Evie A. Malaia

University of Alabama Department of Communicative Disorders
145 Speech and Hearing Center, Tuscaloosa, AL 35487
eamalaia@ua.edu
Web: https://malaia.people.ua.edu/

Research Areas

- Computational neurolinguistics and communication modeling
- Neuroplasticity for communicative disorders
- Sign language production and neural processing
- Perception, cognition, and language interfaces in linguistically diverse populations

Employment

2018 – present	Associate Professor, University of Alabama
2017 – 2018	Marie Curie Senior Fellow, Freiburg Institute for Advanced Studies
2015 – 2016	EURIAS Fellow, Netherlands Institute for Advanced Studies
2011 – 2015	Assistant Professor, University of Texas at Arlington
2010 – 2011	Assistant Scientist, Indiana University
2005 – 2010	Research Scientist, Purdue University

Education

2001 - 2005	**Ph.D.** in Linguistics, Purdue University
1999 - 2001	**M.S.** in Applied Linguistics, Chuvash State Pedagogical University, Russia
1996 - 1999	**B.S.** in Applied Linguistics, Chuvash State Pedagogical University, Russia

Awards and Grants

National Science Foundation, Co-PIs Sevgi Gurbuz, Chris Crawford, Darrin Griffin, Supplement to the grant RF Sensing in Sign Language-Driven Smart Environments, $67,128 (2022-2023)

National Science Foundation, Co-PIs Sevgi Gurbuz, Chris Crawford, Darrin Griffin, RF Sensing in Sign Language-Driven Smart Environments, $366,251 (2019-2022)

National Science Foundation, Co-PIs Ronnie B. Wilbur, Jeff Siskind**,** NCS-FO: Neuroimaging to Advance Computer Vision, NLP, and AI, $1,000,000 (2017-2022)

Alabama Life Research Institute pilot grant, Co-PI Firat Soylu, Brain pathways for perception-to-cognition in ASD, $25,000 (2019 – 2022)

University of Alabama College Academy for Research, Co-PI Angie Barber, Training in Autism Diagnostic Observation Scale (ADOS-2), $6,000 (2019 – 2020)

Excellence in Research Award, Purdue University

Maria Curie Senior Fellowship Role of visual and linguistic complexity in language development, €100,000 (2017 –2018)

Certificate of Merit in Research Advising, National Academic Advising Association (2015)

Association of Psychological Science Award for Teaching and Public Understanding of Psychological Science, EEG workshop in Eastern Europe, $5,000 (2015-2016)

EURIAS Junior Fellowship Development of cross-frequency network analysis technique for EEG data, €80,000 (2015 –2016)

Outstanding Research Advisor Award, University of Texas at Arlington (2015)

National Science Foundation, Collaboration, Advancement and Translation in Mind, Brain and Education, $25,741 (2014-2016)

ORAU Ralph E. Powe Faculty Enhancement Award Network analysis of electrophysiological activity in ASD youths, $10,000 (2013-2014)

UT Arlington Research Enhancement Program Award, Neural processing of visual emotional cues in Children on Autism Spectrum, $10,000 (2013-2014)

Best Article of the Year, University of Texas at Arlington (2013)

Peer-reviewed Journal Articles   (**indicates student/trainee co-author)

2023   Krebs, J., Wilbur, R.B., Roehm, D., & Malaia, E. A. Neural mechanisms of Event Visibility in sign languages. *Language, Cognition, and Neuroscience.* doi: 10.1080/23273798.2023.2228437

2023   Tomeny, T., Hudac, C., Malaia, E., Morett, L., Tomeny, K., Watkins, L., Kana, R. (in press) Serving Individuals with Autism Spectrum Disorder in the Age of COVID-19: Special Considerations for Rural Families. *Rural Special Education Quarterly, 42(2),* pp. 105-118. doi: 10.1177/875687052311674

2022   Malaia, E., Borneman, J. D., *Kurtlogu, E., Gurbuz, S., Crawford, C., Griffin, D., Gurbuz, A. Complexity in sign languages: linguistic and dimensional analysis of information

transfer in dynamic visual communication. *Linguistics Vanguard* special issue *Measuring Language Complexity*. doi: 10.1515/lingvan-2021-0005

2022 Krebs, J., Malaia, E. A., Wilbur, R.B. & Roehm, D. EEG analysis based on dynamic visual stimuli: best practices in analysis of sign language data. *The Croatian Review of Rehabilitation Research (Hrvatska revija za rehabilitacijska istraživanja, HRRI),* 58, 245-266. doi: 10.31299/hrri.58.si.13

2022 *Rahman, M. M., Malaia, E. A., Gurbuz, A. C., Griffin, D. J., Crawford C., Gurbuz, S. Z. Effect of Kinematics and Fluency in Adversarial Synthetic Data Generation for ASL Recognition with RF Sensors. *IEEE Transactions on Aerospace and Electronic Systems*, 58 (4), pp. 2732-2745. doi: 10.1109/TAES.2021.3139848.

2022 *Radoševic, T., Malaia, E. A., Milković, M. Predictive Processing in Sign Languages: A Systematic Review. *Front. Psychol.* 13:805792. doi: 10.3389/fpsyg.2022.805792

2022 *Bradeley, C., Wilbur, R.B., Malaia, E. A., Siskind, J. Visual form of ASL verb signs predicts non-signer judgment of transitivity. *PLoS One,* 17(2): e0262098 doi: 10.1371/journal.pone.0262098

2022 *Kurtoğlu, E., Gurbuz, A. C., Malaia, E. A., Griffin, D., Crawford C., Gurbuz, S.Z. ASL Trigger Recognition in Mixed Activity/Signing Sequences for RF Sensor-Based User Interfaces. *IEEE Transactions on Human-Machine Systems*, doi: 10.1109/THMS.2021.3131675

2021 Malaia, E. A., *Borneman, S.C., Krebs, J., Wilbur, R.B. Low-frequency entrainment to visual motion underlies sign language comprehension. *IEEE Transactions on Neural Systems and Rehabilitation Engineering,* 29, 2456-2463. doi:10.1109/TNSRE.2021.3127724

2021 *Ford, K., Borneman, J., Krebs, J., Malaia, E., Ames, B. Classification of visual comprehension based on EEG data using sparse optimal scoring. *Journal of Neural Engineering*, 18(2), 026025. doi: 10.1088/1741-2552/abdb3b

2021 Gurbuz, S. Z., *Rahman, M. M., *Kurtoglu, E., Malaia, E.A., Gurbuz, A. C., Griffin, D. J., & Crawford, C. Multi-Frequency RF Sensor Fusion for Word-Level Fluent ASL Recognition. *IEEE Sensors.* doi: 10.1109/JSEN.2021.3078339

2021 Krebs, J., Wilbur, R.B., Roehm, D., Malaia, E.A. The relationship between sign language processing, age, and age of sign language acquisition. *International Journal of Behavioral Development,* 45 (5), 397-408. doi: 10.1177/0165025420958193

2021 Krebs, J., Malaia, E.A., Wilbur, R.B., Roehm, D. Psycholinguistic mechanisms of classifier processing in sign language. *Journal of Experimental Psychology: Learning, Memory, and Cognition.* doi: 10.1037/xlm0000958

2020   Gurbuz, S., Gurbuz, A., Malaia, E. A., Griffin, D., Crawford, C., *Rahman, M., *Aksu, R., *Kurtoglu, E., *Mdrafiy, R. American Sign Language Recognition Using RF Sensing. *IEEE Sensors*, doi: 10.1109/JSEN.2020.3022376

2020   Malaia, E.A., Krebs, J., Wilbur, R.B., Roehm, D. Age of acquisition effects differ across linguistic domains in sign language: EEG evidence. *Brain and Language,* 200. doi: 10.1016/j.bandl.2019.104708

2020   Krebs, J., Malaia, E., Wilbur, R., Roehm, D. Subjektpräferenz in der Österreichischen Gebärdensprache (ÖGS). *DAS ZEICHEN: Zeitschrift für Sprache und Kultur Gehörloser (The Sign: Journal for language and culture of the Deaf)*, 114; pp. 96-107.

2020   Malaia, E.A., Wilbur, R.B. Syllable as a unit of information transfer in linguistic communication: the Entropy Syllable Parsing model. *WIREs Cognitive Science*, 11(1), e1518. https://doi.org/10.1002/w8cs.1518

2020   Malaia, E.A., Ahn, S., Rubchinsky, L. Dysregulation of temporal dynamics of synchronous neural activity in adolescents on autism spectrum. *Autism Research Journal*, 13, 24-31. https://doi.org/10.1002/aur.2219

2019   Krebs, J., Malaia, E.A., Wilbur, R.B., Roehm, D. Interaction between topic marking and subject preference strategy in sign language processing. *Language, Cognition, and Neuroscience,* https://doi.org/10.1080/23273798.2019.1667001

2019   Malaia, E. A., Wilbur, R.B. Visual and linguistic components of short-term memory: Generalized Neural Model (GNM) for spoken and sign languages. *Cortex,* 112, 69-79. https://doi.org/10.1016/j.cortex.2018.05.020

2019   Malaia, E., *Cockerham, D., *Rublein, K. Visual integration of fear and anger emotional cues by children on autism spectrum and neurotypical peers: an EEG study. *Neuropsychologia*, 126,138-146. https://doi.org/10.1016/j.neuropsychologia.2017.06.014

2018   Blumenthal-Drame, A., Malaia, E. Shared neural and cognitive mechanisms in action and language: The Multi-Scale Information Transfer framework. *WIREs Cognitive Science,* 10(2), e1484. https://doi.org/10.1002/wcs.1484

2018   Borneman, J. D., Malaia E.A., Wilbur, R.B., Motion characterization using optical flow and fractal complexity. *Journal of Electronic Imaging*, 27(5), 051229.

2018   Krebs, J., Malaia, E., Wilbur, R. B., & Roehm, D. Subject preference emerges as cross-modal strategy for linguistic processing. *Brain Research*, 1691, 105-117.

2017   Malaia, E. Methodologies for quantitative analysis of information transfer in sign language and gesture data (commentary). *Behavioral and Brain Sciences.*

2017   Malaia, E., Borneman, J.D., Wilbur, R.B. Information transfer capacity of articulators in American Sign Language. *Language and Speech,* 61(1), 97-112.

2017   *Cockerham, D., Malaia, E. Neuroscience-supported approaches to teaching students on the autism spectrum. *Zeitschrift fur Psychologie,* Special Issue on Educational Neuroscience, 224 (4), 290-293.

2016   Malaia, E., Borneman, J.D., Wilbur, R.B. Assessment of information content in visual signal: analysis of optical flow fractal complexity. *Visual Cognition, 24(3*), 246-251.

2016   Malaia, E., *Bates, E., *Seitzman, B., *Coppess, K. Altered brain network dynamics in youths with Autism Spectrum Disorder. *Experimental Brain Research,* 234, 3425–3431.

2015   Malaia, E., Newman, S. Neural bases of syntax-semantics interface processing. *Cognitive Neurodynamics,* 9(3), 317-329.

2015   Malaia, E., Newman, S. Neural bases of event knowledge and syntax integration in comprehension of complex sentences. *Neurocase*, 21 (6), 753-766.

2015   Malaia, E., Tommerdahl, J., *Mckee, F.W. Deductive and heuristic reasoning processing markers in EEG. *Journal of Psycholinguistic Research*, 44 (5), 533-544.

2014   Malaia, E., Talavage, T., Wilbur, R.B. Functional connectivity in task-negative network of the Deaf: effects of sign language experience. *PeerJ*, doi: 10.7717/peerj.446.

2014   Malaia, E. It Still Isn't Over: Event Boundaries in Language and Perception. *Language and Linguistics Compass*, 8(3), 89-98.

2014   Newman, S., Malaia, E., & *Seo, R. Does degree of handedness in a group of right-handed individuals affect language comprehension? *Brain and Cognition*, 86, 98-103.

2013   Malaia, E., Wilbur, R.B., *Milković, M. Kinematic parameters of signed verbs at morpho-phonology interface. *Journal of Speech, Language, and Hearing Research,* 56 (5), 1-12.

2013   Newman, S., Malaia, E., *Seo, R., Hu, C. The effect of individual differences in working memory capacity on sentence comprehension: an fMRI study. *Brain Topography,* 26(3), 458-67.

2012   Malaia, E., *Ranaweera, R., Wilbur, R.B., Talavage. T.M. Event segmentation in a visual language: Neural bases of processing American Sign Language predicates. *Neuroimage,* 59(4), 4094-4101.

2012 Malaia, E., Wilbur, R.B., Weber-Fox, C. Down the garden path in EEG: telicity effects on thematic role re-assignment in relative clauses with transitive verbs. *Journal of Psycholinguistic Research,* 41(5), 323-345.

2012 Malaia, E., Wilbur, R.B. Motion capture signatures of telic and atelic events in ASL predicates. *Language and Speech,* 55(3), 407-421.

2010 Malaia, E., Wilbur, R.B. Early Acquisition of Sign Language: What Neuroimaging Data Tell Us. *Sign Language and Linguistics,* 13(2), 189-193*.*

2010 Malaia, E., Wilbur, R.B. Sign Languages: Contribution to Neurolinguistics from Cross-modal Research (commentary). *Lingua,* 120 (12), 2704-2706*.*

2009 Malaia, E., Wilbur, R., Weber-Fox, C. ERP evidence for telicity effects on syntactic processing in garden-path sentences*. Brain and Language,* 108(3), 145-158.

2008 Wilbur, R., Malaia, E. Contributions of Sign Language research to gesture understanding: What can multimodal computational systems learn from Sign Language research. *International Journal of Semantic Computing,* 2(1), 5-20.

Peer Reviewed Conference Proceedings and Book Chapters

2023 Krebs, J., Malaia, E. A., Roehm, D., Wilbur, R. B. Visual boundaries in sign motion: processing with and without lip-reading cues. *Proceedings of the Experiments in Linguistic Meaning meeting*, 2, pp. 164-175.doi: 10.3765/elm.2.5336

2022 *Kurtoğlu, E., Gurbuz, A. C., Malaia, E., Griffin, D., Crawford, C., & Gurbuz, S. Z. (2022, March). RF Micro-Doppler Classification with Multiple Spectrograms from Angular Subspace Projections. In *2022 IEEE Radar Conference (RadarConf22)* (pp. 1-6). IEEE. doi: 10.1109/RadarConf2248738.2022.9763904.

2022 *Rahman, M. M., *Kurtoğlu, E., *Taskin, M., *Esme, K., Gurbuz, A. C., Malaia, E., & Gurbuz, S. Z. (2022, March). Performance Comparison of Radar and Video for American Sign Language Recognition. In *2022 IEEE Radar Conference (RadarConf22)* (pp. 1-6). IEEE. doi: 10.1109/RadarConf2248738.2022.9764269.

2022 Krebs, J., Malaia, E., Wilbur, R. B, & Roehm, D. (2022). Neural mechanisms of Event Visibility in sign languages. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 44. Retrieved from https://escholarship.org/uc/item/5gk5r0jq

2021 Gurbuz, S., Malaia, E. Kinematic and Linguistic Interpretation of Human Motion via RF Signal Analysis. In S. Brüggenwirth, and A. Mishra (eds.) New Methodologies for Understanding Radar Data, pp. 437 –467. IET publications. doi: 10.1049/SBRA542E

2021 Malaia, E.A., Ford, K., Borneman, S.C., Krebs, J., Ames, B. Salience of low-frequency entrainment to visual signal for classification points to predictive processing in sign

language. 30th Annual Computational Neuroscience Meeting: CNS*2021–Meeting Abstracts. *Journal of Computational Neuroscience* 49, 3–208 (2021). doi: 10.1007/s10827-021-00801-9

2021   Krebs, J., Strutzenberger, G., Wilbur, R. B., Malaia, E. A., Schwamender, H., Roehm, D. Event visibility in sign language motion: Evidence from Austrian Sign Language (ÖGS). *Proceedings of the Annual Meeting of the Cognitive Science Society*, 43. pp. 362-368. https://escholarship.org/uc/item/67r14298

2021   *Borneman, S., G., Krebs, J., Wilbur, R. B., Malaia, E. A. Application of machine learning to signal entrainment identifies predictive processing in sign language. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 43. p. 3269. https://escholarship.org/uc/item/4gr9g2p7

2021   *Rahman, M. M., *Kurtoglu, E., *Mdrafi, R., Gurbuz, A. C., Malaia, E. A., Crawford, C., ... & Gurbuz, S. Z. (June 2021). Word-Level ASL Recognition and Trigger Sign Detection with RF Sensors. In *ICASSP 2021-2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)* (pp. 8233-8237). IEEE.

2021   *Rahman, M. M., *Mdrafi, R., Gurbuz, A. C., Malaia, E., Crawford, C., Griffin, D., & Gurbuz, S. Z. (2021, May). Word-level sign language recognition using linguistic adaptation of 77 GHz FMCW radar data. In *2021 IEEE Radar Conference (RadarConf21) proceedings*. IEEE.

2021   *Kurtoglu, E., Gurbuz, A. C., Malaia, E., Griffin, D., Crawford, C., & Gurbuz, S. Z. (2021, May). Sequential Classification of ASL Signs in the Context of Daily Living Using RF Sensing. In *2021 IEEE Radar Conference (RadarConf21)* proceedings. IEEE.

2020   Gurbuz, S., Gurbuz, A., Malaia, E. A., Griffin, D., Crawford, C., *Rahman, M., *Aksu, R., *Kurtoglu, E., *Mdrafiy, R. *ASL Recognition Based on Kinematics Derived from a Multi-Frequency RF Sensor Network*. Proceedings of 2020 IEEE Sensors, Rotterdam, the Netherlands, October 25-28, 2020 (held online due to COVID-19 travel restrictions).

2020   Malaia, E., Milković, M. *Aspect – theoretical and experimental perspectives*. In J. Quer, R. Pfau and A. Herrmann (eds.) Routledge Handbook of Theoretical and Experimental Sign Language Research, pp. 194-212. London, UK: Routledge.

2020   Malaia, E., Basu, D. Comparative analysis of interface between aspect and event structure in verbal morphosyntax of Russian and Bangla. Взаимодействие аспекта со смежными категориями: материалы VII Международной Комиссии по аспектологии Международного комитета славистов. (In: Proceedings of 7th International Conference on Slavic Aspect). St. Petersburg: Russian State Pedagogical University Press.

2020   Gurbuz, S., Gurbuz, A., Malaia, E. A., Griffin, D., Crawford, C., *Rahman, M., *Aksu, R., *Kurtoglu, E., *Mdrafiy, R., *Anbuselvam A., *Ozcelik, E. A Linguistic Perspective on Radar Micro-Doppler Analysis of American Sign Language. Proceedings of 2020 IEEE International Radar Conference, Washington D.C., April 27 - May 1, 2020 (held online due to COVID-19); doi: 10.1109/RADAR42522.2020.9114818

2018   Wilbur, R.B., Malaia, E. A new technique for assessing narrative prosodic effects in sign languages. In A. Hübl & M. Steinbach (eds.), Linguistic Foundations of Narration in   Spoken and Sign Languages, pp. 15-40. Amsterdam: John Benjamins

2016   McDonald, J., Wolfe, R., Wilbur, R.B., Moncrief, R., Malaia, E., Fujimoto, S. et al. A new tool to facilitate prosodic analysis of motion capture data and a data-driven technique for the improvement of avatar motion. Proceedings of Language Resources and Evaluation Conference (LREC), pp. 153-159. Portorož, Slovenia.

2016   Malaia, E., Egorova, E., *Hinesley, V. Developmental Characteristics of Gifted Children: Educational Approaches. In J. Horvath, J. Lodge, and J. Hattie (eds.) From the Laboratory to the Classroom: Translating the Science of Learning for Teachers, pp. 215-228. Routledge, UK.

2014   Malaia, E., Wilbur, R.B. Enhancement of spatial processing in sign language users. In D. R. Montello, K. E. Grossner, and D. G. Janelle (eds.), Space in Mind: Concepts and Ontologies for Spatial Thinking, pp. 159-171, MIT press.

2014   *Barbu, A., Barrett, D., Chen, W., *Siddarth, N., Xiong, C., Corso, J., Fellbaum, C., Hanson, C., Hanson, S., Helie, S., Malaia, E., Pearlmutter, B., Siskind, J., Talavage, T., Wilbur, R. (2014). Seeing is Worse than Believing: Reading People's Minds Better than Computer-Vision Methods Recognize Actions. In D. Fleet et al. (eds.) European Conference on Computer Vision 2014, Lecture Notes in Computer Science, pp. 612–627. Springer: Lausanne.

2014   Malaia, E., Gonzalez-Castillo, J., Weber-Fox, C., Talavage, T.M., Wilbur, R.B. Neural processing of verbal event structure: temporal and functional dissociation between telic and atelic verbs. In: Mandouilidou, C., de Ameida, R. (eds.) Cognitive Science Perspectives on Verb Representation and Processing, pp. 131 - 140. Springer: Lausanne.

2013   Malaia, E., Wilbur, R.B., Weber-Fox, C. Event end-point primes the Undergoer argument: a look at neurobiological bases of event structure. In Gehrke, B., Arsenijevic, B. (eds.) Subatomic semantics of event predicates, pp. 231-248. Springer: Studies in Linguistics and Philosophy.

2013   Newman, S. D., Malaia, E. The neural bases of intelligence: a perspective based on functional neuroimaging. In Plucker, J.A. & C. Callahan (eds.) Critical Issues and Practices in Gifted Education: What the Research Says, pp. 451-464. Prufrock Press.

2012   Malaia, E., Wilbur, R.B. Telicity expression in visual modality. In McNally, L. & Delmonte, V. (eds.) Telicity, change, and state: A cross-categorial view of event structure, pp. 122-136. Oxford: Oxford University Press.

2012   Malaia, E., Wilbur, R.B. What Sign Languages show: neurobiological bases of visual phonology. Di Sciullo, A.M. (ed.) Towards a biolinguistic understanding of grammar: essays on interfaces, pp. 265-275. John Benjamins Publishing.

Peer-reviewed Conference Presentations (from 2019)

*Shaw, S., *Borneman, S., Malaia, E., (November 16-19, 2023) EEG Power Differences Underlying Social Anxiety and Anhedonia in Autistic Adults. *ASHA 2023 Convention*, Boston, USA

Malaia, E. A., Krebs, J., Roehm, D. (June 26-29, 2023) Visual boundaries in sign motion: processing with and without mouthing cues. *Formal and Experimental Advances in Sign language Theory (FEAST 2023)*, University of Bergen, Norway.

Malaia, E. A., Krebs, J., Fessl, I., Wiesinger, H.-P., Roehm, D., Schwamender, H., Wilbur, R. (June 26-29, 2023). Event structure reflected in muscle activation differences in Austrian Sign Language (ÖGS) verbs: First evidence from surface electromyography, *Formal and Experimental Advances in Sign language Theory (FEAST 2023)*, University of Bergen, Norway.

Roehm, D., Krebs, J., Malaia, E. A. (May 31 – June 2, 2023) Visual boundaries in sign motion: processing with and without mouthing cues. *XVI International Symposium of Psycholinguistics,* University of the Basque Country, UPV/EHU, Spain

*Shaw, S., *Babin, K., Malaia, E. (February 24, 2023) EEG power differences underlying social anxiety and anhedonia in autistic adults. Poster presented at the *22nd Annual Alabama Autism Conference*, Tuscaloosa, AL, USA

*Keating, B., Gurbuz, S., Malaia, E. (October 12-15, 2022) Analyzing kinematics of ASL signs vs. transitional articulator movements based on video and Kinect data. *Biomedical Engineering Society Annual Meeting*, San Antonio, TX, USA

Malaia, E. A. (July 29, 2022) EEG signal decomposition for communications research. *Alabama Advanced Imaging Consortium Annual Retreat,* Auburn, AL, USA

Krebs, J., Malaia, E.A., Wilbur, R.B., Roehm, D. (July 27th-30th, 2022) Neural mechanisms of Event Visibility in sign languages. Poster presented at *44th Annual Meeting of the Cognitive Science Society,* Toronto, Canada

*Borneman, S.C., Malaia, E.A., Krebs, J., Wilbur, R.B. (June 19-23, 2022) Language comprehension: explainable AI identifies predictive processing in EEG. Poster presented at *Organization for Human Brain Mapping (OHBM)* conference 2022, Glasgow, Scotland, UK

Krebs, J., Malaia, E.A., Wilbur, R.B., Roehm, D. (May 19-20th, 2022) Visual boundaries in sign motion: processing with and without lip reading cues. Short talk at *Experiments in Language Meaning,* Philadelphia, PA

Malaia, E.A., *Borneman, S.C., *Ford, K., Ames, B. (March 17-22, 2022) Explainable Machine Learning Approach to Investigating Neural Bases of Brain State Classification. Poster presented at *Computational and Systems Neuroscience (COSYNE) 2022*, Lisbon, Portugal

*Costo, M., Malaia, E. A., Cook, C., Barber, A. (November 18-20, 2021) *Social Component of Project ImPACT Intervention for Slow Responders.* Annual Convention of the American Speech-Language-Hearing Association, Washington, DC (hybrid format due to COVID-19)

*Nguyen, T., Gurbuz, S., Malaia, E. (October 25, 2021). Communicative vs Transitional Features in American Sign Language. *NSF Research Experiences for Undergraduates (REU) Symposium*; Washington D.C (held online)

Malaia, E., Krebs, J., *Borneman, S., Wilbur, R.B. (Sept. 23-24, 2021). To understand is to predict: machine learning identifies low-frequency entrainment to visual stimuli as the basis of sign language comprehension via predictive processing. *Computational Cognition Conference 2021,* Osnabrück, Germany (held online)

*Borneman, S., G., Krebs, J., Wilbur, R. B., Malaia, E. (July 26-28, 2021) *Application of machine learning to signal entrainment identifies predictive processing in sign language*. 43rd Annual Meeting of the Cognitive Science Society, Vienna, Austria (held online)
Malaia, E., *Borneman, S., *Ford, K., Krebs, J., Ames, B. (July 3-5, 2021) *Salience of low-frequency entrainment to visual signal indicates predictive processing in sign language*. Featured oral presentation at the Computational Neuroscience Society meeting (held online)

Krebs, J., Wilbur, R.B., Malaia, E.A. (March 2021). *Psych verbs event structure encoding: an analysis from Austrian Sign Language.* Oral presentation *at Lexical restrictions on Grammatical relations* workshop, Amsterdam, the Netherlands (held online)

Gurbuz, S., Gurbuz, A., Malaia, E. A., Griffin, D., Crawford, C., *Rahman, M., *Aksu, R., *Kurtoglu, E., *Mdrafiy, R. (October 2020) *ASL Recognition Based on Kinematics Derived from a Multi-Frequency RF Sensor Network*, Oral presentation at IEEE Sensors Conference, Rotterdam, the Netherlands (held online due to COVID-19)

Krebs, J., Wilbur, R.B., Malaia, E.A. (September 2020*). Sign language variation in event structure encoding: an analysis from Austrian Sign Language.* Oral presentation at Events and Event Structure at the Limits of Grammar Workshop, Oxford, UK (held online)

*Rivera, B., Soylu, F., Malaia, E. (April 2020). *Neural Bases of Information Transfer in Autism Spectrum Disorder: A Pilot Study.* Southeastern Universities Graduate Research Symposium, University of Alabama, Tuscaloosa, AL (held online due to COVID-19)

Gurbuz, S., Gurbuz, A., Malaia, E. A., Griffin, D., Crawford, C., *Rahman, M., *Aksu, R., *Kurtoglu, E., *Mdrafiy, R., *Anbuselvam A., *Ozcelik, E. A. (April 2020) Linguistic Perspective on Radar Micro-Doppler Analysis of American Sign Language. *RADAR 2020 conference.* Washington, DC (held online due to COVID-19)

Malaia, E.A., Ahn, S., Rubchinsky, L. (November 2019). Oral presentation, Dysregulation of Temporal Dynamics of Neural Activity in Adolescents on Autism Spectrum. *ASHA Convention*, Orlando, FL

Gurbuz, S., Malaia, E., Crawford, C., Griffin, D., Gurbuz, A. (November 2019). RF Sensing for Sign Language Driven Smart Environments. NSF Cyber-Physical Systems Principal Investigators' Meeting; Arlington, VA

Malaia, E., Ikuta, T., Wilbur, R.B. (November 2019). Voxelwise Connectivity of Right Hemisphere BA44-STG in American Sign Language Users. Poster, *ASHA Convention*, Orlando, FL
Ikuta, T., Wilbur, R., Malaia, E. (October 2019). Functional connectivity of the right pars opercularis in American Sign Language. *Society for Neuroscience conference*, Chicago, IL

Malaia, E., Ikuta, T., Wilbur, R. (October 2019). Neurofunctional architecture underlying syntactic processing in American Sign Language. *International Brain and Syntax Think Tank*, Northwestern University, IL.

Malaia, E., Borneman, J., Krebs, J., Roehm, D., Wilbur, R. (September 2019). Cortical entrainment to visual entropy underlies sign language comprehension. *Theoretical Issues in Sign Language Research 13 (TISLR 13),* Hamburg, Germany

Krebs, J., Wilbur, R.B., Malaia, E.A, Strutzenberger, G., Schwameder, H. & Roehm, D. (September 2019). Event visibility in sign language motion: Evidence from ÖGS. *Theoretical Issues in Sign Language Research 13 (TISLR 13),* Hamburg, Germany

Malaia, E.A., Krebs, J., Borneman, J.D., Roehm, D. (June 2019). Visual cues for predictive entrainment in sign language. *Psycholinguistics in Iceland: Parsing and Prediction (PIPPs '19),* Reykjavik, Iceland

*Harper, K., Malaia, E., Cook, C., Barber, A. (May, 2019). Is Play Related to Spoken Language Development: Preliminary Evidence from Project ImPACT intervention. *International Society for Autism Research (INSAR) Conference*, Montreal, Canada.

Malaia, E., Ahn, S., Rubchinsky, L. (May, 2019). Dysregulation of temporal dynamics of neural activity in adolescents on autism spectrum. *International Society for Autism Research (INSAR) Conference,* Montreal, Canada.

Siskind, J, Wilbur, R.B., Malaia, E. (April 2019). Spatial, temporal, and spatiotemporal activation maps from EEG. Poster presented at 5th annual Brain Initiative Investigators' Meeting, Washington, DC

Malaia, E. (March, 2019). Cross-modal transfer: visual perception yields linguistic metaphors. Creative power of Metaphor conference, Oxford, UK

Invited and Keynote Talks

2023	Department of Cuban Sign Language, University of Havana, Cuba
2022	Cultivating Research & Equity in Sign-Related Technology (CREST) Webinar Series, Gallaudet University, Washington DC
2021	Freiburg Institute for Advanced Studies, Freiburg im Breisgau, Germany
2019	Interactive workshop on measuring language complexity, FRIAS Freiburg im Breisgau, Germany
2019	Worcester College, Oxford University, Oxford, UK
2017	University of Salzburg Centre for Cognitive Neuroscience, Salzburg, Austria
2016	Norwegian University of Science and Technology, Trondheim, Norway
2015	Max Planck Institute for Cognitive and Brain Sciences, Leipzig, Germany
2015	Department of Linguistics, University of Amsterdam, the Netherlands
2014	Cold Spring Harbor Symposium on Quantitative Biology, NY, USA
2011	University of Cambridge Cognition and Brain Sciences Unit, Cambridge, UK

Service

Grant proposal review panel member
NIH Center for Scientific review (Panels: *Noninvasive Neuromodulation and Neuroimaging Technologies; Child Psychopathology and Developmental Disorders; Language and Communication*); NSF; US Department of Defense; EU Horizon 2020; European Institutes for Advanced Studies; French Instituted for Advanced Study; Freiburg Institute for Advanced Study

Editorial Board Member
Frontiers in Human Neuroscience; Frontiers in Psychology

Meetings Organizer
Organization for Computational Neuroscience Meeting 2021 (virtual) – World Organizing Committee; International Mind, Brain, and Education conference, 2014; "Event representation and processing", mini-symposium, APS 2014; "Memory and learning" workshop, International Mind, Brain, and Education conference (IMBES 2014)

Ad-hoc manuscript reviewer
J of Exp Psychology: Learning, Memory and Cognition; Behavioral and Brain Sciences; J of Cognitive Neuroscience; Human Brain Mapping; Neuroimage; Psychonomic Bull & Review; Brain and Language; Cog Neurodynamics; Language, Cognition, and Neuroscience; Autism Research; J of Autism and Developmental Disorders; J of Speech, Language, and Hearing Research; Biologically Inspired Cognitive Architectures; Int'l J of Disability, Development and Education; J of Educational Psychology; Sign Language and Linguistics; Neuropsychologia; Visual Cognition; Glossa; Royal Society Open Science; J of Pediatrics; Cerebral Cortex; Acta Psychologica; PeerJ; Computer Methods in Biomechanics and Biomedical Engineering; J of Semantics; PLOS One; IEEE Sensors

Conference abstracts: SfN; OHBM; CNS; INSAR; SNL; TISLR; IMBES

Teaching

Applied Research in Communication Disorders, University of Alabama (graduate/undergrad)

Evidence-based analysis for systematic review in Communication Disorders, University of Alabama (undergraduate)

Neurology I, University of Alabama (graduate)

Language Development, University of Alabama (undergraduate)

Introduction to Neuroscience, University of Texas at Arlington (graduate)

Experimental Language Research, University of Texas at Arlington (graduate)

Invited Summer Teaching

2019 - 2022	*Sensor-based recognition of American Sign Language* (REU) Communicative Disorders and Engineering REU, UA
2017	*Neurolinguistics* Centre for Cognitive Neuroscience (CCNS), University of Salzburg
2015	*Neurolinguistics* Erasmus Mundus Master's Program in Clinical Linguistics, Potsdam
2014-2015	*Experimental Neurolinguistics* NY-St. Petersburg Institute for Linguistics, Cognition and Culture
2013	*Computational Neuroscience* (REU) Indiana University Research Experience for Undergraduates

Dissertations and theses directed

Amber Harris	PhD., University of Texas Arlington	2/25/2015
Charles Bradley	PhD., Purdue University	2/15/2019
Kayla Sherbert	MS, University of Alabama	2/20/2020
Katie Ford	PhD., University of Alabama	5/21/2021
Ansley Weaver	MS, University of Alabama	3/02/2022
Sandra Shaw	MS, University of Alabama	2/27/2023
Grace Dooley	MS, University of Alabama	3/06/2023
Tomislav Radoševich	PhD., University of Zagreb, Croatia	In progress
Sophie Moore	MS, University of Alabama	In progress

University Service

2023 – present	Interprofessional Education committee, department representative, UA
2022 – present	Artificial Intelligence and Machine Learning (AI/ML) working group, Cyber Institute, UA
	Promotion and Tenure Committee (chair 2021-present), CD
2018 – present	External Promotion and Tenure reviewer
2021 – present	Curriculum Committee, CD
2020 – present	Center for Innovative Research in Autism (CIRA) faculty, UA
2018 – present	Graduate Admissions Committee, CD
2018 – 2022	Undergraduate advising (~40 students per semester)
2019 – 2020	Autism Research Cluster affiliated faculty, UA
2018 – 2019	Brain Initiative/fMRI planning committee, UA
2018 – 2019	Research and Analytics Support Services Initiative, affiliated faculty, UA