Esteban Sebastian Lelo de Larrea-Mancera

Behavioral Data Scientist at BeWay Consulting.

***Postdoctoral Researcher*** associated to: Northeastern University; Oregon Health & Science University; Instituto Nacional de Neurología y Neurocirugía; Instituto Nacional de Psiquiatría.

# Brief Personal Statement

I am a Mexican Psychology Scholar with a cognitive neuroscience approach to the study of perception, cognition and action. I am interested in the ways these conceptual categories interact with one another in the service of behavior, and the possibility of improvements through training, assistive devices, or augmentations. My work includes behavioral, electro-physiological, computational, and self-report methodologies ultimately focused on improving quality of life.

# Education

**Ph. D., Cognition and Cognitive Neuroscience** (*Sep. 2021*), University of California, Riverside.

Thesis: “ Perceptual Learning: Assessment & training across the mechanical senses”. ([link](https://escholarship.org/content/qt7kw89480/qt7kw89480_noSplash_4fd1e06c8cd6bc4995af1173771380a7.pdf))

Committee: Aaron R. Seitz, Frederick J. Gallun & Khaleel A. Razak.

**M. A. Cognitive Psychology (***Jun. 2018***),** University of California, Riverside.

Thesis: “ Training on Broad Band Tactile Stimulation Promotes the Generalization of Learning ”.

Committee: Aaron R. Seitz, Weiwei Zhang & Megan Peters.

**M. Sc. Cognitive Systems & Interactive Media** (*Jun. 2012*), Universitat Pompeu Fabra, Spain.

Thesis: “ Sound and Music to Study Disorders of Consciousness ”.

Committee: Sylvain LeGroux, Paul Verschure & Narcis Parés.

**Licenciatura in Psychology (***Apr. 2010***),** National AutonomousUniversity of Mexico, México.

Thesis: “ The effect of musical context on auditory automatic change detection ”.

Committee: Rodolfo Solís-Vivanco, Irma Y. del Río, Ma. Dolores Rodríguez & Maura Ramírez.

# Research Experience

## Behavioral Data Scientist (*Aug 2024 to date*)

Beway Consulting. Research and data department. Madrid, Spain (remote)

Duties: Provide advice on experimental design, data quality, data analysis, and scientific communication.

## Post-Doctoral Visiting Scholar (*Sep 2021 to date*)

Oregon Health & Science University (OHSU) and the National Center for Rehabilitative Auditory Research (NCRAR) at the VA Hospital in Portland, OR, USA. Supervisor: Dr. Frederick Gallun.

Instituto Nacional de Neurología y Neurocirugía Manuel Velasco Suárez in the Cognitive and Clinical Psychophysiology Lab in Mexico City, Mexico. Supervisor: Rodolfo Solís-Vivanco.

Instituto Nacional de Psiquiatría Ramón de la Fuente in the Neuroplasticity Lab in Mexico City, Mexico. Supervisors: Ruth Alcalá-Lozano and Yvonne Flores-Medina.

Duties: Research associate in charge of conducting translational central auditory processes evaluation through a collaborative project between US and Mexican Institutions. Generation and validation of Spanish-language auditory measures in Mexican population. Experimental design, data collection, data analysis, result reporting, manuscript writing, corresponding submissions, designing follow-ups, generating new venues of collaboration. Grant writing.

## Post-Doctoral Research Associate (*Jan 2023 to June 2024*)

Northeastern University, Department of Psychology & the *Center for Cognitive and Brain Health*, Boston, MA, USA. Supervisor: Dr. Aaron Seitz.

Duties: Support in grant writing, experimental design, stimulus generation, task planning and development, research documentation writing, data collection, data analysis, result reporting, manuscript writing, corresponding submissions, designing follow-ups, generating new venues of collaboration.

## Post-Doctoral Research Scholar (*May 2022 to Jan 2023*)

University of California Riverside *Perception and Learning Lab*, Department of Psychology & the *Brain Game Center*, Riverside, CA, USA. Supervisor: Dr. Aaron Seitz.

Duties: Support in grant writing, experimental design, stimulus generation, task planning and development, data collection, data analysis, result reporting, manuscript writing, corresponding submissions, designing follow-ups, generating new venues of collaboration.

## PhD Student Researcher (*Sep. 2016 – Sep. 2021*)

University of California Riverside *Perception and Learning Lab*, Department of Psychology & the *Brain Game Center*, Riverside, CA, USA. Supervisor: Dr. Aaron Seitz.

* Projects: Tactile Perceptual Learning; Multi-sensory perception and learning; Central Auditory Processing Assessment; Auditory Training through Brain Games; Cognitive Training through Brain Games; Motricity in Perceptual Learning.
* Duties: Manage scientific projects from experimental design, to programming of tasks, data collection, data analysis, scientific presentation and report. Also supervised groups of 6-10 research assistants.

## Visiting Scholar (Summer (June – Sept.) 2018 & 2019)

Oregon Health & Science University (OHSU) and the National Center for Rehabilitative Auditory Research (NCRAR) at the VA Hospital in Portland, OR, USA. Supervisor: Dr. Frederick Gallun.

* Projects: Central Auditory Processing Assessment with older adults, patients with hearing loss and/or traumatic brain injury (R01 DC015051); Auditory Training through Brain Games (R03 HD94234).
* Duties: Calibration and measurement of psychophysical instruments in specialized installations (e.g. VA anechoic chamber. Presented our work among the researchers of the NCRAR.

## Licensed Research Assistant (Oct. 2010 – June 2011 & Oct. 2012 to Dec 2015)

Universidad Nacional Autónoma de México (UNAM), *Energy and Environment* research group at the Institute of Engineering. Mexico City, México. Supervisor: Dr. Claudia Sheinbaum Pardo.

* Projects: Water and Energy Linkage in Mexico; Biodiesel from waste cooking oil.
* Duties: Translator of scientific manuscripts (Spanish to English). Statistical data analyst.

## Undergraduate Research Assistant (*Mar. 2008 – Mar. 2010*)

Instituto Nacional de Neurología y Neurocirugía Manuel Velasco Suárez, *Neuropsychology and Support Groups Lab*, Brain Research Department. Mexico City, México. Supervisor: Dr. Yaneth Rodríguez-Agudelo

* Projects: Familial Alzheimer Disease; Support groups for patients of neurological disorders; Neuropsychological Evaluation of paper-based assessments.
* Duties: We organized different lectures and didactic materials such as informational flyers for patients and care-givers of several psychiatric and neurological ailments. Furthermore, I assisted in the planning and evaluation of different neuropsychological batteries applied for different studies as well as in support of the clinical work of the lab.

## Undergraduate Research Assistant (*Mar. 2008 – Mar. 2010*)

Instituto Nacional de Neurología y Neurocirugía Manuel Velasco Suárez, *Neuropsychology and Support Groups Lab*, Brain Research Department, Mexico City, México. Supervisor: Dr. Rodolfo Solís-Vivanco

* Projects: Attention and re-orientation electrophysiological markers in patients with Parkinson’s Disease; Auditory automatic change detection as a neurophysiological marker of central auditory function.

Duties: Assist with attention and distractibility electrophysiological research. Also, I studied auditory change detection in the context of musical stimuli for my undergraduate dissertation work (see Larrea-Mancera, 2017).

# Publications [*(link to google scholar Profile)*](https://scholar.google.com/citations?user=upsviLQAAAAJ&hl=es&oi=ao)

1. Kannan, L., **Lelo de Larrea-Mancera, E. S.**, Maniglia, M., Vodyanyk, M. M., Gallun, F. J., Jaeggi, S. M., & Seitz, A. R. (2024). Multidimensional relationships between sensory perception and cognitive aging. *Frontiers in Aging Neuroscience*, *16*(December), 1–8. https://doi.org/10.3389/fnagi.2024.1484494
2. **Lelo de Larrea-Mancera, E. S.**, Correa-Medina, E. I., Padilla-Bustos, K., Romero Terán, D. P., Hernández-Medrano, A. J., Cerda-Hernández, G. I., Cervantes-Arriaga, A., Rodríguez-Violante, M., Gallun, F. J., Seitz, A. R., & Solís-Vivanco, R. (2024). A Characterization of Central Auditory Processing in Parkinson’s Disease. *Journal of Parkinson’s Disease*, 1–15. <https://doi.org/10.3233/JPD-230458>
3. **Lelo de Larrea-Mancera, E. S.**, Koerner, T. K., Hoover, E. C., Stecker, G. C., Gallun, F. J., Seitz, A. R.; Estimating thresholds with the adaptive scan method of psychophysical testing. *Proceedings of Meetings in Acoustics (POMA)*: *186th Meeting of the Acoustical Society of America* (July, 2024); 155 (3\_Supplement): A41. <https://doi.org/10.1121/10.0026733>
4. Mendiola, J. L., **Lelo de Larrea-Mancera, E. S.**, Seitz, A. R. Gallun, F. J. & Diedesch, A. (2024). Evaluating compliance on a gamified auditory training task in Veterans. *Proceedings of Meetings in Acoustics (POMA)*: *184th Meeting of the Acoustical Society of America* (March, 2024), *51*(050009). <https://doi.org/10.1121/2.0001854>
5. **Lelo de Larrea-Mancera, E. S.**, Solís-Vivanco, R., Sánchez-Jiménez, Y., Padilla-Bustos, K., Correa-Medina, E. I., Clamage, D. S., Bologna, W. J., Gallun, F. J., & Seitz, A. R. (2024). Testing the Informativeness of Diverse Measures of Auditory Processing for Clinical Audiological Practice in Middle-Aged Adults in Mexico. *American Journal of Audiology*, 1–11. <https://doi.org/10.1044/2023_AJA-23-00135>. Also freely available at: PsyArXiv. <https://doi.org/10.31234/osf.io/6w83m>
6. **Lelo de Larrea-Mancera, E. S.**, Stavropoulos, T., Carrillo, A. A., Menon, K. N., Hoover, E. C., Eddins, D. A., Gallun, F. J., & Seitz, A. R. (2023). Validation of the adaptive scan method in the quest for time-efficient methods of testing auditory processes. *Attention, Perception, & Psychophysics*, *0123456789*. <https://doi.org/10.3758/s13414-023-02743-z>
7. **Lelo de Larrea-Mancera, E. S.**, Solís-Vivanco, R., Sánchez-Jiménez, Y., Coco, L., Gallun, F. J., & Seitz, A. R. (2023). Development and validation of a Spanish-language spatial release from masking task in a Mexican population. *The Journal of the Acoustical Society of America, 153(1).* <https://doi.org/10.1121/10.0016850>
8. Bologna, W., Carrillo, A., Clamage, D., Coco, L., He, Y.J., **Lelo de Larrea-Mancera, E. S.**, Stecker, C., Gallun, F. J. & Seitz, A. R. (2023). Effects of Gamification on Assessment of Spatial Release From Masking. *American Journal of Audiology.* 1-10. <https://doi.org/10.1044/2022_AJA-22-00133>
9. Martínez-Serrato, Y., Rodríguez-Violante, M., **Lelo de Larrea-Mancera, E. S.**, Ruiz-Contreras, A., Rodríguez-Agudelo, Y., Ricardo-Garcell, J., & Solís-Vivanco, R. (2023). Attentional impairment in Parkinson’s disease is modulated by side of onset: neurophysiological evidence. *Clinical Neurophysiology*, *145*, 45–53. <https://doi.org/10.1016/j.clinph.2022.10.014>
10. **Lelo de Larrea-Mancera, E. S.**, Seitz, A. R., Maniglia, M. (Sep 2022, accepted first stage of a Registered Report or Replication). Sensory-motor perceptual learning and motor response specificity. *Attention, Perception, and Psychophysics*.
11. **Lelo de Larrea-Mancera, E. S.,** Stavropoulos, T., Carrillo, A. A., Cheung, S., He, Y. J., Eddins, D. A., Molis, M. R., Gallun, F. J., & Seitz, A. R. (2022). Remote auditory assessment using Portable Automated Rapid Testing (PART) and participant-owned devices. *The Journal of the Acoustical Society of America*, *152*(2), 807–819. <https://doi.org/10.1121/10.0013221>
12. Gallun, F. J., Coco, L., Koerner, T. K., **Lelo de Larrea-Mancera, E. S.**, Molis, M. R., Eddins, D. A., & Seitz, A. R. (2022). Relating Suprathreshold Auditory Processing Abilities to Speech Understanding in Competition. *Brain Sciences*, *12*(6), 695. <https://doi.org/10.3390/brainsci12060695>
13. **Lelo de Larrea-Mancera, E. S.**, Philipp, M. A., Stavropoulos, T., Anna, A., Cheung, S., Koerner, T., Molis, M. R., Gallun, F. J., & Aaron, R. (2021). Training with an auditory perceptual learning game transfers to speech in competition. *Journal of Cognitive Enhancement.*<https://doi.org/10.1007/s41465-021-00224-5>
14. **Lelo de Larrea-Mancera, E. S.**, Stavropoulos, T., Hoover, E., Eddins, D., Gallun, F., & Seitz, A. (2020). Portable Automated Rapid Testing (PART) for auditory research: Validation in a normal hearing population. *Journal of the Acoustical Society of America*, 148 (4), 1831–1851. <https://doi.org/10.1101/2020.01.08.899088>
15. Murray, C. A., **Lelo de Larrea-Mancera, E. S.**, Glicksohn, A., Seitz, A. R., & Shams, L. (2020). Revealing multisensory benefit with diffusion modeling. *Journal of Mathematical Psychology*, 99, <https://doi.org/102449.10.1016/j.jmp.2020.102449>
16. Justo-guillén, E., Ricardo-Garcell, J., Rodríguez-Camacho, M., Rodríguez-Agudelo, Y., **Lelo de Larrea-Mancera, E. S.**, & Solís-Vivanco, R. (2019). Auditory mismatch detection , distraction , and attentional reorientation ( MMN-P3a-RON ) in neurological and psychiatric disorders : A review.*International Journal of Psychophysiology*, 146 (February), 85–100. <https://doi.org/10.1016/j.ijpsycho.2019.09.010>
17. **Lelo de Larrea-Mancera E. S.**, Dempsey-Jones, H., Makin, T. and Seitz, A. R. (2019) Does Training on Broad Band Tactile Stimulation Promote the Generalization of Learning?Archival paper in*Joint IEEE 9th International Conference on Development and Learning and Epigenetic Robotics* (ICDL-EpiRob), Oslo, Norway, 2019, pp. 1-6. <https://ieeexplore.ieee.org/document/8850704/>
18. **Lelo-de-Larrea-Mancera, E, S.**, Rodríguez-Agudelo, Y., & Solís-Vivanco, R. (2017). Musical rhythm and pitch: a differential effect on auditory dynamics as revealed by the N1/MMN/P3a complex. *Neuropsychologia*, 100 (January), 44–50. <https://doi.org/10.1016/j.neuropsychologia.2017.04.001>
19. Sheinbaum C., Balam M., Robles G., **Lelo De Larrea E. S.** (2015). Potential of biodiesel from waste cooking oil in Mexico and associated emissions. Archival paper in *9th Conference on Sustainable Development of Energy, Water and Environment Systems*. September 20th-2th, 2014.
20. Sheinbaum C., Chavez C., **Lelo De Larrea E. S.** (2012). Energy and water linkage in Mexico. *International Journal of Sustainable Water and Environmental Systems,* 4 (2012) pp. 15-22

# Grant Experience

**Assigned as key personnel for the projects titled:**

1. National Institute of Health NIA 1R01AG077725 (2022-2027; $3,648,125) – *Mediators and Moderators of Auditory Training*, (MPIs Seitzand Gallun). Co-writer and key personnel to date.
2. National Institute of Health NIDCD 1 R01 DC018166-01A1 (2020-2025; $ 3,829,677) – *Enhanced environments for psychophysical evaluation and training*, (MPIs Gallun, Seitzand Stecker). Collaborator to-date.
3. National Institute of Health NIA R61/R33 AG066567-01A1 (2021-2026; $ 2,605,355) – *Following the Sound of Music - Comparing the Effects of Music vs. Non-Music Based Interventions on Auditory and Cognitive Processing in Older Adults*, (MPIs Jaeggi & Seitz). Key personnel until July 2024.
4. National Institute of Health NICHD R03 HD94234 (2018-2021; $ 150,000) – *Brain training for central auditory dysfunction after traumatic brain injury*, (MPIs Seitzand Gallun). Start-to-finish.
5. National Institute of Health NIDCD 1 R01 DC015051 (2016-2022; $2,284,139) – *Efficient diagnostic tools to evaluate central auditory dysfunction,* (MPIs Gallun, Seitzand Eddins). Start-to-finish.

**Obtained as main recipient:**

1. Consejo Nacional de Ciencia y Tecnología (CONACYT) / UC MEXUS.*5 year fellowship for the elaboration of the Ph.D. program in Psychology: Cognitive Neuroscience* (Riverside, California, USA, 2016-2020; ~$162,000).
2. Consejo Nacional de Ciencia y Tecnología (CONACYT) MSc. *1 year fellowship for the elaboration of master studies in Cognitive Systems and Interactive Media* (Barcelona, Spain, 2011-2012; ~$30,000).

# Conference presentations

1. **Short talk:** Remote characterization of auditory and cognitive processing. Presented at the 187th “Virtual” Meeting of the Acoustical Society of America (November, 2024).
2. **Poster: Lelo de Larrea-Mancera ES,** Flores-Medina Y, Seitz AR, Alcalá-Lozano R. Using digital measures of cognition and audition to screen for cognitive decline in a Spanish-speaking population. Presented at the Manchester Centre for Audiology and Deafness (ManCAD) – Clinical Audiology Papers conference in honour of Dave Moore’s retirement. September 2024.
3. **Posters**: Presented at the 186th Meeting of the Acoustical Society of America. Ottawa, Canada (May, 2024).
   1. **E. S. Lelo de Larrea-Mancera**, Tess K. Koerner, Eric C. Hoover, G. Christopher Stecker, Frederick J. Gallun, Aaron Seitz; Estimating thresholds with the adaptive scan method of psychophysical testing. *J. Acoust. Soc. Am.* 1 March 2024; 155 (3\_Supplement): A41. <https://doi.org/10.1121/10.0026733>
   2. Katia Padilla-Bustos, Frederick J. Gallun, Aaron R. Seitz, Rodolfo Solís-Vivanco, **Esteban Sebastian Lelo de Larrea Mancera (senior author)**; Exploring the influence of bilingual experience on speech-in-competition measures. *J. Acoust. Soc. Am.* 1 March 2024; 155 (3\_Supplement): A309. <https://doi.org/10.1121/10.0027616>
   3. Erick Correa-Medina, Rodolfo Solís-Vivanco, Tess Koerner, Frederick J. Gallun, Aaron Seitz & **Sebastian Lelo de Larrea-Mancera (senior author)**; Neurophysiological biomarkers of speech-in-competition performance under different conditions of attentional load. *J. Acoust. Soc. Am.* 1 March 2024; 155 (3\_Supplement): A305–A306. <https://doi.org/10.1121/10.0027596>
   4. Tess K. Koerner, Karen Garcia, Lauren Charney, Conner Corbett, **Sebastian Lelo de Larrea-Mancera**, G. Christopher Stecker, Aaron Seitz, Frederick J. Gallun; Predicting self-reported hearing problems using suprathreshold auditory processing and cognitive measures. *J. Acoust. Soc. Am.* 1 March 2024; 155 (3\_Supplement): A40. <https://doi.org/10.1121/10.0026730>
4. **Short talk:** *Utilidad de las medidas de procesamiento auditivo como posibles mediadores del envejecimiento cognitivo: Utility of auditory processing measures as mediators of cognitive aging.* (February, 2024). Presented at the Seminario de Salud Mental Psiquiatría e Innovación at the Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz.
5. **Posters:** American Auditory Society 51st Annual Scientific & Technology Meeting (February, 2024).
   1. Corbett, C., Charney, L., Koerner, T., Garcia, K., **Lelo de Larrea-Mancera, ES**., Stecker, C., Seitz, AR., Gallun, FJ. The *Effects of Mild TBI on Suprathreshold Auditory Processing.*
   2. Bologna, W.J., Buckheit, K., Esser, K., **Lelo de Larrea-Mancera, ES**., Stecker, C., Gallun, FJ. Objective and Subjective *Effects of Gamification with Long Adaptive Tracks.*
   3. Momtaz, S., Williams, BT., Miller, MK., Bologna, W.J., Koerner, T., **Lelo de Larrea-Mancera, ES**., Seitz, AR., Gallun, FJ., Stecker, C. *The Effect of Reverberation on Spatial Release from Masking.*
   4. Williams, BT., Momtaz, S., Miller, MK., Bologna, W.J., Koerner, T., **Lelo de Larrea-Mancera, ES**., Seitz, AR., Gallun, FJ., Stecker, C. *Relating Self-Reported Hearing Experience to Reverberant Spatial Speech Unmasking.*
6. **Discussion Panel and Arcade Presentation:** Ai Xia, Ayanna Seals, **E. Sebastian Lelo de Larrea-Mancera**, Min Kwak, Pedro Sodre, Sid Chou, Mariette Papic & Chella Quint. (July, 2023) *Space Party Rescue: an auditory training VR experience.* Developed at the XR Brain Jam and presented at the Games for Change Festival. New York City, NY, USA. <https://ai-xia.itch.io/spacepartyrescue>
7. **Posters:** Presented at the 184th Meeting of the Acoustical Society of America. Chicago, IL, USA.
   1. **Lelo de Larrea-Mancera**, Solís-Vivanco, Sánchez-Jiménez, Padilla Bustos, Chimal-Gómez, Padilla-Canales, Correa-Medina, Bologna, Clamage, Gallun & Seitz. (May, 2023*). Complementary measures for clinical audiological practice to better explain self-reported hearing difficulties: A study using an automated measurement tool in Mexico.*
   2. Mendiola, **Lelo de Larrea-Mancera**, Gallun, Seitz & Diedesch. (May, 2023). *Evaluating compliance on a gamified auditory training task in Veterans.*
8. **Short talk:** *Remote auditory assessment and training.* Presented at the symposium titled: Cognitive training in the real world: a feasibility perspective. LearnMem conference, April 2023, Huntington Beach, CA, USA.
9. **Short talk:** *Auditory Processing Alterations in Parkinson’s Diesease*. Accepted for podium talk at the Association for Research in Otolaryngology 46th annual mid-winter meeting (Feb) 2023, at Orlando, FL, USA.
10. **Discussion Panel:** *Ecological concerns for cognitive and perceptual training.*Presented at the BrainPlay Conference held November 2022 in Carnegie Mellon University, Pittsburgh, PA, USA.
11. **Short talk:** *Gamified training on spectro-temporal and spatial auditory discrimination improves intelligibility of speech in competition.* Presented at the 7th Biennial Perceptual Learning Workshop. Alyeska, Alaska, USA.
12. **Poster: Lelo de Larrea-Mancera**, Solís-Vivanco, Coco, Sánchez-Jiménez, Carrillo, Gallun & Seitz. (2022). *Portable Automated Rapid Testing in Spanish: Validation and norms of central hearing processes on a Mexican population.* Presented in the 182th Meeting of the Acoustical Society of America. Denver, CO. <https://doi.org/10.13140/RG.2.2.35899.08482>
13. **Short talk**: *Gamification effect (or rather, using gaming technology to train auditory function)*. Presented at the Virtual Conference for Computational Audiology (2022). <https://computationalaudiology.com/wp-content/uploads/2022/06/VCCA2022_program_abstracts_v4.pdf>
14. **Short talk**: *La neurociencia cognitiva de la audición y la salud mental (The cognitive neuroscience of audition and mental health).* Presented at the International Week of the Brain organized by the Psychology Department of the National Autonomous University of Mexico (UNAM). Transmitted live online (<https://fb.watch/bY8h7WLdrx/>). Mexico City. Mexico.
15. **Poster:** **Lelo de Larrea-Mancera**, Stavropoulos, Carrillo, Cheung, Palandrani, Hoover, Eddins, Molis, Gallun & Seitz. (2022, Feb. 5-9). *Validation of the Adaptive Scan Method in the Quest for More Efficient Methods for Testing Auditory Processes.* Presented at the Midwinter Meeting of the Association for Research in Otolaryngology, February 2022. Event hosted online.
16. **Poster:** Gallun, Diedesch, Srinivasan, **Lelo de Larrea-Mancera**, Koerner, Molis, Hoover, Eddins & Seitz. (2021, Feb. 16-25). *Auditory processing abilities across the adult lifespan tested with a Portable Automated Rapid Testing (PART) battery.* Presented at the Midwinter Meeting of the Association for Research in Otolaryngology, February 2021. Event hosted online.
17. **Poster:** Larrea-Mancera et al. (2020, May 11-15). *Rapid Testing (PART) for auditory research in an older population* [Poster in session 2aPPa]. 179th Meeting of the Acoustical Society of America in Chicago, Illinois, USA. (Conference cancelled due to COVID-19).
18. **Short talk & poster**: **Lelo de Larrea-Mancera E. S**., Dempsey-Jones, H., Makin, T. and Seitz, A. R. *Does Training on Broad Band Tactile Stimulation Promote the Generalization of Learning?* Joint IEEE 9th International Conference on Development and Learning and Epigenetic Robotics (ICDL-EpiRob) (2019) Oslo, Norway.
19. **Short talk**: *Evaluating central auditory psychophysical performance for training applications*. Presented at the Games for Engaging Learning (GEL) Network meeting, Carnegie Mellon, (2019). Pittsburgh, PA.
20. **Poster:** **Lelo de Larrea-Mancera**, Stavropoulos, Gallun, Eddins & Seitz. (2019). *Portable psychoacoustics with passive and active noise-attenuating headphones.* Presented at the Meeting for the Acoustical Society of America. Louisville, KY.
21. **Poster:** Koerner, **Lelo de Larrea-Mancera**, Billings, Seitz & Gallun (2019). *Evaluation of a Binaural Detection Task in PART for Assessing TFS Processing in Hearing Impaired Listeners*. Presented at the International Hearing Loss Conference. Ontario, Canada.
22. **Short talk**: *Musical rhythm and pitch: a differential effect on auditory dynamics as revealed by the N1/MMN/P3a complex.* Presented at the Marquam Hill Audiology Grand Rounds at the NCRAR in the VA Hospital (2018). Portland, Oregon, USA.
23. **Poster**: Murray, Glicksohn, **Lelo de Larrea-Mancera**, Seitz & Shams (2018). *Revealing Multi-sensory enhancement with the drift diffusion model.* Presented at the International Multi-Sensory Research Forum. Toronto, Canada.
24. **Poster**: **Lelo de Larrea-Mancera**, Dempsey-Jones, Makin & Seitz (2017). *Dissociable outcomes of tactile perceptual learning for simple vs complex stimuli*. Presented at the Psychonomics Society 58th Annual Meeting. Vancouver, Canada.
25. **Short talk**: *Narrow and broad-band tactile stimulation yield to different learning outcomes*. Presented at the Tactile Research Group Annual Meeting (2017). Vancouver, Canada.

# Service

1. Serve as the Acoustical Society of America Standards representative from the Psychology & Psychophysics Technical Committee (May 2024 to-date).
2. Served as reviewer for the journals: American Speech-Language-Hearing Association Perspectives, American Journal of Audiology (AJA), American Journal of Speech-Language Pathology, Behavioral Research Methods, Ear and Hearing, Frontiers in Aging Neuroscience, Frontiers in Neuroscience, Frontiers in Psychology, International Journal of Audiology, Journal of the Acoustical Society of America (JASA), JASA Express Letters (JASA EL), Journal of Cognitive Enhancement (JCE). (September 2021 to-date).
3. Served in a technical committee for the revision of the knowledge exam associated to the Psychology Licenciatura in México (EGEL-PSI). Organized by the Centro Nacional de Evaluación para la Educación Superior (CENEVAL) (September, 2015). México.

# Honors & Awards

1. **Acoustical Society of America travel awardee** for presenting*Estimating thresholds with the adaptive scan method of psychophysical testing.* Presented in the 186th Meeting of the Acoustical Society of America (May, 2024). Ottawa, Canada.
2. **Acoustical Society of America (ASA) School (May, 2024).** Ottawa, Ontario, Canada.
3. **Laureate for VR research application:** Space Party Rescue: an auditory training VR experience (July, 2023). <https://ai-xia.itch.io/spacepartyrescue>. Developed at the XR Brain Jam and presented at the Games for Change Festival. New York City, NY, USA.
4. **Travel grant** for presenting *Gamified training on spectro-temporal and spatial auditory discrimination improves intelligibility of speech in competition* at the7th Biennial Perceptual Learning Workshop (August, 2022). Alyeska, Alaska, USA.
5. **Acoustical Society of America travel awardee** for presenting*Portable Automated Rapid Testing in Spanish: Validation and norms of central hearing processes on a Mexican population.* Presented in the 182th Meeting of the Acoustical Society of America (May, 2022). Denver, CO.
6. **P&P Technical Area Selection of the Journal of the Acoustical Society of America** (March, 2021): Lelo de Larrea-Mancera et al. (2020). *Portable Automated Rapid Testing (PART) for auditory research: Validation in a normal hearing population.*
7. **UC MEXUS 5th year PhD fellowship** (Riverside, California, USA, 2020-2021).
8. **IEEE travel grant** for presenting Larrea-Mancera et al. (2019) *Does Training on Broad Band Tactile Stimulation Promote the Generalization of Learning?*In the Epigenetics and Robotics Conference (2019, Oslo, Norway).
9. **CONACYT/ UC MEXUS PhD 5 year fellowship** for the elaboration of the phd program in Psychology (Riverside, California, USA, 2016-2020).
10. **CONACYT MSc. 1 year fellowship** for the elaboration of master studies (Barcelona, Spain, 2011-2012).
11. **PRONABES scholarship for thesis projects** awarded by the Mexican government (2010, México, Cdmx).
12. **Armstrong scholarship for excellence in research**. Through the National Institute of Neurology and Neurosurgery (2009, México, Cdmx).
13. **FOGARTY scholarship for familiar Alzheimer research.** Awarded by the National Institute of Neurology and Neurosurgery and the University of Texas (2009, México, Cdmx).

# Teaching Experience

## Thesis Director/ Methodological Advisor

1. Thesis director for the student **Katia Padilla-Bustos** doing her thesis on the effects of bilingual experience on speech audiometry registered at the National Autonomous University of Mexico in collaboration with the Instituto Nacional de Neurología y Neurocirugía.
2. Thesis director for the student **Erick Israel Correa-Medina** doing his PhD on Electrophysiological markers of speech-in-noise performance across the adult lifespan. Registered at the National Autonomous University of Mexico in collaboration with the Instituto Nacional de Neurología y Neurocirugía.
3. Methodological advisor for the student **Marcelo Hinojosa-Cavada** doing his thesis on the relationship between auditory sensory decline and cognitive performance in a normative test for cognitive decline in older adults. Dissertation registered at the National Institute of Psychiatry Ramón de la Fuente in Mexico City.

## Directed presentations/posters

1. Correa-Medina Erick I., Solís-Vivanco R., Koerner, T., Gallun, FJ., Seitz, AR. & **Lelo de Larrea-Mancera, ES.** (February, 2024). Neurophysiological biomarkers of speech-in-competition performance under different conditions of attentional load. Presented at the 186th Meeting of the Acoustical Society of America. Ottawa, Ontario, Canada. *J. Acoust. Soc. Am.* 155, A305–A306. <https://doi.org/10.1121/10.0027596>
2. Padilla-Bustos, K., Gallun, FJ., Seitz, AR., Solís-Vivanco, R., & **Lelo de Larrea-Mancera, ES.** (February, 2024). Exploring the Influence of Bilingual Experience on Speech-in-Competition Measures. Presented at the 186th Meeting of the Acoustical Society of America. Ottawa, Ontario, Canada. *J. Acoust. Soc. Am.* 155, A309 (2024). <https://doi.org/10.1121/10.0027616>
3. Padilla-Bustos, K., Correa-Medina EI., Rodríguez-Violante M., Gallun, FJ., Seitz AR., Solís-Vivanco, R. & **Lelo de Larrea-Mancera, ES**. (February, 2024). Auditory Processing Abilities in persons with Parkinson’s disease. Presented at: 5th Congreso Panamericano de Enfermedad de Parkinson y Trastornos del Movimiento. Cartagena, Colombia.
4. Correa-Medina EI., Puga-González, AF., **Lelo de Larrea-Mancera, ES**., Rodríguez-Violante M. & Solís-Vivanco, R. (February, 2024). Neurophysiology of involuntary attention as a biomarker for cognitive impairment in Parkinson’s disease. Presented at: 5th Congreso Panamericano de Enfermedad de Parkinson y Trastornos del Movimiento. Cartagena, Colombia.
5. Padilla-Bustos, K., Solís-Vivanco, R., Gallun, FJ., Seitz, AR., & **Lelo de Larrea-Mancera, ES**. (December., 2023). Speech-in-competition auditory assessment and the influence of the bilingual experience. Accepted to the 185th Meeting of the Acoustical Society of America. Sydney, Australia.
6. Padilla-Bustos, K., Solís-Vivanco, R., Gallun, FJ., Seitz R., & **Lelo de Larrea-Mancera, ES**. (September, 2023). Exploring the use of Speech-on-Speech Measures in Investigating Hearing and Bilingual Experience Effects. Presented at: Segundo Congreso Internacional de Neurociencias Fronteras de las Neurociencias. Facultad de Psicología, Ciudad de México, México.
7. Padilla-Bustos, K., Solís-Vivanco, R., Gallun, FJ., Seitz, AR., & **Lelo de Larrea-Mancera, ES**. (September, 2023). Exploring the use of Speech-on-Speech Measures in Investigating Hearing and Bilingual Experience. Presented at: LXVI Congreso Nacional de la Sociedad Mexicana de Ciencias Fisiológicas. Puebla, Ciudad de México, México.
8. Cheng, A., Jacuinde, D., Attanti, V., Astafanous, A., Fernandez, A., Seitz, A., **Lelo de** **Larrea-Mancera, ES.** (April, 2023). Remote Auditory Assessment Using Portable Automated Rapid Testing (PART) and Participant-owned Devices [Conference presentation]. R’Psych Undergraduate Research Conference, Riverside, CA United States.
9. Nguyễn, L., Lee, K., Jacuinde, D., Espino, J., **Lelo de** **Larrea-Mancera, ES**., Seitz, A. R. (2023, May 21, 2021). Reliability of at home auditory assessment using loaned calibrated devices and participant-owned devices [Conference presentation]. R’Psych Undergraduate Research Conference, Riverside, CA, United States.

## Teaching Assistant (*Sep 2016 – Jun 2021*)

University of California Riverside, Psychology Department, Riverside, CA, USA.

* 14 Courses taught (quarter system) including: Introductory Psychology, Health Psychology, Research Methods in Psychology, Sensation and Perception, Cognitive Processes, Psychology and Technology, Skepticism and Pseudoscience.
* Duties: Discussion Sections were planned in coordination with a main lecturer and lead independently by Teacher Assistents. This included the design of teaching materials, lecturing, grading exams and writing submissions, and leading and managing laboratory practices. Typically one course included three groups of around 30 students each one meeting once per week for one hour.

## Main Lecturer (*Jan 2013 – Jun 2016*)

Universidad Iberoamericana (UIA), Psychology Department, Mexico City, México.

* 16 Courses taught (semester system) including: Biological basis of behavior; Neurophysiology; Cognitive processes I; Language and thought; Neurobiology of emotive behavior; Cognitive processes II; Neurochemistry and Psychopharmacology.
* Duties: Courses typically required from 2 to 4 hours of weekly lectures and additional laboratory practice in some cases. Groups typically consisted of about 20 students on average. Professors were expected to design course contents along general learning target outcomes. Generate teaching materials. Lecture classes. Design and conduct laboratory practice with students. Grade all materials.

## Invited Lecturer (single class)

Northeastern University, Boston, MA. Neuroscience seminar series. Department of Psychology (Fall, 2023)

San Diego State University, San Diego, CA. Speech, Language and Hearing Science course (Laura Coco; Fall, 2023).

Universidad Nacional Autónoma de México, Cdmx. Electrophysiology of Behavior course (Rodolfo Solís, Spring 2023).

University of California Riverside, CA. Cognitive Processes course (Aaron Seitz; Fall, 2020).

University of California Riverside, CA. Psychology and Pseudoscience course (Curt Burgess; Fall, 2019).

Oregon Health & Science University, Portland, OR. Audiology grand rounds (Frederick Gallun; Summer, 2019).

University of California Riverside, CA. Sensation and perception course (Lawrence Rosenblum; Fall, 2018).

# Selected Courses Taken

**Special Topics in Behavioral Neuroscience: Psychedelics with a focus on mechanism and clinical application.** Taught by professor Khaleel Abdul-Razak at University of California, Riverside, CA, U.S.A.

**Special Topics in Social Psychology: The science of happiness and well-being.** Taught by professor Sonja Lyubomirsky at University of California, Riverside, CA, U.S.A.

**Special Topics in BioComputation: Computational Modeling of Behavior.** Taught by professor Megan Peters at University of California, Riverside, CA, U.S.A.

**Multiple Regression & Correlation Analysis**. Taught by professor Dan Ozer at University of California, Riverside, CA, U.S.A.

**Research Methods in Cognitive Science**. Taught by professor Aaron Seitz at University of California, Riverside, CA, U.S.A.

**Experimental Design & Analysis of Variance**. Taught by professor Bob Rosenthal at University of California, Riverside, CA, U.S.A.

**Construction of Discourse in Interactive Media**. Taught by professor Simon Penny at University Pompeu Fabra, Barcelona, Spain.

**Interaction Models**. Taught by professor Narcís Pares at University Pompeu Fabra, Barcelona, Spain.

**Psychology and Cognitive Science: Thought, Brain, and Behavior.** Taught by professor Paul Verschure at Universitat Pompeu Fabra, Barcelona, Spain.

**Neurophysiology of language and thought processes.** Imparted by professor César Casasola at the National and Autonomous University of Mexico (UNAM). México City, México.

**Introduction to Ethology**. Imparted by professor Jairo Muñoz at the National and Autonomous University of Mexico (UNAM) and the Psychiatry Institute Ramón de la Fuente. México City, México.

**Philosophy of Science**. Imparted by professor Patricia Corrés-Ayala at the National and Autonomous University of Mexico (UNAM). México City, México.

# Relevant Skills

**PhD training general skill-set:**

1. Analytical thinking and innovation
2. Critical thinking and analysis
3. Creativity, originality and initiative
4. Complex problem-solving
5. Resilience, stress tolerance and flexibility

**Active learning and learning strategies:** Expert on learning from a theoretical and practical perspective.

**Leadership and Social influence:** Have guided over 30 research assistants to achieve their research goals.

**Technology Design:**

1. Key roles developing assessment and training apps at the Brain Game Center (9 years).
2. UX research with developed apps and application of key insights to re-design.
3. Development of adaptive psychophysics algorithms to improve test usability and efficiency.
4. Development of summary metrics to describe behavioral performance.

**Technology use:**

1. Programming in MATLAB, Psychophysics toolbox, Palamedes toolbox, Python & R.
2. Statistical Analysis in SPSS, JASP, Microsoft Excel, R, MATLAB.
3. PART app for auditory, visual and cognitive assessment and research.
4. Audio editing tools: Audacity, MATLAB, Logic Pro
5. Electrophysiological Analysis:EEGLAB, ERPLAB, Brain Vision Analyzer, FieldTrip.

**Behavioral Analysis:**

1. General Psychophysics
2. Computational modelling (e.g. drift diffusion modelling, Bayesian hierarchical modelling).
3. Signal detection theory.

**Scientific Writing:** I am an expert at communicating research results and actively improving my grant writing.

**Spoken Languages:** English (proficient; TOEFLibt 114/120), Spanish (native), Catalan (beginner).