

ZILA MARTINEZ-LOZADA, PhD
Assistant Professor
Nova Southeastern University
Department of Psychology and Neuroscience
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Education

- PhD in Genetics and Molecular Biology** February 2015
At Cinvestav-IPN, Mexico City, Mexico
Dissertation: "Participation of the Glutamate/Aspartate Transporter (GLAST) in the glutamatergic signaling."
Advisor: Prof. Arturo Ortega
- Master in Genetics and Molecular Biology** August 2010
At Cinvestav-IPN, Mexico City, Mexico
Dissertation: "Glutamate/Aspartate Transporter (GLAST) as a signal transducer molecule."
Advisor: Prof. Arturo Ortega
- B.S. in Biochemistry** June 2008
At Universidad Autonoma Metropolitana (UAM), Mexico City, Mexico
Summa Cum Laude.

Research Interests

- Astrocyte development, the generation of astrocyte heterogeneity, and astrocyte functions
- Intercellular interactions, specifically communication of astrocytes with neurons and blood vessels
- Glutamate transporters: their function, expression regulation, interaction with other proteins, and malfunction in disease
- Formation of the neurovascular unit

Employment History

- Assistant Professor** August 2024 – Present
Nova Southeastern University
Department of Psychology and Neuroscience
- Research Associate** July 2021 – July 2024
The Children's Hospital of Philadelphia (CHOP), Department of Pediatrics
Advisors: Prof. Michael B. Robinson & Prof. Eric Marsh
- Postdoctoral Fellow** July 2015 – July 2021
The Children's Hospital of Philadelphia (CHOP), Department of Pediatrics
Advisor: Prof. Michael B. Robinson
- Visiting Scholar** June – July 2014
University of Genova, Department of Experimental Medicine
Advisor: Prof. Giambattista Bonanno
- PhD Residence/Visiting Scholar** 2012 – 2013
Virginia Commonwealth University (VCU), Department of Anatomy and Neurobiology
Advisor: Prof. Babette Fuss
- Graduate Researcher** 2009 – 2015
Cinvestav-IPN, Department of Genetics and Molecular Biology
Advisor: Prof. Arturo Ortega

Grants

Presidential Research Grant
Nova Southeastern University
\$15,000 USD
August 2025 – July 2026

Rising Stars Award
International Brain Research Organization (IBRO)
\$30,000 USD
October 2025 – September 2026

Career Development Grant
International Society for Neurochemistry
\$10,000 USD
July 2025 – June 2026

Bridge to Faculty Program
The Children's Hospital of Philadelphia
\$137,600 USD
July 2022 – June 2024

AWRP Winter 2017 Postdoctoral Fellowship
17POST33670330
American Heart and Stroke Association
\$104,060 USD
July 2017 – June 2019

Postdoctoral Training Grant
CVU No.263889
CONACYT, Mexico
\$50,000 USD
July 2015 – June 2017

Doctoral Training Grant
CONACYT, Mexico
July 2010 – June 2014

Master's Degree Training Grant
CONACYT, Mexico
July 2008 – June 2010

Teaching Interest

- Introduction to Neuroscience
- Research Methods in Neuroscience
- Glia Biology
- Neurovascular unit
- Signal Transduction / Gene Expression Regulation
- Molecular and Cellular Neurobiology
- Neurobiology of the Disease
- The Aging Brain

Teaching and Mentoring Experience

- Instructor, Research Methods and Data Analysis in Neuroscience / Lab, at Nova Southeastern University, Winter 2025, Fall 2025
- Instructor, Introduction to Neuroscience / Lab at Nova Southeastern University, Fall 2024
- Mentor, Independent Research Study: Rahul Pandit, Sravika Chirla, Maria Ramirez Alleman
- Mentor, Honors Thesis: Megan Hilliard
- Mentor in the laboratory the following graduate students: Orquidia Guadalupe Mendez, Lucia Garcia Lara, Miguel Angel Escalante Lopez, and Esha Parikh; undergraduate students: Alejandra Molina Lopez, Charytin Avalos, and Isabella Song, and several high school students, 2016 - 2024
- Mentor students at the CHOP Research Institute Summer Scholars Program (CRISSP) and high school students at the CHOP Research Internship for Scholars and Emerging Scientists (RISES) students, 2022 – 2024
- Teaching Assistant, Cinvestav-IPN, Master in Toxicology, 2013-2015
Signaling pathways, Molecular Biology, and Neurotoxicology classes (assisted professor, held discussion sections, graded papers)
- Instructor, Ingenes Institute, Master in Gynecological Endocrinology, and Infertility, Epigenetics pre-recorded class (sole responsibility), 2014
- Teaching Assistant, Cinvestav-IPN, Master in Genetics and Molecular Biology, Molecular Biology of eukaryotic cells class (assisted professor, held discussion sections, graded papers), 2011-2013

Academic and Professional Honors and Awards

- Rising Stars Award, IBRO 2025
- Laboratory-Based Research Poster Award, CHOP Poster Day 2022
- Young Investigator Travel Award to the 8th Molecular Psychiatry Association Meeting 2022
- Outstanding Achievement in Poster Presentation Brain-In-Flux Meeting 2019
- Alavi-Dabiri Postdoctoral Fellowship Award, CHOP/Penn 2018
(The goals of this award are to support a young investigator who has demonstrated excellence in research related to intellectual and developmental disabilities)
- Marian Kies Memorial Award, American Society for Neurochemistry 2017
(This award is given to a junior scientist for outstanding research conducted during graduate training)
- Travel Award, 25th Meeting of the International Society for Neurochemistry August 2015
- Young Investigator Travel Award, Sociedad Chilena de Neurociencia October 2014
- Lindau Nobel Laureate Meeting Scholarship, Academia Mexicana de Ciencias July 2014
- Young Investigator Training Program Fellowship, FENS July 2014
- CAEN Travel Award to the 45th Annual ASN Meeting March 2014
- Young Investigator Educational Enhancement Award (YIEEA), ASN March 2014
- Poster Award, 12th ISN Advanced School of Neurochemistry April 2013
- Young Latin American Scholars Award (YLAS), ASN March 2012
- Best Poster Presentation at the 8th IBRO World Congress of Neuroscience July 2011
- Best student Class of 2008 (first class honor), M.Sc., Cinvestav-IPN 2010
- University Merit Medal (first class honor), B.S. UAM 2008

Publications

1. **Martinez-Lozada, Z.**, Guillem AM., Song I, Gonzalez MV, Takano H, Parikh E, Rothstein JD, Putt ME, Robinson MB. "Identification of a Subpopulation of Astrocyte Progenitor Cells in the Neonatal Subventricular Zone: Evidence that Migration is Regulated by Glutamate Signaling." *Neurochemical Research* (2025) 50:77 DOI: 10.1007/s11064-024-04326-2
2. Mueller, S.M., McFarland White, K., Fass, S.B., Chen, S., Shi, Z., Ge, X., Engelbach, J.A., Gaines, S.H., Bice, A.R., Vasek, M.J., Garbow, J.R., Culver, J.P., **Martinez-Lozada, Z.**, Cohen-Salmon, M., Dougherty, J.D., Sapkota, D., "Evaluation of the gliovascular functions of Aqp4 readthrough isoforms". *Frontiers in Cellular Neuroscience* (2023), Vol. 17 DOI: 10.3389/fn-cel.2023.1272391
3. **Martinez-Lozada, Z.**[#], Farmer, W.T.[#], Krizman, E., Schober, A., Robinson, M.B., Murai, K.K., "Cooperative regulation of the astrocytic transcriptome by neurons and endothelial cells." *Journal of Neurochemistry*

(2023) Jul, DOI:10.1111/jnc.15908 #These authors contributed equally to this manuscript.

Fig 1A of this publication was selected as the cover image for the Journal of Neurochemistry October 2023, Volume 167, Issue 1 DOI: 10.1111/jnc.15641

4. **Martínez-Lozada, Z.**, Ortega A., “Excitatory Amino Acid Transporters: Beyond Their Expected Function”. Milestone Review. *Journal of Neurochemistry* (2023) Mar, DOI: 10.1111/jnc.15809
5. **Martínez-Lozada, Z.***, Hewett S.J., Zafra F., Ortega A., “Editorial: The known, the unknown, and the future of glutamate transporters”. *Frontiers in Cellular Neuroscience* (2022) Aug, DOI: 10.3389/fncel.2022.100583
*corresponding author
6. **Martínez-Lozada, Z.**, Robinson, M. B., “Reciprocal communication between astrocytes and endothelial cells is required for astrocytic glutamate transporter expression”. *Neurochemistry International* (2020) Oct, 130:104787. DOI: 10.1016/j.neuint.2020.104787
7. Lee, M.L., **Martínez-Lozada, Z.**, Krizman, E.N., Robinson, M.B., “Brain endothelial cells induce astrocytic expression of the glutamate transporter GLT-1 by a Notch-dependent mechanism”. *Journal of Neurochemistry* (2017) Aug. DOI: 10.1111/jnc.14135
Fig 6D of this publication was selected as cover image for Journal of Neurochemistry December 2017, Volume 143, Issue 5 DOI: 10.1111/jnc.13825
8. Suarez-Pozos, E., **Martínez-Lozada, Z.**, Mendez-Flores, O.G., Guillem, A.M., Hernandez-Kelly, L.C., Castelan, F., Olivares-Bañuelos, T.N., Chi-Castañeda, D., Najimi, M., Ortega, A., “Characterization of the cystine/glutamate antiporter in cultured Bergmann glia cells”. *Neurochemistry International* (2017) Sep, 108:52-59. DOI: 10.1016/j.neuint.2017.02.011
9. **Martínez-Lozada, Z.**, Guillem, A.M., Robinson, M.B., “Transcriptional Regulation of Glutamate Transporters: From Extracellular Signals to Transcription Factors”. *Advances in Pharmacology* (2016) March, DOI: 10.1016/bs.apha.2016.01.004
10. Guillem, A.M., **Martínez-Lozada, Z.**, Hernandez-Kelly L.C., López-Bayghen, E., López-Bayghen, B., Calleros O.A., Campuzano M.R., Ortega, A. “Methylphenidate Increases Glutamate Uptake in Bergmann Glial Cells”. *Neurochemical Research* (2015) Nov, 40(11): 2317-24. DOI: 10.1007/s11064-015-1721-z
11. **Martínez-Lozada, Z.**, Ortega, A. “Glutamatergic transmission: a matter of three”. *Neural Plasticity* (2015) Article ID 787396, DOI: 10.1155/2015/787396
12. Flores-Mendez M., Escalante-Lopez M., **Martínez-Lozada, Z.**, Hernandez-Kelly L.C., Najimi M., Sokal E., Ortega, A. “Glutamate-dependent translational control through ribosomal protein S6 phosphorylation in cultured Bergmann glial cells”. *Neurochemical Research* (2015) May; 40(5): 915-23 DOI: 10.1007/s11064-015-1544-y
13. **Martínez-Lozada, Z.**, Waggner, CT., Kim, K., Hayashi, Y., Ortega, A., Fuss, B. “Activation of Sodium-dependent Glutamate Transporters regulates Oligodendrocyte Maturation via signaling through CaMKII β 's Actin Binding/Stabilizing Domain”. *Glia* (2014) Sep; 62 (9): 1543-58 DOI: 10.1002/glia.22699
14. Balderas, A., Guillem, AM., **Martínez-Lozada, Z.**, Hernández-Kelly, LC., Aguilera, J., Ortega, A. “GLAST/EAAT1 regulation in cultured Bergmann glia cells: Role of the NO/cGMP signaling pathway”. *Neurochemistry International* (2014) Jul; (73): 139-45 DOI: 10.1016/j.neuint.2013.10.011
15. Flores-Mendez, MA., **Martínez-Lozada, Z.**, Monroy, HC., Hernández-Kelly, LC., Barrera, I., Ortega, A. “Glutamate-Dependent translational control in cultured Bergmann Glia Cells: eIF2 α Phosphorylation”. *Neurochemical Research* (2013) Jul 38 (7): 1324-32 DOI: 10.1007/s11064-013-1024-1
16. **Martínez-Lozada, Z.**, Guillem, AM., Flores-Mendez, M., Hernandez-Kelly, LC., Vela, C., Meza, E., Zepeda, RC., Caba, M., Rodriguez, A., Ortega, A. “GLAST/EAAT1-induced Glutamine release via SNAT3 in Bergmann glial cells: Evidence of a functional and physical coupling”. *Journal of Neurochemistry* (2013) May 125 (4): 545-54 DOI:10.1111/jnc.12211
17. Lopez-Colome, AM., **Martínez-Lozada, Z.**, Guillem, AM., López, E., Ortega, A. “Glutamate transporter-dependent mTOR phosphorylation in Müller glia cells”. *ASN Neuro* (2012) Jul 23 4(5): e00095: 331-342 DOI: 10.1042/AN20120022
18. **Martínez-Lozada, Z.**, Hernández-Kelly, LC., Aguilera, J., López-Bayghen, E., Ortega, A. “Signaling through EAAT-1/GLAST in cultured Bergmann glial cells”. *Neurochemistry International* (2011) Nov 59 (6): 871-879 DOI: 10.1016/j.neuint.2011.07.015

Invited Talks

1. Martinez-Lozada, Z. "Astrocyte Development in the Cerebral Cortex: Lessons from Transcriptional Regulation of the Glutamate Transporter 1 (GLT1)", University of Rhode Island, George & Anne Ryan Institute for Neuroscience, May 2024, Kingston, RI, USA.
2. Martinez-Lozada, Z. "Astrocyte Development in the Cerebral Cortex: Lessons from Transcriptional Regulation of the Glutamate Transporter 1 (GLT1)", Nova Southeastern University, Department of Neuroscience, March 2024, Fort Lauderdale, FL, USA.
3. Martinez-Lozada, Z. "Astrocyte Development in the Cerebral Cortex: Lessons from Transcriptional Regulation of the Glutamate Transporter 1 (GLT1)", UPenn School of Arts & Sciences, Department of Biology, November 2023. Philadelphia, PA, USA.
4. Martinez-Lozada, Z. "Generation of Astrocyte Diversity: Lessons from Transcriptional Regulation of the Glutamate Transporter 1 (GLT1)", Great Lakes Glia meeting, October 2022. Traverse City, MI, USA.
5. Martinez-Lozada, Z. "Using transcriptional regulation of the glutamate transporter 1 (GLT-1) to define mechanisms that contribute to astrocyte development", Anatomy and Neurobiology Seminar Series, April 2021. Virginia Commonwealth University, Richmond, VA, USA.
6. Martinez-Lozada, Z. "My journey studying astrocytes", Lunch & Learn Talk, January 2021. The Children's Hospital of Philadelphia, PA, USA.
7. Martinez-Lozada, Z. "Reciprocal communication between astrocytes and endothelial cells is required for astrocytic glutamate transporters expression", Toxicology Department Seminar Series, December 2020. Cinvestav del IPN, Mexico City, Mexico.
8. Martinez-Lozada, Z. "Na⁺-Dependent Glutamate Transporters as Signal Transduction Molecules in Glial Cells", X Annual Meeting of the Chilean Society of Neuroscience, October 2014. Sociedad Chilena de Neurociencias, Valdivia, Chile.
9. Martinez-Lozada, Z. "Activation of Glutamate Transporters Regulates Oligodendrocyte Maturation", Seminar at the Pharmacy Department, Sezione di Farmacologia e Tossicologia, June 2014. Università Di Genova, Genova, Italy.

Oral Presentations

1. Martinez-Lozada, Z., Guillem, A.M., Song, I. Krizman, E., Takano, H., Rothstein, J., Robinson, M.B. "Characterization of a Subpopulation of Astrocyte Progenitor Cells in the Neonatal Subventricular Zone", American Society of Neurochemistry, April 2024. Portland, Oregon, USA.
2. Martinez-Lozada, Z., Guillem, A.M., Song, I. Krizman, E., Robinson, M.B. "Generation of Astrocyte Diversity: Lessons from Transcriptional Reporters of the Glutamate Transporter 1 (GLT1)", Neuroscience Chalk Talk, November 2022. The Children's Hospital of Philadelphia, PA, USA.
3. Martinez-Lozada, Z., Farmer, W.T., Murai, K.K., Robinson, M.B. "Neurons and endothelia regulate astrocyte transcriptome" American Society of Neurochemistry, April 2022. Roanoke, VA, USA. **Chair of symposium** "Supplying the synapse from the inside and out".
4. Martinez-Lozada, Z., Farmer, W.T., Murai, K.K., Robinson, M.B. "Neurons and endothelia regulate astrocyte transcriptome" Molecular Psychiatry meeting, March 2022. Lahaina, HA, USA. **Chair of symposium** "The role of astrocytes in neurodevelopmental and psychiatric disorders".
5. Martinez-Lozada, Z., Farmer, W.T., Murai, K.K., Robinson, M.B., "Neurons and Endothelial Cells Induce Astrocyte Maturation" American Society of Neurochemistry, July 2021.
6. Martinez-Lozada, Z., Robinson, M.B., "Origin of astrocyte subpopulations: Lessons from GLT-1 reporter mouse lines" The Children's Hospital of Philadelphia, Neuroscience Chalk Talk, May 2021. Philadelphia, PA, USA.
7. Martinez-Lozada, Z., Robinson, M.B., "Reciprocal communication between astrocytes and endothelial cells is required for astrocytic glutamate transporters expression" International Symposium for Networking in Neuroscience, September 2020.
8. Martinez-Lozada, Z., Robinson, M.B., "Identification of different cell populations in glutamate transporter 1 (GLT-1) reporter mice during development" The Children's Hospital of Philadelphia, Glia Journal Club, Agosto 2020.
9. Martinez-Lozada, Z., Robinson, M.B., "Reciprocal communication between astrocytes and endothelial cells is required for astrocytic glutamate transporters expression" The Children's Hospital of Philadelphia, Glia Journal Club, December 2019. Philadelphia, PA, USA.

10. Martinez-Lozada, Z., Lee, M.L., Robinson, M.B., “Reciprocal communication between astrocytes and endothelial cells is required for astrocytic glutamate transporters expression” Brain-In-Flux 2019 Meeting, August 2019. Quebec, Canada.
11. Martinez-Lozada, Z., Lee, M.L., Krizman, E.N., Robinson, M.B., “Endothelial cells regulate different aspects of the astrocyte biology” American Society for Neurochemistry 2018 Annual Meeting, March 2018. Riverside, California. USA. **Colloquium Organizer.**
12. Martinez-Lozada, Z., Lee, M.L., Krizman, E.N., Robinson, M.B., “Astrocyte subpopulations engage different mechanisms to control expression of the glutamate transporter 1 (GLT-1)”. The Children’s Hospital of Philadelphia, Neuroscience Chalk Talk, May 2016. Philadelphia, PA, USA.

Continuing Education

Grant Proposal Success Group Academic Training and Outreach Programs, The Children’s Hospital of Philadelphia, PA, USA	Oct 2022 – June 2024
Neuroscience Grants Club Intellectual & Developmental Disabilities Research Center (IDDRC), Neuroscience Affinity Group, The Children’s Hospital of Philadelphia, PA, USA	2020 – July 2024
Preparing for College Teaching in STEM Center for Excellence in Teaching, Learning, & Innovation, University of Pennsylvania, Philadelphia, PA, USA	Feb – April 2024
Tutorials in Genomics & Bioinformatics: RNA Sequencing Cold Spring Harbor Laboratory, NY, USA	November 2023
Project Management One-Day Workshop Skill Path, The Children’s Hospital of Philadelphia, PA, USA	November 2022
Effective and Inclusive Mentoring Workshop Center for Teaching and Learning, University of Pennsylvania, Philadelphia, PA, USA	April 2021
Principles of Scientific Teaching Workshop Academic Training and Outreach Programs, The Children’s Hospital of Philadelphia, PA, USA	May 2020
Preparing for Academic Teaching Academic Training and Outreach Programs, The Children’s Hospital of Philadelphia, PA, USA	June 2019
Active Learning in STEM Classes Center for Teaching and Learning, University of Pennsylvania, Philadelphia, PA, USA	July 2018
Graduate Writing Workshop for International Students English Language Programs, University of Pennsylvania Philadelphia, PA, USA	April 2018
Ethics of Peer Review: A Guide for Manuscript Reviewers Biomedical Postdoctoral Programs, University of Pennsylvania, Philadelphia, PA, USA	September 2017
Building Language Skills and Strategies for Successful Communication in the 21 st Century English Language & Biomedical Postdoctoral Programs, University of Pennsylvania, Philadelphia, PA, USA	Aug-Sept 2016
Scientific Writing for Non-Native Speakers of English The Children’s Hospital of Philadelphia, Philadelphia, PA, USA	April 2016
Strategically Speaking: Building Fluency for Confident Communication English Language & Biomedical Postdoctoral Programs, University of Pennsylvania, Philadelphia, PA, USA	Jan-Mar 2016

Manuscript and grant writing & Effective poster or talk preparation 9th FENS Forum of Neuroscience, Milan, Italy	July 2014
8th IBRO Canadian School of Neuroscience Development and Plasticity International Brain Research Organization & McGill University, Montreal, Canada	May 2014
Glia/Immune Interactions, Pathophysiological Mechanisms of Neurodegeneration and Targets for Therapeutics Pre-meeting Workshop, American Society for Neurochemistry, Long Beach, CA, USA	March 2014
Neurochemistry of Glia-Neuron Interaction 12th ISN Advanced School of Neurochemistry International Society for Neurochemistry, Chichén Itzá, Yucatán, Mexico	April 2013
Intra and Intercellular Communication in the Nervous System, III Advanced School of Neuroscience. Institut de Neurociències, Universitat Autònoma de Barcelona, Universidad Autònoma de Querétaro & Cinvestav-IPN, Mexico City, Mexico	November 2011
Signal Transduction in the Central Nervous System Facts and Principles II IBRO-LARC School of Neuroscience in Mexico City International Brain Research Organization & Cinvestav-IPN, Mexico City, Mexico	Oct-Nov 2010
Workshop of Immunohistochemistry Diagno Cell – Bio SB, Mexico City, Mexico.	May 2010
Neurotransmitter Receptors. IBRO-LARC Advanced School International Brain Research Organization & Cinvestav-IPN, Mexico City, Mexico	Oct-Nov 2009

Professional Affiliations

Member, Society for Neuroscience (SfN)	since 2010
Member, American Society for Neurochemistry (ASN)	since 2012
Member, International Society for Neurochemistry (ISN)	since 2012
Member, SACNAS (Advancing Chicanos/Hispanics & Native Americans in Science)	since 2020
Member, Nu Rho Psi National Honor Society in Neuroscience	since 2025

Academic Service & Leadership

Ad Hoc Reviewer, Front. in Neurosci., Front. Hum. Neurosci., Front. Cell Neurosci., British J. Pharm., Neurochem. Res., ASN Neuro, PLOS ONE, and Amino Acids	2015 – present
Member, International Society of Neurochemistry Travel Award Committee	2022 – present
Mentor, CHOP Career Mentoring Program	2024 – present
Member, Women in Neurochemistry Lunch Organizing Committee, ASN	2025 – present
Organizer, Philadelphia Bioscience Symposium “INSPIRE”	2023 – 2024
Panelist, Researchers of the Future, CHOP & Santa Casa de Sao Paulo School of Medical Sciences	2024
Panelist, Hispanic Heritage Celebration, Cell & Developmental Biology & Penn SACNAS	2023
Volunteer, CHOP Science Academy	2023 – 2024
Poster Judge, CRISSP (The CHOP Research Institute Summer Scholars Program)	2021 – 2023
Guest Editor, Frontiers in Neuroscience	2021 – 2022
Panelist, Motherhood & Science: Discussions and Reflections, CHOP	2022
Member and Circle Lead, Mentoring Circles organized by Biomedical Postdoctoral Council - Diversity Committee, UPenn	2021

Program Committee, ASN 2020/2021 Annual Meeting	2019 – 2021
Evaluator, Biomedical Postdoctoral Council Research Symposium Abstracts	2019
Evaluator, Abroad Postdoctoral Training Grants, CONACYT Mexico	2019
Educational Outreach, Girls Advancing in STEM, lab tour, and science demonstration	2018
Lead of Social Media, Young Investigator Advisory Committee, ASN	2015 – 2021