

Miguel Angel Velásquez Vásquez

Personal Information:

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Education

31/12/2024 PhD in Psychology, Tulane University.

Dissertation: Investigating the effects of musical training and neurofeedback on cognitive enhancement and brain plasticity. *Advisor:* Dr. Paul J. Colombo.

07/05/2021 M.Sc. in Psychology, Tulane University.

Thesis: The effects of neural entrainment on sensorimotor synchronization. *Advisor:* Dr. Paul J. Colombo.

09/05/2014 B.S. in Psychology with Honors, University of New Orleans.

Thesis: Reciprocal relation between psychophysiological patterns of stress responsivity and sleep. *Advisor:* Dr. Elizabeth A. Shirtcliff.

Research Experience

2025 - Ongoing **Postdoctoral Researcher** Department of Psychology, University of New Orleans.
Supervisor: Dr. Debra Karhson

- Assisting with the data analysis and dissemination of research results including creation of grants, manuscripts, and presentations.
- Collecting neurophysiological, biological, and behavioral data from human participants.
- Overseeing scheduling and tracking of participants, quality control of local data collection, & data management and data transfer.

2024 **Researcher Assistant** Department of Economy, Tulane University.

Supervisor: Dr. Patrick Button & Dr. Brigham Walker

- Conducts literature reviews and statistical analyses on factors contributing to race-related accessibility issues in mental health care.

- 2018-2024 **Researcher Assistant** Department of Psychology, Tulane University.
Supervisor: Dr. Paul Colombo
- Conducting data analysis and dissemination of research results including management of grant-funded projects, writing manuscripts, and presentations.
 - Collection neurophysiological, biological, and behavioral data from human participants.
 - Overseeing scheduling of participants, data management and data transfer.
- 2014 **Researcher Assistant** Department of Psychology, University of New Orleans.
Supervisor: Dr. Connie Lamm
- Operated as a Dense Array EEG Technician.
 - Collecting neurophysiological, and behavioral data from human participants.
 - Performed data analysis on collected data.
- 2011 - 2014 **Researcher Assistant** Department of Psychology, University of New Orleans.
Supervisor: Dr. Elizabeth Shirtcliff
- Studied the stress reactivity through salivary biomarkers.
 - Collecting biological and behavioral data from human participants.
 - Wet lab technician performing enzyme-immuno assays (ELISA) on salivary samples.

Publications

(*Denotes equal contribution to the work)

- 2025 Galang, E. J.*., Velasquez, M. A.*., Elcin, D., O'Connell, S., & Colombo, P. J. (2025). Systematic Review and Meta-Analysis of the Relationships between Real-Time Neurofeedback Training Parameters and Acquisition of Neural Modulation. *Frontiers in Human Neuroscience*, 19, 1652607.
- 2024 Velasquez, M. A., Winston, J. L., Sur, S., Yurgil, K. A., Upman, A. E., Wroblewski, S. R., Huddle, A., & Colombo, P. J. (2024). Music training is related to late ERP modulation and enhanced performance during the Simon task but not the Stroop task. *Frontiers in Psychology*, 18, 1384179.
- 2024 Elcin, D., Velasquez, M. A., & Colombo, P. J. (2024). Effects of acute and long-term mindfulness on the conflict resolution component of attention. *Frontiers in Human Neuroscience*, 18, 1359198.
- 2020 Yurgil, K. A., Velasquez, M. A., Winston, J. L., Reichman, N. B., & Colombo, P. J. (2020). Music training, working memory, and neural oscillations: A review. *Frontiers in Psychology*, 11, 266.

Works in Progress

- 2026 Velasquez, M. A., Weinstein, C. R., Scott, M. V., & Karhson, D. (In Preparation). Auditory task-related aperiodic EEG activity in autism spectrum disorder (ASD).
- 2026 Brigham, W., Velasquez, M. A., & Button, P. (In Preparation). Role of race concordance in mental health access.

Participation at Professional Meetings

(*Denotes collaborator-led presentations)

- 2026 (Upcoming) Velasquez, M. A., Weinstein, C. R., Scott, M. V. & Karhson, D. "Auditory task-related aperiodic EEG activity in autism spectrum disorder (ASD)." *Poster presented at the Cognitive Neuroscience Society Conference*. Vancouver, Canada
- 2023 Velasquez, M. A., Winston, J. L., Sur, S., Yurgil, K. A., Upman, A. E., Wroblewski, S. R., Huddle, A., & Colombo, P. J. "Music training is related to late ERP modulation and enhanced performance during the Simon task but not the Stroop task." *Poster presented at Society for Neuroscience Conference*. Washington, D.C.
- 2023 *Elcin, D., Velasquez, M. A., & Colombo, P. J. "Effects of acute and long-term mindfulness on the conflict resolution component of attention." *Poster presented at Society for Neuroscience Conference*. Washington, D.C.
- 2023 Velasquez, M. A., Yurgil, K. A., Winston, J. L., & Colombo, P. J. "The influence of musicianship on the timing of cognitive conflict resolution in Stroop and Simon tasks." *Poster presented at Tulane Research, Innovation and Creativity Summit*. New Orleans, LA.
- 2023 *Elcin, D., Velasquez, M. A., & Colombo, P. J. "Effects of acute and long-term mindfulness on the conflict resolution component of attention." *Poster presented at Tulane Research, Innovation and Creativity Summit*. New Orleans, LA.
- 2022 Velasquez, M. A., Yurgil, K. A., Domenech, L., Pearson, C., Winston, J. L., & Colombo, P. J. "Rhythmic priming results in neural entrainment and persistent effects on sensorimotor synchronization." *Poster presented at Health Science Research Days, Tulane University*. New Orleans, LA.
- 2021 Velasquez, M. A. "Rhythmic priming results in neural entrainment and persistent effects on sensorimotor synchronization." *Poster presented at Society for Neuroscience Conference*. Chicago, IL.
- 2021 Velasquez, M. A. "Musical experience is related to the time course of changes in levels of the immune response marker interleukin-6 after exposure to acute social stress." *Poster presented at Neuromusic VII – Fondazione Mariani*. Aarhus, Denmark.
- 2015 *Shirtcliff, E. A., Lamm, C., Lee, Y., Moody, S., & Velasquez, M. A. (2015). A neurobiological view on testosterone responsivity to reward and challenge. *Presented at the International Convention of Psychological Science (ICPS)*. Amsterdam, The Netherlands.
- 2014 Velasquez, M. A. "Reciprocal relation between psychophysiological patterns of stress responsivity and sleep." *Presented at Posters on the Hill*. Washington, D.C.

- 2014 Velasquez, M. A. "Reciprocal relation between psychophysiological patterns of stress responsivity and sleep." *Poster presented at Psychology Undergraduate Research Conference*. UCLA, Los Angeles, CA.

Talks

- 2026 "Auditory task-related aperiodic EEG activity in autism spectrum disorder (ASD)" Cognitive Neuroscience Society Data Blitz, Vancouver.
(Upcoming)
- 2026 "The effects of musical training and neurofeedback on cognitive enhancement and brain plasticity." Psychology Graduate Seminar Series, University of New Orleans .
(Upcoming)
- 2022 "The effects of neural entrainment on sensorimotor synchronization." The Robert E. Flowerree III Psychology Colloquium Series, Tulane University.

Grants, Honors & Awards

- 2026 Marie Skłodowska-Curie Actions (MSCA) Seal of Excellence (94.4%).
- 2026 Post-Doctoral Fellow Award. Cognitive Neuroscience Society 2026
- 2014 Excellence in Psychology Award. 41st annual College of Sciences Honors Convocation
- 2013 S. Thomas Elder Award Most Promising Undergraduate Research. Annual College of Sciences Honors Convocation
- 2012 Supervised Undergraduate Research Experience (SURE). Experimental program to Stimulate Competitive Research (LAEPS-CoR).

Teaching: Mentorship

Graduate Student Supervision
Charlie Weinstein, Mya Scott

Honors Thesis Student Supervision
Charlotte Pearson

Baccalaureate Student Supervision
Laura Domensch, Eldrick Galang, Conner Angelle, Ilyssa Muise, Abby Freedman, Savannah McNair, Liam Tierney

AP Research Mentor
Eesha Dasai

Skills

Programming and Statistical Tools: Matlab, R, Python, SPSS

Neuroimaging Tools: EEG, fNIRS, ERP

Signal Processing: Time-frequency analysis, power spectral density (PSD), dynamic and static functional connectivity, steady state evoked potentials (SSEP)

Wet Lab Techniques: Enzyme-linked immunosorbent assay (ELISA)
Others: E-Prime, PsychoPy, BCI

Languages: Spanish (Native), English (Fluent), French (Conversational)

Service to the Field

Ad Hoc Journal Reviewer

Frontiers in Psychology - Auditory Cognitive Neuroscience
Annals of the New York Academy of Sciences
Nature - Scientific Reports
Behavioral and Brain Functions Advances in Cognitive Psychology

Membership in Professional Societies

Cognitive Neuroscience Society (CNS)
Society for Neuroscience (SfN)
American Psychological Association (APA)
Society for Music Perception and Cognition (SMPC)
Multidisciplinary Association for Psychedelic Studies (MAPS)

Other

- 2023 **Walk-way Voices** Art installation, Greenway Supernova
- 2023 **First LEGO League Challenge Championship Judge**
- 2022 **Finalist in Novel Tech Challenge technology development program "Neurowaves: gamma wave neural stimulation through audiovisual stimulation"**