulewicz, R., Cycowicz, Y., King, JR., Thesen, T., Doyle, W., Devinsky, O., Schroeder, C.E., Melloni, L. & Haegens, S. (2021). Ongoing neural oscillations influence behavior and sensory representations by suppressing neuronal excitability. *NeuroImage*. DOI: 10.1016/j.neuroimage.2021.118746

[14] ***Gwilliams, L.**, *Blanco-Elorrieta, E., Marantz, A. & Pylkkänen, L. (2021). Perceptual adaptation to accented speech: prefrontal cortex aids attunement in auditory cortices. *Nature Scientific Reports*. DOI: 10.1038/s41598-020-79640-0

[15] **Gwilliams, L**. & King, JR. (2020). Recurrent processes support a cascade of hierarchical decisions. *eLife*. DOI: 10.7554/eLife.56603

[16] Dikker, S., Assaneo, F., **Gwilliams, L.**, Wang, L. & Kösem, A. (2020). MEG and Language: Using Magnetoencephalography to Study the Neural Basis of Language. *Neuroimaging Clinics of North America*. DOI: j.nic.2020.01.004

[17] **Gwilliams, L**. (2020). Hierarchical oscillators in speech comprehension: A commentary on Meyer, Sun & Martin. *Language, Cognition and Neuroscience*. DOI: 10.1080/23273798.2020.1740749

[18] **Gwilliams, L**. (2019). How the brain composes morphemes into meaning. *Philosophical Transactions of the Royal Society B*. DOI: 10.1098/rstb.2019.0311

[19] Stockall, L., Manouildiou, C., **Gwilliams, L.**, Neophytou, K., & Marantz, A. (2019). Prefix Stripping Re-Re-Re-visited: MEG Evidence. *Frontiers in Psychology*. DOI: 10.3389/fpsyg.2019.01964

[20] **Gwilliams, L.**, Linzen, T., Poeppel, D., & Marantz, A. (2018). In spoken word recognition the future predicts the past. *Journal of Neuroscience*. DOI: 10.1523/JNEUROSCI.0065-18.2018

[21] **Gwilliams, L.**, Poeppel, D., Marantz, A., & Linzen, T. (2018). Phonological (un)certainty weights lexical activation. In *Proceedings of the 8th Workshop on Cognitive Modeling and Computational Linguistics (CMCL 2018)* (pp. 29-34). arXiv

[22] **Gwilliams, L**. & Marantz, A. (2018). Morphological representations are extrapolated from morpho-syntactic rules. *Neuropsychologia*. DOI: 10.1016/j.neuropsychologia.2018.04.015

[23] Brodbeck, C., **Gwilliams, L**. & Pylkkänen, L. (2016). Language in context: MEG evidence for modality general and specific responses to reference resolution. *eNeuro*. DOI: 10.1523/ENEURO.0145-16.2016

[24] **Gwilliams, L.**, Lewis, G. & Marantz, A. (2016). Functional characterisation of letter-specific responses in time, space and current polarity using magneto-encephalography. *NeuroImage*. DOI: 10.1016/j.neuroimage.2016.02.057

[25] Brodbeck, C., **Gwilliams, L**. & Pylkkänen, L. (2015). EEG can track the time course of reference resolution in small visual worlds. *Frontiers in Psychology*. DOI: 10.3389/fpsyg.2015.01787

[26] **Gwilliams, L**. & Marantz, A. (2015). Tracking non-linear prediction in a linear speech stream: Influence of morphological structure on spoken word recognition. *Brain and Language*. DOI: 10.1016/j.bandl.2015.04.006

[27] **Gwilliams, L.**, Monahan, P., & Samuel, A. (2015). Sensitivity to morphological composition: Evidence from grammatical and lexical decision tasks. *Journal of Experimental Psychology: Language, Memory and Cognition*. DOI: 10.1037/xlm0000130

[28] **Gwilliams, L**. & Fontaine, L. (2015). Indeterminacy in process type classification. *Functions of Language*. DOI: 10.1186/s40554-015-0021-x

[29] Politzer-Ahles, S. & **Gwilliams, L**. (2015). Involvement of prefrontal cortex in scalar implicatures: Evidence from magnetoencephalography. *Language and Cognitive Neuroscience*. DOI: 10.1080/23273798.2015.1027235

Conference proceedings

[30] **Gwilliams, L.**, & King, JR. (2017). Performance-optimized hierarchical models only partially predict neural responses during perceptual decision making. *NIPS workshop: Cognitively Informed Artificial Intelligence: Insights From Natural Intelligence* bioRxiv

[31] **Gwilliams, L.**, & King, JR. (2017). Perceptual decision making unfolds in a processing cascade within and across brain regions. *Cognitive Computational Neuroscience*.

Published Datasets, Corpora and Open Source Code

[1] *Lewis, G., *van Rijn, P., **Gwilliams, L.**, Larrouy-Maestri, P., Poeppel, D. & Ghitza, O. NyU-BU contextually controlled stories Corpus: NUBUC. DOI: 10.5281/zenodo.4075183

[2] **Gwilliams, L.**, Flick, G., Marantz, A., Pylkkanen, L., Poeppel, D. & King, J.R. (submitted). MEG-MASC: a high-quality magento-encephalography dataset for evaluating natural speech processing. arXiv

[3] Waskom, M., Larson, E., Brodbeck, C., Gramfort, A., Burns, S ... **Gwilliams, L.**, King, JR., Liu, D. nipy/PySurfer:0.10.0. [Link]

[4] Larson, E., Gramfort, A., Engemann, DA., Leppakangas, J., Brodbeck, C ... **Gwilliams, L.**, ... mne-python-v1.2.0 [Link]

Book chapters

[1] **Gwilliams, L.** & Davis, M.H. (2021). Extracting language content from speech sounds: The information theoretic approach. In *The Auditory Cognitive Neuroscience of Speech Perception*. Link

[2] **Gwilliams, L.** & Marantz, A. (in press). Neural processing of morphological structure in speech production, listening and reading. In *Current Issues in the Psychology of Language*.

[3] Stockall, L. & **Gwilliams, L.** (in press). Distributed morphology and neurolinguistics. In *The Cambridge Handbook of Distributed Morphology*.

[4] King, JR., **Gwilliams, L.**, Holdgraf, C., Sassenhagen, J., Barachant, A., Engemann, D., Larson, E. & Gramfort, A. (2020). Encoding and Decoding Framework to Uncover the Algorithms of Cognition. In *The Cognitive Neurosciences*.

Presentations

Invited talks

[1] **Gwilliams, L.** (2022, December). Computational architecture of speech comprehension. *NeuroSpin*. Paris, France.

[2] **Gwilliams, L.** (2022, November). Computational architecture of speech comprehension. *Psycholinguistics of Language Representation (PoLaR) Lab at UiT the Arctic University of Norway*. Tromsø, Norway.

[3] **Gwilliams, L.** (2022, July). Parsing continuous speech into lexically bound sequences. *19th SIGMORPHON Workshop, NAACL*. Seattle, USA.

[4] **Gwilliams, L**. (2022, May). The computational architecture of speech comprehension. *Meta AI and ENS*. Paris, France.

[5] **Gwilliams, L**. (2022, March). The computational architecture of speech comprehension. *Max Planck Institute for Psycholinguistics*. Special Talk Series. Neurobiology of language: Key issues and ways forward II.

[6] **Gwilliams, L**. (2022, February). The computational architecture of speech comprehension. *New York University*. New York, USA.

[7] **Gwilliams, L**. (2021, November). Decoding the neural architecture of speech comprehension. *Duke University*, Duke Institute for Brain Sciences. North Carolina, USA.

[8] **Gwilliams, L**. (2021, April). Decoding the neural architecture of speech comprehension. *University of Massachusetts Amherst*, Linguistics Department. Amherst, USA.

[9] **Gwilliams, L**. (2021, April). Computational models of speech comprehension using neural time series. *University of California, Davis*. Davis, USA.

[10] **Gwilliams, L**. (2021, March). Decoding the neural architecture of speech comprehension. *University of Oxford*. Oxford, UK.

[11] **Gwilliams, L**. (2021, January). Decoding the neural architecture of speech comprehension. *Institute of Neuroscience and Psychology, University of Glasgow*. Glasgow, UK.

[12] **Gwilliams, L**. (2020, December). MEG studies of morphological representations. *Mini-Workshop on Morphological Processing*.

[13] **Gwilliams, L**. (2020, December). Decoding the neural architecture of speech comprehension. *University of Maryland*. Maryland, USA.

[14] **Gwilliams, L**. & King, JR. (2020, October). Is it that simple? The use of linear models in cognitive neuroscience. *Cognitive Computational Neuroscience*. Generative Adversarial Collaborations Debate.

[15] **Gwilliams, L**. (2020, October). Rapid transformation of phoneme sequences into (sub)lexical units. *Society for the Neurobiology of Language*. Symposia presentation.

[16] **Gwilliams, L**. (2020, October). Towards a mechanistic account of speech comprehension. *Society for the Neurobiology of Language*. Dissertation award talk.

[17] **Gwilliams, L**. (2020, July). Neural dynamics of phoneme sequencing. *Martin Lab, Max Planck Institute for Psycholinguistics*. Nijmegen, The Netherlands.

[18] **Gwilliams, L**. (2020, January). Recurrent processes emulate a cascade of hierarchical decisions. *Kriegeskorte Lab, Columbia University*. New York City, USA.

[19] **Gwilliams, L**. (2019, September). How can we model the computations of human language perception? *Cognitive, computational neuroscience: Breakout session host*. Berlin, Germany.

[20] **Gwilliams, L**. (2019, July). Transforming acoustic input into a hierarchy of linguistic representations. *Max Planck Institute for Empirical Aesthetics*. Frankfurt, Germany.

[21] **Gwilliams, L**. (2019, June). Transforming acoustic input into a hierarchy of linguistic representations. *BCBL*. Donostia, Basque Country.

[22] **Gwilliams, L**. (2019, May). Transforming acoustic input into a hierarchy of linguistic representations. *Bedny Lab, Johns Hopkins University*. Baltimore, USA.

[23] **Gwilliams, L**. (2019, April). Towards a mechanistic account of speech comprehension in the human brain. *University of Maryland*. Maryland, USA.

[24] **Gwilliams, L**. (2019, February). Transforming acoustic input into a hierarchy of linguistic representations. *École Normale Supérieure & Facebook AI Research*. Paris, France

[25] **Gwilliams, L**. (2018, December). Parsing continuous speech into linguistic representations. *Mesgarani Lab, Columbia University*. New York, USA.

[26] **Gwilliams, L**. (2018, November). Towards a mechanistic account of speech comprehension in the human brain. *brainLENS Lab, UCSF*. San Fransisco, USA.

[27] **Gwilliams, L**. (2018, October). From brain responses to algorithms: advances in parsing the computational architecture of perceptual decision making with MEG and machine learning. *Perception and Brain Dynamics Lab, NYU Langone Medical Center*. New York, USA.

[28] **Gwilliams, L**. (2018, August). Towards a mechanistic account of speech comprehension in the human brain. *Trueswell Lab, University of Pennsylvania*. Philadelphia, USA.

[29] **Gwilliams, L**. (2018, July). Towards a mechanistic account of speech comprehension in the human brain. *Max Planck Institute for Empirical Aesthetics*. Frankfurt, Germany.

[30] **Gwilliams, L**. (2018, March). Back to the future: Investigating the neural mechanisms supporting speech comprehension. *Chang Lab, UCSF*. San Fransisco, USA.

[31] **Gwilliams, L**. (2018, February). Back to the future: Investigating the neural mechanisms supporting speech comprehension. *Neuroscience Society, Columbia University*. USA.

[32] **Gwilliams, L**. (2018, January). Postdictive processing in spoken word recognition. *Mesgarani Lab, Columbia University*. New York, USA.

[33] **Gwilliams, L**. (2017, October). Decomposing hierarchical perceptual decision making. *Shadlen Lab, Columbia University*. New York, USA.

[34] **Gwilliams, L**. (2017, June). In spoken word recognition the future predicts the past. *Cognition and Brain Sciences Unit, Cambridge University*. Cambridge, UK.

[35] **Gwilliams, L**. (2016, November). In spoken word recognition the future predicts the past. *HLP Lab, University of Rochester*. New York, USA.

[36] **Gwilliams, L**. & Marantz, A. (2016, February). Taking morphology seriously: MEG studies of morphological representations. *Presentation at 17th international morphology meeting*. Vienna, Austria.

Slide presentations

[1] ***Gwilliams, L**., *Leonard, M.K., Sellers, K.K., Chung, J.E., Dutta, B., & Chang, E.F. (2022, October). Single neuron encoding of speech across cortical layers of the human superior temporal gyrus. Presentation at *Neurobiology of Language Conference*. Philadelphia, USA.

[2] *Abrams, E., ***Gwilliams, L**. & Marantz, A. (2019, August). Tracking the building blocks of pitch perception in auditory cortex. Presentation at *The Society for Music Perception and Cognition conference (SMPC)*. New York, USA.

[3] **Gwilliams, L**. & King, JR. (2018, August). From brain responses to algorithms: advances in parsing the computational architecture of perceptual decision making with MEG and machine learning. *Symposia presentation, BioMag*. Philadelphia, USA.

[4] **Gwilliams, L**., King, JR. & Poeppel, D. (2018, August). Parsing continuous speech into linguistic representations. Presentation at the *Society for the Neurobiology of Language Conference*. Québec City, Canada.

[5] **Gwilliams, L**., Poeppel, D. & Marantz, A., Linzen, T. (2018, January). Phonological (un)certainty weights lexical activation. Presentation at *Cognitive Modelling and Computational Linguistics (CMCL)*. Salt Lake City, USA.

[6] **Gwilliams, L**., Linzen, T., Neophytou, K., Poeppel, D. & Marantz, A. (2016, September). Phonological commitment and sensitivity to subphonemic detail are independent. Presentation at *AMLAP*. Bilbao, Basque Country.

[7] Stockall, L., Manouilidou, C. **Gwilliams, L**. & Marantz, A. (2016, February). Un/Re-packing argument and event structure restrictions on prefixation: MEG evidence. *Workshop on the syntax of argument structure: empirical advancements and theoretical relevance*. Leipzig, Germany.

[8] **Gwilliams, L**. & Marantz, A. (2015, June). Abstract representation of the root morpheme: A magnetoencephalography study of spoken Arabic. Presentation at *The 9th Morphological Processing Conference*. Potsdam, Germany.

[9] **Gwilliams, L**. & Marantz, A. (2015, March). Decomposition of spoken Arabic words into root morphemes during processing: Evidence from magnetoencephalography. Presentation at *Linguistics in the Gulf 5 Conference*. Doha, Qatar.

[10] **Gwilliams, L**. & Marantz, A. (2015, March). Letter specific sensitivities in the brain: located in time, space and current direction. Presentation at *The Neuroscience of Language Workshop*, Abu Dhabi, UAE.

[11] **Gwilliams, L**. & Marantz, A. (2015, February). Non-linear processing of a linear speech stream. Presentation at *The NYUAD Annual Research Conference*, Abu Dhabi, UAE.

[12] **Gwilliams, L**. & Fontaine, L. (2014, July). Ambiguity in process type selection in systemic functional linguistics. Presentation at *The 25th European Systemic Functional Linguistics Conference*. Paris, France.

[13] Brodbeck, C., **Gwilliams, L**. & Pylkkänen, L. (2014, February). Reference resolution and prediction in a visual world: MEG evidence from English and Arabic. Presentation at *The NYUAD Annual Research Conference*. Abu Dhabi, UAE.

Poster presentations

[1] ***Gwilliams, L**., *Leonard, M.K., Sellers, K.K., Chung, J.E., Dutta, B., & Chang, E.F. (2022, November). Single neuron encoding of speech across cortical layers of the human superior temporal gyrus. Poster presented at *Society for Neuroscience*. San Diego, USA.

[2] Degano, G., Donhauser, P., ***Gwilliams, L**., Merlo., P. & Golestani, N. (2022, November). Prosodic cues enhance the encoding of syntactic information during naturalistic speech perception. Poster presented at *Society for Neuroscience*. San Diego, USA.

[3] Zuanazzi, A., Ripollés, P., Lin, WM., **Gwilliams, L**., *King, JR & *Poeppel, D (2022, October). Behavioral and neural dynamics of negation. Poster presented at *Neurobiology of Language Conference*. Philadelphia, USA.

[4] Lang, B., ***Gwilliams, L**., Blanco-Elorrieta, E. & Marantz, A. (2020, October). Do bilinguals better discriminate novel vowel contrasts? Neural correlates of perceptual assimilation using MEG decoding. Poster presented at *Society for Neurobiology of Language*. Virtual conference.

[5] *Abrams, E., ***Gwilliams, L**. & Marantz, A. (2019, October). Tracking the building blocks of pitch perception in auditory cortex. Dynamic poster presented at *Society for Neuroscience*. Chicago, USA.

[6] **Gwilliams, L**., Poeppel, D. & King, JR. (2019, March). Parsing continuous speech into linguistic representations. Poster presented at the *Cognitive Neuroscience Society Conference (CNS)*. San Fransisco, USA.

[7] **Gwilliams, L**., King, JR. & Poeppel, D. (2018, November). Parsing continuous speech into linguistic representations. Poster presented at *Society for Neuroscience*. San Diego, USA.

[8] **Gwilliams, L**. & King, JR. (2018, August). Identifying the neural architecture of perceptual decision making with normative, shallow and deep neural network approaches. Poster presented at *BioMag*. Philadelphia, USA.

[9] **Gwilliams, L**. & King, JR. (2018, July). Perceptual decision making is supported by a hierarchical processing cascade in both biological and artificial neural networks. Poster presented at *cuttingEEG*. Paris, France.

[10] **Gwilliams, L**. & King, JR. (2018, July). Perceptual decision making is supported by a hierarchical processing cascade in both biological and artificial neural networks. Poster presented at the *Salzburg Mind Brain Annual Meeting (SAMBA)*. Salzburg, Austria.

[11] **Gwilliams, L**. & King, JR. (2018, March). Perceptual decision making is supported by a hierarchical processing cascade in both biological and artificial neural networks. Poster presented at the *Cognitive Neuroscience Society conference (CNS)*. Boston, USA.

[12] ***Gwilliams, L**., *King, JR. & Poeppel, D. (2017, November). Decoding how the human brain parses continuous speech into linguistic representations. Dynamic poster presented at the *Society for Neuroscience*. Washington D.C., USA.

[13] **Gwilliams, L**. & King, JR. (2017, November). Uncovering the cascade of computations involved in ambiguity resolution: Decoding from MEG and neural network activity. Poster presented at the *2017 Society for the Neurobiology of Language Conference*. Baltimore, USA.

[14] **Gwilliams, L**. & King, JR. (2017, September). Perceptual decision making unfolds in a processing cascade within and across brain regions. Poster presented at *Annual Conference on Cognitive Computational Neuroscience*. New York, USA.

[15] **Gwilliams, L**. Linzen, T., Neophytou, K., Poeppel, D. & Marantz, A. (2016, September). Phonological commitment and sensitivity to subphonemic detail are independent Presentation at the *Society for the Neurobiology of Language*. London, UK.

[16] Mow, J., **Gwilliams, L**., Khalighinsjad, B., Mesgarani, N. & Marantz, A. (2016, September). Encoding and organisation of phonemes by feature in STG. Poster presentation at the *Society for the Neurobiology of Language*. London, UK.

[17] **Gwilliams, L**. Linzen, T., Neophytou, K., Warnke, L., Poeppel., D & Marantz, A. (2016, April). Early and asymmetric sensitivity to phonological boundaries and within-category variation across hemispheres. Poster presented at the *2016 CNS Annual meeting*. New York, USA

[18] Brodbeck, C., **Gwilliams, L**. & Pylkkänen, L. (2016, April). Amodal reference resolution in medial parietal cortex. Poster presented at the *2016 CNS Annual meeting*. New York, USA

[19] **Gwilliams, L**. Linzen, T., Neophytou, K., Warnke, L., Poeppel., D & Marantz, A. (2016, March). Phoneme ambiguity is reflected very early in primary auditory cortex. Poster presented at the *29th Annual CUNY Conference on Human Sentence Processing*. Florida, USA

[20] Brodbeck, C., **Gwilliams, L**. & Pylkkänen, L. (2016, March). Modality general and specific brain responses during reference resolution. Poster presented at the *29th Annual CUNY Conference on Human Sentence Processing*. Florida, USA

[21] **Gwilliams, L**. & Marantz, A. (2015, October). Representations stems you can't see: An MEG study of morphological decomposition. Poster presented at the *Society for the Neurobiology of Language Conference*. Chicago, USA

[22] Stockall, L., **Gwilliams, L**. Manouilidou, C. & Marantz, A. (2015, October). Access to lexical category and verb argument structure in the early stages of processing. Poster presented at the *Society for the Neurobiology of Language Conference*. Chicago, USA

[23] Gaston, P., **Gwilliams, L**. & Marantz, A. (2015, October). The time-course of cohort restriction in syntactic context: MEG evidence for a single auditory word-form. Poster presented at the *Society for the Neurobiology of Language Conference*. Chicago, USA

[24] Oseki, Y., **Gwilliams, L**., Blanco-Elorrieta, E., Gaston, P., Pylkkänen, L. & Marantz, A. (2015, October). Neural Dynamics of Morphological and Phrasal Composition. Poster presented at the *Society for the Neurobiology of Language Conference*. Chicago, USA

[25] Brodbeck, C., **Gwilliams, L**. & Pylkkänen, L. (2015, October). EEG can track the time course of successful reference resolution in small visual worlds. Poster presented at the *Society for the Neurobiology of Language Conference*. Chicago, USA

[26] **Gwilliams, L**., Lewis, G. & Marantz, A. (2014, August). Revealing the cortical dynamics of letter string perception. Poster presented at the *Society for the Neurobiology of Language Conference*. Amsterdam, Netherlands

[27] Linzen, T., Gaston, P., **Gwilliams, L**. & Marantz, A. (2014, August). Competition and prediction in the auditory processing of morphologically complex words. Poster presented at the *Society for the Neurobiology of Language Conference*. Amsterdam, Netherlands.

[28] **Gwilliams, L**., Monahan, P, & Samuel, A. (2013, June). Why an Avalanche is faster than an Explosion. Poster presented at *The 8th international morphological processing conference*. Cambridge, UK.

[29] **Gwilliams, L**., Monahan, P., & Samuel, A. (2013, March). Decompositional processing of nominalisations. Poster presented at the *Basque Center on Cognition, Brain and Language (BCBL)*. San Sebastian, Spain.

Teaching

2021&2022	*Guest Lecturer*, New York University
	Linguistics and Cognitive Science, Undergraduate
	Instructor: Alec Marantz
2021	*Instructor*: Cognition and Natural Sensory Processing Workshop
	Decoding models
2021	*Instructor*, Universitat Rovira
	Neurolinguistics Summer Course
	Experimental design, neural recording techniques and statistical methods
2018-2020	*Tutor*, New York University
	Advanced Stats, Undergraduate
	Instructor: Pascal Wallisch
2018	*Teaching Assistant*, New York University
	Cognition, Undergraduate
	Instructor: Pascal Wallisch
2018	*Guest Lecturer*, Columbia University
	Cognitive Neuroscience, Undergraduate
2017	*Guest Lecturer*, New York University
	Problem of Babel, Undergraduate
	Instructor: Alec Marantz
2016	*Teaching Assistant*, New York University
	Mathematical Tools for Cognitive and Neural Science, Graduate
	Instructor: Eero Simoncelli
2016	*Guest Lecturer*, New York University
	Neural Bases of Language: Auditory Lexical Access, Undergraduate
	Instructor: Liina Pylkkänen

2016 *Guest Lecturer*, New York University

Linguistics as a Cognitive Science, Undergraduate

Instructor: Alec Marantz

2016 *Guest Lecturer*, New York University

Neural Bases of Language: Perceptual Attunement, Undergraduate

Instructor: Liina Pylkkänen

Supervision

2022 *Alvincé Pongos*, PhD Student, UC Berkeley Bio Engineering

Project: *Neural encoding of grammatical class during natural listening*

2022 *Jenn DiSanto*, UCSF lab rotation student

Project: *Recurrent processes support speech-sound perception*

2020 *Praxal Patel*, Center for Data Science Summer Project, New York University

Project: *Developing automated neural data analysis tools for neuro-typical and a-typical populations*

2019–2020 *Ben Lang*, Research Assistant, New York University

2019–2020 *Ellie Abrams*, Research Assistant, New York University

2017 *Jessa Alexander*, Intern, New York University

2017 *Anna Cho*, Honours student, New York University

Project: *Neurological mechanisms of perceptual attunement to accented speech*

2015–2016 *Lena Warnke*, Honours student, New York University

Project: *Unconscious, arbitrary visual symbols as a cue for phoneme identification*

Service

2022	Thesis Committee	Juliett Millet, *Université de Paris*
2022	Thesis Committee	Théo Desbordes, *Meta AI & Neurospin*
2022–	Program Committee	*Cognitive Computational Neuroscience*
2020–2022	Review editor	*Frontiers in Psychology*
Ad-hoc	Reviewer	*Nature Neuroscience, PNAS, eLife, PLOS Biology, Journal of Neuroscience, NeuroImage, Human Brain Mapping, Cognition, Frontiers in Neuroscience, Glossa, Neurobiology of Language, Experimental Psychology, European Journal of Neuroscience, Mind Brain & Education, Cerebral Cortex, Psychonomic Bulletin & Review, Brain & Language, PLOS ONE, Cortex*
Ad-hoc	Reviewer	*National Science Foundation (USA)*