

Maria Magdalena Diehl

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EDUCATION

2000—2004	Emory University	B.S.	Neuroscience & Behavioral Biology
2006—2012	University of Rochester	Ph.D.	Neuroscience

RESEARCH EXPERIENCE

January 2013—July 2019	Postdoctoral Research Fellow University of Puerto Rico, School of Medicine Depts of Psychiatry, Anatomy & Neurobiology Advisor: Gregory J. Quirk
August 2006—December 2012	Ph.D., Neuroscience Graduate Program University of Rochester School of Medicine & Dentistry Dept of Neurobiology and Anatomy Advisor: Lizabeth M. Romanski
August 2004—July 2006	Post-baccalaureate Research Education Program (VT-PREP) Scholar Virginia Tech Dept of Psychology Advisor: Robin Panneton
Nov 2002—May 2004	Undergraduate Research Assistant Yerkes National Primate Research Center Division of Neuroscience Advisors: Jim G. Herndon and Agnès Lacreuse

GRANTS

Awarded

July 2022 – May 2025	Cognitive and Neurobiological Approaches to Plasticity (CNAP) Center Phase 2 PI: Maria Diehl (research project lead) Title: Prefrontal circuits of active avoidance under social conditions in rats
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Completed

May 2021 – April 2023	K-INBRE developmental research project program (DRPP) PI: Maria Diehl Title: Effects of social interactions on the neural circuits of fear and avoidance
February 2015—April 2018	Ruth Kirchstein National Research Service Award (NRSA) for Postdoctoral Fellows, National Institutes of Mental Health

PI: Maria M. Diehl
 Title: Investigating Active Avoidance Circuits with Unit Recording and Optogenetics
 January 2009—December 2011 Center for Visual Science, University of Rochester
 PI: David Knill
 Title: Training Grant in Vision Science
 Role: Fellowship Trainee
 December 2006—December 2008 Neuroscience training grant, University of Rochester
 PI: Howard Federoff
 Title: Interdepartmental Neuroscience Training
 Role: Fellowship Trainee

PEER-REVIEWED PUBLICATIONS

Journal Articles

- Diehl MM**, Plakke B, Albuquerque E, Romanski LM. "Representation of expression and identity by ventral prefrontal neurons." *Neuroscience (IF: 3.59)*. (2022). DOI: 10.1016/j.neuroscience.202205.033.
- Martínez-Rivera FJ, Pérez-Torres J, Velázquez-Díaz CD, Sánchez-Navarro MJ, Huertas-Pérez CI, **Diehl MM**, Phillips ML, Haber SN, Quirk GJ. "A novel insular/orbito-prelimbic circuit that prevents persistent avoidance in a rodent model of compulsive behavior." *Biological Psychiatry (IF: 13.38)*. (2022). DOI: <https://doi.org/10.1016/j.biopsych.2022.02.008>.
- Diehl MM**, Iravedra-García JM, Morán-Sierra J, Rojas-Bowe G, Gonzalez-Díaz FN, Valentín-Valentín V, Quirk GJ. "Divergent projections of the prelimbic cortex bidirectionally regulate active avoidance." *eLife (IF: 8.14)*. (2020). 9:e59281 DOI: 10.7554/eLife.59281.
- Sangha, S, **Diehl MM**, Bergstrom H, Drew M. "Know safety, no fear." *Neuroscience and Biobehavioral Reviews (IF: 8.989)*. (2019). 108:218-230. DOI: 10.1016/j.neubiorev.2019.11.006.
- Diehl MM**, Bravo-Rivera C, Quirk GJ. "The study of active avoidance: a platform for discussion." *Neuroscience and Biobehavioral Reviews (IF: 8.989)*. (2019). 107: 229-237. DOI: 10.1016/j.neubiorev.2019.09.010.
- Diehl MM**, Lempert K, Parr A, Ballard I, Steele V, Smith DV. "Toward an integrative perspective on the neural mechanisms underlying persistent maladaptive behaviors." *European Journal of Neuroscience (IF: 3.386)*. (2018). 48: 1870-1883. DOI: 10.1111/ejn.14083.
- Diehl MM**, Bravo-Rivera C, Rodríguez-Romaguera J, Pagán-Rivera PA, Burgos-Robles A, Roman-Ortiz C, Quirk GJ. "Active avoidance requires inhibitory signaling in the rodent prelimbic prefrontal cortex." *eLife (IF: 8.14)*. (2018). 7:e34657. DOI: 10.7554/eLife.34657.
- Diehl MM**. "It's in the genes: a new marker for sex differences in depression and anxiety." *Biological Psychiatry (IF: 13.38)*. (2018). 83:e35-e36. DOI: 10.1016/j.biopsych.2017.11.022.
- Bravo-Rivera C, **Diehl MM**, Román-Ortiz C, Rodríguez-Romaguera J, Rosas-Vidal LE, Bravo-Rivera H, Quiñones-Laracuente K, Do-Monte FH. "Long range GABAergic neurons in the prefrontal cortex modulate behavior." *Journal of Neurophysiology (IF: 2.225)*. (2015). 114:1357-1359. DOI: 10.1152/jn.00861.2014.
- Diehl MM** and Romanski LM. "Responses of prefrontal multisensory neurons to mismatching faces and vocalizations." *Journal of Neuroscience (IF: 6.167)*. (2014). 34: 11233-11243. DOI:

10.1523/JNEUROSCI.5168-13.2014.

Romanski LM and **Diehl MM**. "Neurons responsive to face-view in the primate ventrolateral prefrontal cortex." *Neuroscience (IF: 3.59)*. (2011). 189:223-235. DOI:

10.1016/j.neuroscience.2011.05.014.

Lacreuse A, **Diehl MM**, Goh MY, Hall MJ, Volk AM, Chhabra R, Herndon JG. "Age-related motor slowing in the rhesus monkey: behavioral and neuroimaging data." *Neurobiology of Aging (IF: 4.673)*. (2005). 26(4):543-51.

Book Chapter

Diehl MM and Romanski LM. "Processing and Integration of Faces and Vocalizations in the Primate Prefrontal Cortex" in *Integrating Face and Voice in Person Perception*, Ed. P. Belin, S. Campanella and T. Ethofer. New York: Springer, 2012. 45-69.

INVITED TALKS

August, 2022, Ventura, CA – "Activity in anterior cingulate cortex during active avoidance under social conditions in rats." Gordon Research Conference on Frontal Cortex.

June 2022, Glasgow, Scotland – "Prefrontal circuits of platform-mediated active avoidance under social conditions in rats." International Behavioral Neuroscience Society Annual Meeting, Panel Chair on "New insights into the neural circuits of threat avoidance behavior in rodents."

October 2021, Ann Arbor, MI – "Acquisition and expression of platform-mediated active avoidance under social conditions." Pavlovian Annual Meeting, Panel on "Threat Avoidance: Novel models, new insights."

March 2021, VIRTUAL – "Prelimbic circuits bidirectionally regulate active avoidance." Seminar talk at the University of Washington, Graduate Program in Neuroscience, Seattle, WA.

March 2021, VIRTUAL – "Prelimbic circuits bidirectionally regulate active avoidance." Seminar talk at Tulane Brain Institute, New Orleans, LA.

January 2021, VIRTUAL – "Divergent projections of prefrontal cortex bidirectionally modulate active avoidance." Journal club presentation to graduate students and faculty at California State University – Chico.

January 2021, VIRTUAL – "Prelimbic circuits that bidirectionally control active avoidance." Park City Winter Conference on the Neurobiology of Learning and Memory, Panel on "Novel Strategies for Advancing Active Avoidance Research."

March 2020, Blacksburg, VA – "Neural circuits of active avoidance: a potential role in promoting resilience?" 2020 Spring Virginia Tech Post-Baccalaureate Research Education Program (VT-PREP) & Initiative for Maximizing Student Development (IMSD) Carver Forum Presentation, Virginia Polytechnic Institute and State University.

January 2020, Big Sky, MT – "Projections of the prefrontal cortex regulating active avoidance." Winter Brain Conference, Panel on "Neural Systems Mediating Passive and Active Responses during Aversive Situations."

October 2019, Chicago, IL – "Prefrontal circuits that drive active avoidance." Society for Neuroscience Conference, Mini-symposium on Brain Circuits for the Selection and Scaling of Defensive Behavior.

May 2019, San Juan, Puerto Rico – "Active avoidance as a coping strategy: a model for resilience." Microsoft Research Summit.

- December 2018, Bayamón, Puerto Rico – “Prefrontal Function in Fear and Avoidance.”
Understanding Neuronal Activity: Genetics, Molecular Biology, Pharmacology,
Electrophysiology, Optogenetics, Computational, and Imaging Perspectives.
- June 2018, Boca Raton, FL – “Prelimbic function in fear and avoidance: from reaction to action.”
International Behavioral Neuroscience Society Conference, Symposium on Regulating Fear
Memories (Co-chair).
- August 2017, Easton, MA – “Expression of active avoidance depends on inhibitory responses in
rostral prefrontal neurons.” Gordon Research Seminar on Amygdala in Health and Disease.
- November 2016, Rio Piedras, Puerto Rico – “Opposing inhibition in prefrontal neurons
impairs active avoidance.” Neuroblitz, 25th Annual PR Neuroscience conference.
- February 2016, Bayamón, Puerto Rico – “Should I stay, or should I go? Probing the neural circuits of
avoidance.” Universidad del Central Caribe.
- November 2012, Rochester, NY – “Face and vocalization processing in the primate ventrolateral
prefrontal cortex.” University of Rochester Neuroscience Retreat.
- July 2009, New York City, NY – “Distinct temporal lobe projections to audiovisual regions in the
ventral prefrontal cortex support face and vocalization processing.” International Multisensory
Research Forum.
- November 2008, Washington DC – “Distinct temporal lobe projections to audiovisual regions in the
ventral prefrontal cortex support face and vocalization processing.” Advancements and
Perspectives in Auditory Neuroscience (APAN) meeting.

**SELECTED POSTER ABSTRACTS FROM SCIENTIFIC CONFERENCES & SYMPOSIA
[graduate mentees denoted with *; undergraduate mentees denoted with †; since 2019]**

- Erickson G*, Diehl MM. “Expression of active avoidance depends on the experience of a social
partner that is present during conditioning.” 2022 Kansas IDeA Network of Biomedical
Research (K-INBRE) symposium (VIRTUAL).
- Scott A†, Rodriguez K†, Maze T, Erickson G*. Diehl MM. “Behavioral differences and neural
correlates of emotional trauma on social interactions in rats.” American College of
Neuropsychopharmacology (ACNP; Abstract No. M48), 2021: San Juan, Puerto Rico.
- Erickson G*, Scott A†, Maze T, Rodriguez K†, Diehl MM. “Expression of active avoidance depends
on the experience of a social partner that is present during conditioning.” Society for
Neuroscience (SfN; Abstract No. 660.03), 2021: Chicago, IL (VIRTUAL).
- Scott A†, Rodriguez K†, Maze T, Andrusak J†, Deihle F†, Erickson G*, Diehl MM. “Sex differences in
social interactions in fear- and avoidance-conditioned rats. Fall Research Convocation, Dept
Psychological Sciences, Kansas State University, 2020: Manhattan, KS (VIRTUAL).
- Diehl MM, Iravedra-García JM, Gonzalez-Díaz FN, Quirk GJ. “Interrogating the projections of
rostral prefrontal cortex that drive active avoidance.” Molecular and Cellular Cognition Society
(MCCS) and Society for Neuroscience (SfN; Abstract No. 502.07), 2018: San Diego, CA.
- Diehl MM, Bravo-Rivera C, Rodríguez-Romaguera J, Pagán-Rivera P, Burgos-Robles A, Iravedra-
García J, Gonzalez-Díaz F, Quirk GJ. “Active avoidance depends on inhibitory responses in
rostral prefrontal neurons.” International Conference for Advanced Neurotechnology, 2018:
Ann Arbor, MI.
- Diehl MM, Iravedra-García JM, Gonzalez-Díaz FN, Quirk GJ. “Interrogating inputs to rostral

- prelimbic cortex that drive active avoidance." MCCA, 2017: Washington, DC.
- Diehl MM**, Bravo-Rivera C, Rodríguez-Romaguera J, Pagán-Rivera P, Quirk GJ. "Expression of active avoidance depends on inhibitory responses in rostral prelimbic neurons." Gordon Research Conference on Amygdala in Health and Disease, 2017: Easton, MA.
- Diehl MM**, Bravo-Rivera C, Rodríguez-Romaguera J, Pagán-Rivera P, Quirk GJ. "Opposing inhibition in prelimbic prefrontal neurons impairs active avoidance." MCCA and SfN (Abstract No. 455.03), 2016: San Diego, CA.
- Diehl MM**, Rodríguez-Romaguera J, Pagán-Rivera P, Quirk GJ. "Prelimbic cortex accelerates, but is not necessary, for active avoidance." Gordon Research Seminar (GRS) and Gordon Research Conference (GRC) on Amygdala in Health and Disease, 2015: Easton, MA.
- Bravo-Rivera C, **Diehl MM**, Román-Ortiz C, Pagán-Rivera PA, Quirk GJ. "Neuronal activity in prelimbic cortex correlates with expression of active avoidance." SfN (Abstract No. 467.10), 2014: Washington, DC.
- Diehl MM**, Diltz MD, Romanski LM. "Responses of prefrontal multisensory neurons to mismatching faces and vocalizations. Poster Abstract No. 551.06. SfN, 2013: San Diego, CA.
- Diehl MM**, Diltz MD, Romanski LM. "Neuronal activity in the primate ventral frontal lobe during discrimination tasks of emotional faces and vocalizations." Human Brain Mapping (HBM), 2011: Quebec City, QC Canada.
- Diehl MM**, Diltz MD, Romanski LM. "The role of primate ventrolateral prefrontal cortex during the evaluation of emotional faces and vocalizations." SfN (Abstract No. 578.4), 2009: Chicago, IL.
- Diehl MM**, Bartlow JM, Sugihara T, Romanski LM. "Distinct temporal lobe projections to audiovisual regions in the ventral prefrontal cortex support face and vocalization processing." SfN Abstract No. 387.25), 2008: Washington, DC.
- Diehl MM**, O'Neill WE, Allen PD, Turner JG, Walton JP. "Augmented acoustic environment slows hearing loss and reorganizes spectral receptive fields in the inferior colliculus of the DBA/2J mouse model of congenital deafness." SfN (Abstract No. 504.5), 2007: San Diego, CA.
- Diehl MM**, Varga K, Panneton P. "Six-Month-Old Infants' Perception of Native Speech Accent." International Conference on Infant Studies (ICIS), 2006: Kyoto, Japan.
- Diehl MM** and Panneton R. "Development of Infant Recognition of Language Accent." Annual Biomedical Research Conference for Minority Students (ABRCMS), 2005: Atlanta, GA.
- Diehl MM**, Goh MY, Lacreuse A. "Sex differences in brain aging in the rhesus monkey." Behavioral Research Advancements In Neuroscience (BRAIN) symposium, 2003: Emory University, Atlanta, GA.

AWARDS

- 2021: Women In Science Travel (WIST) fund
- 2020: Multimodal Integrated Neural Technologies (MINT) workshop award
- 2019: Panel Travel Fellow Awardee, 2020 Winter Conference on Brain Research
- 2019: DiGirolamo Travel Awardee, Dept of Psychological Sciences, Kansas State University
- 2019: NIH BRAINS (Broadening the Representation of Academic Investigators in NeuroScience) Fellow
- 2018: International Behavioral Neuroscience Society (IBNS) conference Travel Award

- 2016: Symposium on Persistent, Maladaptive Behaviors: why we make bad choices Travel Award
- 2015: 24th annual Puerto Rico Neuroscience conference Poster Award
- 2010: Advancements in Physiology and Auditory Neuroscience (APAN) conference Travel Award
- 2010: Conference on the Biology of Social Cognition V Tuition Award at Cold Spring Harbor Laboratory
- 2010: Statistical Analysis of Neuronal Data (SAND) conference Travel Award
- 2009: International Multisensory Research Forum (IMRF) Travel Award
- 2006: Interdepartmental Program in Neuroscience Merit Award at the University of Rochester
- 2005: Society for Research on Child Development (SRCD) conference Travel Award
- 2003: BrainStEm Fellow, study abroad neuroscience program between Emory University and the University of St. Andrews

MEMBERSHIPS

- 2020—present: Pavlovian Society
- 2018—present: International Behavioral Neuroscience Society (IBNS)
- 2017: Society of Biological Psychiatry
- 2013—present: Molecular and Cellular Cognition Society (MCCS)
- 2009: Human Brain Mapping (HBM)
- 2008: Cognitive Neuroscience Society (CNS)
- 2007-2011: Advancements and Perspectives in Auditory Neuroscience (APAN)
- 2007—present: Society for Neuroscience
- 2005: Society for Research in Child Development (SRCD)

TEACHING EXPERIENCE

Kansas State University

- 2022 Graduate Lecture on “Critically evaluating research articles”, Bioethics (PSYCH 968)
- 2021 Undergraduate course, Introduction to Behavioral Neuroscience (PSYCH 590)
Graduate Lectures (co-taught) on “Authorship” and “Mentor/mentee relationships”, Bioethics (PSYCH 968)
- 2019 – present Undergraduate course, Principles of Learning (PSYCH 475)
Graduate course, Neural circuits of motivated behaviors (PSYCH 951)

University of Puerto Rico School of Medicine

- 2013—2019 Lectures: Principles of Learning Theory
Anxiety Disorders

University of Rochester

- 2010—2012 Scientist-Instructor for Life Sciences Learning Center; taught science lessons at various high schools.
- 2008 Teaching assistant for undergraduate neuroscience laboratory.

MENTORSHIP

July 2022 – present	Shannon Ruble, psychology graduate, Kansas State University
July 2022 – present	Lexie West, psychology undergraduate, Kansas State University (PSYCH599) *McNair Scholar
May 2022 – present	Emma Wrampe, psychology undergraduate, Kansas State University (PSYCH599)
June 2022- July 2022	Allison Moser, high school student, Rock Creek High School
July 2021 – May 2022	Jenna Thompson, biology undergraduate, Kansas State University (PSYCH 599)
June 2021 – Aug 2022	Ashi Wickramasundara, high school student, Manhattan High School (also enrolled in PSYCH 599)
June 2021 – May 2022	Kelly Krehbiel, psychology undergraduate, Kansas State University (PSYCH 599)
Aug 2020 – present	Gregory Erickson, psychology graduate, Kansas State University
Jan 2020 – July 2021	Katherine Rodriguez, psychology undergraduate, Kansas State University (PSYCH 599) *McNair Scholar
Dec 2019 – May 2020	Jonathan Andrusak, Christian ministry undergraduate, Manhattan Christian College, Manhattan, KS
Dec 2019 – May 2020	Felipe Deihle, psychology undergraduate, Kansas State University (PSYCH 599)
Sept 2019 – May 2022	Alyssa Scott, psychology undergraduate, Kansas State University (PSYCH 599) *Received Shanteau Fellowship, Spring 2021 *Oral presentation at CNAP brownbag, Spring 2021 *Received Undergraduate Research Award, Spring 2020
Jan 2019 – Dec 2019	Viviana Valentín-Valentín, biology undergraduate, UPR-Rio Piedras *Current position: neuroscience PhD program, Emory University, Atlanta, GA
Aug 2018–Dec 2019	Gabriel Rojas-Bowe, biology undergraduate, UPR-Rio Piedras *Current position: neuroscience PhD program, UCLA, Los Angeles, CA
Apr 2018 – Dec 2019	Jonathan Morán-Sierra, chemistry undergraduate, UPR-Rio Piedras *Current position: Physician-Scientist training program, Washington University, St. Louis, MO
May 2017 – June 2019	Jorge M. Iravedra-García, biology undergraduate, UPR-Rio Piedras *Current position: neuroscience PhD program, Princeton University, Princeton, NJ
Mar 2017 – Aug 2018	Fabiola N. Gonzalez-Díaz, biology undergraduate, UPR-Rio Piedras *Current position: medical school, UPR-Centro Medico
Aug 2016 – May 2017	Joyce Mendoza-Navarro, biology undergraduate, UPR-Rio Piedras *Current position: neuroscience PhD program, NYU School of Medicine, New York, NY
Jan 2016 – May 2016	Nathalie Rodríguez-Rodríguez, biology undergraduate, UPR-Rio Piedras

- Jan 2016 – May 2017 Valeria Lozada-Miranda, interdisciplinary sciences, UPR-Rio Piedras
*Current position: medical school, Universidad del Central Caribe, Bayamón, PR
- May 2016 – Aug 2016 Jose Eriel Muñoz-Gomez, neuroscience undergraduate, American University, Washington, DC
*Current position: Masters student, security and surveillance studies, University of Buckingham, Buckingham, England
- Aug 2015 – May 2016 Jorge Maldonado de Jesus, biotechnology undergraduate, Universidad del Este – Carolina, Carolina, PR
*Current position: neuroscience PhD program, University of Illinois at Urbana-Champaign
- Aug 2013 – May 2015 Pablo Abner Pagán-Rivera, psychology undergraduate, Universidad del Sagrado Corazon, San Juan, PR
*Current position: PsyD graduate, Universidad Albizu Centro de Mayagüez, Mayagüez, Puerto Rico

SERVICE

Editorial Service

- 2021 – present Adhoc reviewer for *The Journal of Neuroscience* (IF: 6.167), *Neuropsychopharmacology* (IF: 7.853)
- 2020 – present Adhoc reviewer for *Learning and Memory* (IF: 4.057), *Neuropharmacology* (IF: 5.251), *Biological Psychiatry* (IF: 13.38)
- 2019 – present Adhoc reviewer for *eLife* (IF: 8.14), *Neurobiology of Learning and Memory* (IF: 3.244), *BMC Psychology* (IF: 2.543)
- 2019 – present Reviewing editor for *Frontiers in Neurology/Neuroscience/Psychiatry*

Grant Reviewing Service

- 2022 Early Career Reviewer for the NIH Biobehavioral Regulation, Learning and Ethology (BRLE) study section
- 2021 – 2022 Grant review panelist for NSF Graduate Research Fellowship Program
- 2019 Grant reviewer for U.S. Army Research Office

Other Service

- 2022 – 2024: Vice Chair, Gordon Research conference on Frontal Cortex.
- 2016 – 2017: Organizer for the annual Hike for Mental Health in El Yunque National Rainforest, Puerto Rico.
- Sept 26, 2016: Neuroscience consultant for Keanu Reeves for Replicas Film, San Juan, Puerto Rico.
- 2013 – 2019: Scientist-Instructor for Brain Awareness Week at various elementary, middle, and high schools in Puerto Rico.
- 2006 – 2012: Member, Colloquium and Retreat committee, Neuroscience Graduate Program, University of Rochester.
- 2006-2012: Graduate Women in Neuroscience (GWIS), University of Rochester.
- 2006-2008: Member and Cluster Representative, Graduate Student Society, University of

Rochester.