Bryan Jose Medina | Curriculum Vitae

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Education

2021-: **Ph.D. Candidate,** ***Brain and Cognitive Sciences***, MIT

Advisor(s): Dr. Josh McDermott & Dr. Ila Fiete

2016-2021: **B.S. Computer Science, Minor in Math & Cognitive Science**, University of Central Florida

Technical Skills

Programming: Python, Java, C++, C, R, Matlab, Javascript, LaTeX, Bash

Software: Emacs, R Studio

Libraries and Frameworks: PyTorch, Processing, Numpy, SciPy, Matplotlib, Plotly, Arduino

Research Experience

2021-: **Graduate Student,** ***Fiete Lab***, MIT

Advisor: Dr. Ila Fiete

2021-: **Graduate Student,** ***Laboratory for Computational Audition***, MIT

Advisor: Dr. Josh McDermott

2020-2021: **Visiting Student,** ***Department of Brain and Cognitive Sciences***, MIT

Advisor: Dr. Josh McDermott

2020: **MSRP-BIOx Research Intern,** ***Center For Brains, Minds, and Machines***, MIT

Advisor: Dr. Josh McDermott

2019: **Undergraduate Program in Neural Computation Research Intern,** ***Center for the Neural Basis of Cognition***, Carnegie Mellon University

Advisor: Dr. Robert E. Kass

2018-2019: **Undergraduate Research Assistant,** ***Center for Research in Computer Vision***, University of Central Florida

Advisor: Dr. Mubarak Shah

2017: **Undergraduate Research Assistant,** ***Hu-Lab***, University of Central Florida

Advisor: Dr. Haiyan Hu

Awards and Honors

2025: ***Emerson/Harris*** **Jazz Fellow**, MIT

2024: ***Emerson/Harris*** **Jazz Scholar**, MIT

2021: ***Henry E. Singleton*** **Fellowship**, MIT

2021: ***Dean of Science Fellow***, MIT

2021: ***National Science Foundation Graduate Research Fellow***

2021: ***Order of the Pegasus*** **Award** (Most Prestigious and Significant Award at UCF)

2020: ***Hispanic Heritage Scholarship Fund of Metro Orlando*** **Scholar**

2020: ***Hispanic Scholarship Fund*** **Scholar**

2020: **McNair Summer Research Institute Scholarship**

2020: **Massachusetts Institute of Technology Summer Research Fellow (NSF Funded)**

2019: **Ronald E. McNair Scholar**

2019: **Carnegie Mellon University Summer Research Fellow (NIH Funded)**

2017: **President's Honor Roll** (x4)

2017: **Dean's List** (x5)

2016: ***Bright Futures Academic*** **Scholar**

Publications

Clark T.H., Tuckute G., **Medina, B.J.**, Fedorenko E. (Accepted in 2025). *A distinctive meaning makes a sentence memorable*.

McPherson-McNato M.J., Undurraga E.A., Poblete M., Rojas S., Zariquiey R., Seidle A., **Medina, B.J.**, McDermott J.H. (In Review). *Aversion to screechy sounds varies with exposure to industrialized environments*.

McPherson-McNato M.J., Undurraga E.A., Dolan S.E., Durango A, **Medina, B.J.**, Godoy R.A, McDermott J.H. (Accepted in 2025). *Preferences for consonance are evident in Indigenous Amazonians with higher, but not lower, levels of global integration*.

Chen Y, Douglas H, **Medina B.J.**, Olarinre M, Siegle J.H., Kass R.E. *Population Burst Propagation Across Interacting Areas of the Brain*. **Journal of Neurophysiology.**

Abstracts, Conferences, and Presentations

ARO 2025 McDermott, J.H., **Medina, B. J.**, Hess, P, McPherson, M, Undurraga, E, Godoy, R (2025, February). *Cross-Cultural Influences of Beating on Music Perception.* Poster Presentation.

CCN 2024. Hicks, J. M., **Medina, B. J.**, McDermott, J. H., (2023, August). *Discovering the Perceptual Space of Natural Sounds from Similarity Judgments.* Poster Presentation.

ARO 2024. McPherson, M. J., Undurraga, E., **Medina, B. J.**, McDermott, J. H., (2024, February). *Preferences for loudness and pitch vary across cultures.* Poster Presentation.

Cog Sci 2023. Clark, T. H., Tuckute, G., **Medina, B. J.**, Fedorenko, E, (2023, August). *Context-sensitive features predict sentence memorability in the absence of memorable words.* Poster Presentation.

CCN 2023. **Medina, B. J.**, McDermott, J. H., (2023, August). *Normative modeling of auditory memory for natural sounds.* Poster Presentation.

COSYNE 2023. **Medina, B. J.**, McDermott, J. H., (2023, March). *Normative modeling of auditory memory for natural sounds.* Poster Presentation.

ARO 2023. **Medina, B. J.**, McDermott, J. H., (2023, February). *Psychoacoustics of Auditory Memory for Natural Sounds.* Poster Presentation.

Cog Lunch. **Medina, B. J.**, (2022, November). *Understanding auditory memory.* Department-wide talk at MIT.

MSRP Bio Presentation. Richardson, A. G., **Medina, B. J.**, Hicks, J. M., McDermott, J. H., (2022, Au-

gust). *Discovering the Perceptual Space of Natural Sounds from Similarity Judgements.* Poster Presentation.

UCF 2021 Student Symposium. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2021, April). *Pitch Representations Emerge in Artificial Neural Networks Optimized for Everyday Auditory Tasks.* Poster Presentation.

ARO 2021. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2021, February). *Pitch Representations Emerge in Artificial Neural Networks Optimized for Everyday Auditory Tasks.* Abstract Accepted.

CECIIS-2020. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, October). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception.* Abstract accepted. Oral presentation.

SACNAS. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, October). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception.* Abstract accepted. Poster presentation.

Baylor University McNair Conference. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, October). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception.* Abstract accepted. Poster presentation.

MSRPx BIO Presentation. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, August). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception.* Oral presentation.

UCLA McNair Conference. **Medina, B. J.**, Saddler, M. R., McDermott, J. H., (2020, July). *Investigating artificial neural networks optimized for ecological auditory tasks as a normative model of pitch perception.* Abstract accepted. Poster presentation.

Vision Sciences Society Annual Meeting. Hernandez, C. I., Rahill, K., Pham, M., Manriquez, L., Louis, P., Figueroa, A., **Medina, B. J.**, Wolfe, B., Sawyer, B. D., (2020, May). *Prevalence effects are not driving hazard detection on the road.* Abstract accepted. St. Pete Beach, FL. Did not attend due to COVID-19 (Coronavirus) pandemic.

Showcase of Undergraduate Research Excellence. Hernandez, C. I., Rahill, K., Pham, M., Manriquez, L., Louis, P., Figueroa, A., **Medina, B. J.**, Wolfe, B., Sawyer, B. D., (2020, April). *Prevalence effects are not driving hazard detection on the road.* Abstract accepted to Conference at the University of Central Florida, canceled due to COVID-19 (Coronavirus) pandemic

Center for the Neural Basis of Cognition's Summer Undergraduate Poster Session. **Medina, B. J.**, Olanrire, T., Siegle, J., Kass, R. E., (2019, August). *Response Latencies Across Six Visual Areas in the Mouse.* Presented research conducted with Dr. Robert E. Kass and Tolani Olanrire, Ph.D. student in Machine Learning, at Carnegie Mellon University

Leadership, Membership and Outreach

2025: **EDGE/X MIT Tour Guide**, MIT

Supervisor: Dr. Jill Crittenden

2023: **Decoding the Brain,** ***Cambridge Science Festival***, MIT

Supervisor: Dr. Jill Crittenden

2024-Present: BCS **Resource for Easing Friction and Stress (REFS)**, *School of Science*, MIT

Supervisor: Suraiya Baluch

2023: **Speed Science,** ***McGovern Institute for Brain Research***, MIT

Supervisor: Julie Prior, Kara Flyg

2023: **Decoding the Brain,** ***McGovern Institute for Brain Research***, MIT

Supervisor: Dr. Jill Crittenden

2020-2021: **Graduate Prep Advisor,** ***Academic Advancement Programs***,
University of Central Florida

Supervisor: Colleen Smith

2020: **Attendee,** ***Virtual Brains, Minds, and Machines Summer Course***,
Center for Brains, Minds, and Machines

2020-2021: **Vice-President,** ***SACNAS***, University of Central Florida

Advisor: Michael Aldarondo-Jeffries

2020-2021: **Co-Founder**, **Vice-President,** ***Cognitive Sciences Club***, University of Central Florida

Advisor: Dr. Luis Favela

2020: **Journal Club Attendee,** ***UCF NLP Group***, University of Central Florida

Advisor: Dr. Fei Liu

2020: **Attendee,** ***Quantitative Methods Workshop***, Massachusetts Institute Of Technology

Advisor: Dr. Mandana Sassanfar

2020: ***GIS Day*** **Volunteer**, University of Central Florida

2019, 2020: **Volunteer,** ***SECME Regional Competition***, University of Central Florida

2019, 2020: **Judge,** ***SECME Codecraft Computer Programming Competition***,
University of Central Florida

2018-2019: **STEM Ambassador** ***Initiatives in STEM***, University of Central Florida

Advisor: Rene Johnston

2016: **Teacher,** ***Hour of Code***, University of Central Florida

Teaching

2025: **Lecturer,** ***Quantitative Methods Workshop***, MIT

2024: **Lecturer,** ***Quantitative Methods Workshop***, MIT

2023: **Teaching Assistant,** ***9.35 Perception***, MIT

Advisor: Josh McDermott

2022: **Co-Lecturer,** ***The Ballad of You and Your Brain (MIT Educational Studies Program SPARK!)***,
MIT

Co-Lecturer: Yasmine Sami

2022: **Lecturer,** ***Introduction to Python Programming***, **Peer Lecture Series**, MIT

2021: **Teaching Assistant,** ***Quantitative Methods Workshop***, MIT

2020: **Tutorial,** ***UCF NLP***, University of Central Florida

2019: **Python Lecturer,** ***LabX***, University of Central Florida

2019-2020: **Undergraduate** ***EXCEL*** **Tutor**, University of Central Florida

2017: **Teaching Assistant and Lecturer,** ***Summer Institute @ UCF***,
University of Central Florida

Advisees

2023-2024: **Yue Chen Li** (MIT UROP)

2023-2024: **Olivia Honeycutt** (MIT UROP)

Coadvised by: Dr. Malinda McPherson-McNato (professor at Purdue University)

2022: **Ariana Richardson** (MSRP). Obtained Masters at Georgia Institute of Technology

Coadvised by: Dr. Jarrod Hicks

Invited Panels, Podcasts, Talks, and Workshops

2024: **Judge,** ***MassJAS Symposium***, MIT

2024: **Guest Lecturer for** ***Course "Brains, Minds, and Machines"***, CUNY Hunter College

2023: **Judge,** ***MassJAS Symposium***, MIT

2023: **Graduate Student Panel,** ***Academic Advancement Program***, University of Central Florida

2022: **Latinx Graduate Student Panel,** ***Academic Advancement Program***, University of Central Florida

2020: **Graduate School Preparation Podcast,** ***Elements of an Application for Funding***, University of Central Florida

2020: **Undergraduate Research and Transfer Process Panel**, Valencia College

2019: **STEM Seminar Student Panel**, University of Central Florida

2018: **Mathematics Workshop**, Hialeah Gardens High School

2018: **Lecture on Computer Science and Engineering**, Orange County Preparatory Academy

Certification

2020: ***CITI Program*, Social / Behavioral Research Investigators and Key Personnel**

Relevant Coursework

Computer Science + Statistics Courses: Object Oriented Programming, Algorithms, Robot Vision, Machine Learning*, Advanced Artificial Intelligence*, Senior Design, Statistical Theory I, Statistical Foundations for Data Science and Artificial Intelligence, Computer Understanding of Natural Language*, Information and Inference (6.437), Numerical Computing

Mathematics Courses: Calculus I-III, Ordinary Differential Equations, Linear Algebra, Probability, Random Processes and Applications, Topology

Neuroscience + Cognitive Sciences courses: Language and Culture, Philosophy of Mind, Perception, Minds and Machines: Philosophy of Cognitive Science, Systems Neuroscience I (9.011), Computational Cognitive Science (9.660), Computational Cognitive Neuroscience (NEURO1401), Biology of the Inner Ear (SHBT 201), Audition: Neural Mechanisms, Perception and Cognition (SHBT 205), Cognitive Science (9.012)

* - *Graduate Coursework (completed during undergrad)*

Languages

English: Fluent

Spanish: Fluent

Portuguese: Basic