Courtney R. McDermott, PhD

CURRICULUM VITAE

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EDUCATION

2018 – 2024	PhD	Rutgers University, NJ. Neuroscience
2014 – 2018	BA	Queens College, NY. Neuroscience–Biology

RESEARCH EXPERIENCE

2026 – Present — *Placental extracellular vesicle modulation of neurodevelopment in human iPSC models of autism*
Postdoctoral Associate — Mentor: Morgan Firestein, PhD
Rutgers Child Health Institute of NJ, NJ — Co–Mentor: Zhiping Pang, MD, PhD

2024 – 2025 — *Scent of Security: How maternal presence and oxytocin shape innate and inherited responses to stress*
Postdoctoral Scientist — Mentor: Bianca Jones Marlin, PhD
Columbia University's Zuckerman Institute, NY

2018 – 2024 — *The effects of the 16p11.2 deletion and early life microbial alterations on hippocampal neurogenesis and behavior*
PhD Candidate in Neuroscience — Mentor: Emanuel DiCicco–Bloom, MD
Rutgers University, NJ — Co–Mentor: Martin J. Blaser, MD

2014 – 2018 — *Cholesterol–lowering drugs alter brain steroid levels in a songbird model system*
Undergraduate Researcher, Honors Thesis — Mentor: Carolyn Pytte, PhD
Queens College CUNY, NY

2016 — *Using high–throughput screening techniques to uncover the molecular mechanisms of synapse elimination*
Summer Research Assistant — Mentor: Beth Stevens, PhD
Boston Children's Hospital, MA

2015 — *The effects of growth factor stimulation on neurite extension in autism patient derived neural stem cells*
Summer Research Assistant — Mentor: Emanuel DiCicco–Bloom, MD
Rutgers University, NJ

2014 – 2015 — *The acute impact of exercise on cognitive functioning in healthy young adults*
Undergraduate Researcher — Mentor: Jeffery Halperin, PhD
Queens College CUNY, NY

FUNDING AND FELLOWSHIPS

2026 – 2030 — **K00HD125057** NIH/NICHD F99/K00 Predoctoral to Postdoctoral Advancement in Neuroscience Award
PI**:** Courtney R. McDermott

2025 – 2026 — **Kavli Scholars Fellowship**
PI**:** Courtney R. McDermott

2022 – 2024 — **F99NS130926** NIH/NINDS F99/K00 Predoctoral to Postdoctoral Advancement in Neuroscience Award
PI: Courtney R. McDermott

2021 – 2022	**CAUT22AFP011** Graduate Student Fellowship, New Jersey Governor's Council for Autism Research, a component of the NJ Department of Health PI: Courtney R. McDermott
2019 – 2020	**TL1TR003019** Predoctoral Training Grant, National Center for Advancing Translational Sciences (NCATS), a component of the NIH PI: Courtney R. McDermott
2017 – 2018	**Federal PELL Grant** Recipient**:** Courtney R. McDermott
2015 – 2017	**5T34GM070387–12** Undergraduate Training Grant, Maximizing Access to Research Careers (MARC), a component of the NIH PI: Zahra Zakeri, PhD
2015	**R25MN09572** NIH/NIMH "Summer Undergraduate Research Program in Molecular and Developmental Neurobiology, Rutgers University, NJ" PI: Janet Alder, PhD

HONORS AND AWARDS

2023	Rutgers Aaron J. Shatkin Graduate Research Award
2023	University of Utah Rising Stars in Neuroscience Recipient
2023	Association for Clinical and Translational Sciences Outstanding Predoctoral Scholar Award
2022	Society for Neuroscience Trainee and Professional Development Award
2019	NJ Autism Center of Excellence Travel Award
2019	Gordon Private Foundation Gift
2018	Neuroscience Excellence Award
2018	John V. Conti Graduation Award in Psychology
2018	Excellence in Neuroscience Research Award (Undergraduate Thesis)
2017	Northeast Undergraduate Research Organization for Neuroscience Frye Pioneering Research Award
2017	George Axelrad Chemistry Research Award
2017	Faculty for Undergraduate Neuroscience Travel Award
2016	Raphell Sims Lakowitz Undergraduate Research Award
2015	Honors in Mathematics and Natural Sciences
2015	Biology Honors Society

OUTREACH, SERVICE, AND VOLUNTEERING

2019 – Present	Scribe, Eagles Autism Foundation Grant Review Panel, West Palm Beach, FL
2023 – 2024	Committee Member, Rutgers SGS Graduate Student Advisory Committee, New Brunswick, NJ
2023 – 2024	Manuscript Reviewer, Aresty Rutgers Undergraduate Research Journal
2023 – 2024	Application Reviewer, Rutgers NJACTS TL1 Predoctoral Selection Committee
2022 – 2024	Volunteer, STEM Grads Giving Back – Upward Bound Math–Science, Piscataway, NJ
2022 – 2024	Peer Role, PEERS at The Rutgers Center for Adult Autism Services, New Brunswick, NJ
2019 – 2024	Graduate Mentor Fellow, Rutgers Honors College, New Brunswick, NJ
2019 – 2024	Facilitator, Central New Jersey Regional Brain Bee, Piscataway, NJ
2022	Abstract Reviewer, 2023 ACTS Translational Science Conference, Washington DC.
2020 – 2021	Graduate Student Associate, Rutgers STEM K–12 Program, New Brunswick, NJ
2017 – 2018	Peer Mentor, HSI–STEM Project, Queens College, Flushing, NY
2015 – 2018	Volunteer, New York Cares, New York, NY
2016	Hospital Volunteer NewYork–Presbyterian Hospital, Weill Cornell Medical Center, Department of Neurology, New York, NY
2015	Volunteer, Queens College Psychological Center, Queens College, Flushing, NY

PUBLICATIONS

1. **McDermott, C.R,** Gao, G, Mirmajlesi, A, Ntim, C, Kimbark, K, Thomas, D, Mughal, Z, Zhang, X, Zhou, X, Popov, D, Halchenko, A, Xing, J, Thakker–Varia, S, Alder, A, Millonig, J.H, Samuels, B, Blaser, M.J, DiCicco–Bloom, E. The 16p11.2 microdeletion exacerbates neurodevelopmental alterations induced by early–life microbiome perturbation. *Under revision at iScience*, available as a preprint at *bioRxiv.* 7 January 2026; doi: https://doi.org/10.1101/2025.02.25.639888

2. DiCicco–Bloom, E., **McDermott, C.R.** Neural Development and Neurogenesis. Chapter 1.4, In: Kaplan & Sadock's Comprehensive Textbook of Psychiatry, Eleventh Edition, Ed. 7 May 2024. B.J. Sadock, V.A. Sadock, P. Ruiz, Wolters Kluwer, Philadelphia.

3. Connacher, R., Williams, M., Prem, S., Yeung, P. L., Matteson, P., Mehta, M., Markov, A., Peng, C., Zhou, X., **McDermott, C.R,** Pang, Z. P., Flax, J., Brzustowicz, L., Lu, C. W., Millonig, J. H., & DiCicco–Bloom, E. Autism NPCs from both idiopathic and CNV 16p11.2 deletion patients exhibit dysregulation of proliferation and mitogenic responses. *Stem Cell Reports.* 12 Jul 2022, 17(7):1786. PMID: 35830838.

4. **McDermott, C.R,** Farmer, C, Gotham, K, Bal, V. Measurement of subcategories of repetitive behaviors in autistic adolescents and adults. Autism in Adulthood. 11 March 2020, 2(1):48–60. PMID: 32766532.

5. Aronowitz, J.V, Newman, K.L, **McDermott, C.R.** Estradiol Modulates Hemispheric Lateralization of Auditory Evoked Neural Activity in Male European Starlings (Sturnus Vulgaris). *Journal of Neuroscience Journal Club.* 16 August 2017, 37(33): 7800–7802; PMID: 28821600.

PUBLISHED CONFERENCE ABSTRACTS

1. **McDermott, C.R,** Zelmanoff, D, Sloboda, B, Yizhar, O, Marlin, B.J. *Shining light on the developing brain: A minimally invasive transcranial optogenetic approach for neural circuit manipulation in pre–weaning mice.* 2025 Society for Neuroscience Meeting. San Diego, CA. Poster#422.03.

2. **McDermott, C.R,** Gao, Z, Mirmajlesi, A, Kimbark, K, Ntim, C, Mughal, Z, Zhang, X, Zhou, X, Millonig, J.H, Samuels, B, Blaser, M.J, DiCicco–Bloom, E. *The interplay between genetic vulnerability and environmental exposures on the infant gut microbiome–brain axis: Implications for neurodevelopmental disorders.* November 15th, 2023: Society for Neuroscience Meeting. Washington, DC. Poster #450.04.

3. **McDermott, C.R,** Mirmajlesi, A, Gao, Z, Kimbark, K, Ntim, C, Zhang, X, Zhou, X, Millonig, J.H, Samuels, B, Blaser, M.J, DiCicco–Bloom, E. *Early life antibiotic exposure and genetic risk in neurodevelopmental disorders: Effects on the gut microbiome, neurogenesis, and behavior.* April 18th, 2023: Association for Clinical and Translational Science Meeting. Washington, DC.

4. **McDermott, C.R,** Mirmajlesi, A, Gao, Z, Kimbark, K, Ntim, C, Zhang, X, Zhou, X, Millonig, J.H, Samuels, B, Blaser, M.J, DiCicco–Bloom, E. *Early life antibiotic exposure and genetic risk in neurodevelopmental disorders: Effects on the gut microbiome, neurogenesis, and behavior.* November 14th, 2022: Society for Neuroscience Meeting. San Diego, CA. Poster #357.17.
   * Invited to write highlights for *Spectrum* (Autism Newsletter): https://doi.org/10.53053/NAMQ5673

5. **McDermott, C.R,** Zhang, X, Zhou, X, Millonig, J.H, Blaser, M.J, DiCicco–Bloom, E. DiCicco–Bloom, E. *Early life antibiotic exposure alters postnatal neurogenesis in 16p11.2 neurodevelopmental disorder mice*. May 12th, 2022: International Society for Autism Research Meeting. Austin, TX. Poster #401.003.

6. **McDermott, C.R,** Bal, V. *Validity of subcategories of repetitive behaviors in adolescents and adults with ASD.* May 4th, 2019: International Meeting for Autism Research. Montreal, CAN. Poster #233.018.

7. **McDermott, C.R**, Narayanan, N, Srinivasan, S, Phan, M.L, Vicario, D.S, Pytte, C.L. *Simvastatin increases neuroestradiol in female zebra finches*. November 12th, 2017: Society for Neuroscience Meeting. Washington, DC. Poster #159.20.

8. Prem, S., Williams, M., **McDermott, C.R,** Zhou, X., Matteson, P.G., Yeung, P., Lu, C.W., Pang, Z., Brzustowicz, L.M., Millonig, J.H., DiCicco–Bloom, E. *Autism Patient–Derived Neural Stem Cells Display Neurite Extension and Migration Defects.* May 12th, 2016: International Meeting for Autism Research Meeting. Baltimore, MD. Poster #109.122

9. **McDermott, C.R,** Page, K., Abreu, N., Uvaydov, S., Lin, K., Bickerton, L., Harding, C., Pytte, C.L. *Mold–Induced Inflammation Alters New Neuron Survival in the Mouse Hippocampus.* November 12th, 2015: Annual Biomedical Research Conference for Minority Students. Seattle, WA. Poster #A228.

INVITED PRESENTATIONS/PANELS

1. Queens College, CUNY Neuroscience Seminar Series. "*The interplay between genetic vulnerability and environmental exposures on the developing gut microbiome–brain axis".* April 10th, 2023. Flushing, NY.
2. University of Utah Rising Stars in Neuroscience Symposium. "*Early life antibiotic exposure and genetic risk in neurodevelopmental disorders: Effects on the gut microbiome, neurogenesis, and behavior*". May 22nd, 2023. Salt Lake City, UT & Virtual.
3. Panelist, Rutgers SGS Graduate Student Advisory Committee Fireside Chat. "*Beyond Coping: A Social Perspective on Graduate Student Mental Health".* April 24th, 2023. Piscataway, NJ.
4. Rowan University Undergraduate Neuroscience Club. "*Early life cephalosporin antibiotic exposure alters neurodevelopment and behavior*". January 31st, 2023. Glassboro, NJ.
5. Guest speaker, NJACTS "*Voices of Scientists*" Podcast. October 14th, 2022. Piscataway, NJ
6. Panelist, "Rutgers Fellowship Application Workshop for Biomedical PhD Students". September 13th, 2022. Virtual.
7. Panelist, Queens College CUNY MARC Alumni Day. October 15th, 2021. Virtual.
8. NJ ACTS Workforce Development Spring 2021 Internship Program, "Life as a TL1 Scholar at Rutgers". March 23rd, 2021. Virtual.
9. Queens College CUNY MARC Alumni Day, "*Identification and functional assessment of cellular phenotypes in autism neural precursor cells".* November 1st, 2019. Flushing, NY.

VOLUNTARY PRESENTATIONS

1. Rutgers Child Health Institute of NJ Annual Retreat, "*Placental extracellular vesicle modulation of neurodevelopment in human iPSC models of autism."* October 9th, 2026. New Brunswick, NJ.
2. Rutgers School of Graduate Studies Research Café, "*Early life alterations to the gut microbiome and its effects on neurodevelopment and behavior."* April 3rd, 2024. New Brunswick, NJ & Virtual.
3. NIH F99/K00 D–SPAN BrainTrust Scholar Presentations, "*Early life alterations to the gut microbiome and its effects on neurodevelopment."* May 15th, 2023. Virtual.
4. Rutgers University Center for Autism Research, Education & Services Conference, "*Early life antibiotic exposure and genetic risk in neurodevelopmental disorders: Effects on the gut microbiome, neurogenesis, and behavior*." October 26th, 2022: Piscataway, NJ.
5. Rutgers Neuroconnections, "*Early–life dysregulation of the gut microbiome is associated with altered neurodevelopment in the 16p11.2 deletion mouse model of autism."* October 12th, 2020. Virtual.
6. Rutgers Neuroconnections Seminar Series (Rotation project): "*Validity of subcategories of repetitive behaviors in adolescents and adults with ASD"* June 5th, 2019: Piscataway, NJ.
7. Rutgers Summer Undergraduate Research Program Presentation Day. "The Effects of Growth Factor Stimulation on Neurite Extension in Autism Patient Derived Neural Stem Cells." July 30th, 2015: Piscataway, NJ.

SELECT POSTER PRESENTATIONS

1. **McDermott, C.R,** Mirmajlesi, A, Gao, Z, Kimbark, K, Ntim, C, Zhang, X, Zhou, X, Millonig, J.H, Samuels, B, Blaser, M.J, DiCicco–Bloom, E. *Early life antibiotic exposure and genetic risk in neurodevelopmental disorders: Effects on the gut microbiome, neurogenesis, and behavior.* Rutgers Graduate Research in Interdisciplinary Biosciences Conference. April 11th, 2023. New Brunswick, NJ. **Second place poster award.**
2. **McDermott, C.R,** Zhang, X, Zhou, X, Millonig, J.H, Blaser, M.J, DiCicco–Bloom, E*. Early life microbiome dysbiosis and autism: Effects on neurodevelopment.* October 28th, 2021: Rutgers University Center for Autism Research, Education & Services Conference.
3. **McDermott, C.R,** Zhang, X, Zhou, X, Millonig, J.H, Blaser, M.J, DiCicco–Bloom, E. *Early life microbiome dysbiosis and autism: Effects on neurodevelopment.* May 14th, 2021: Rutgers University Microbiome Program Annual Retreat. Virtual.

4. **McDermott, C.R,** Yakubov, D., Barnes, J., Jackson, M., Schneier, E. *Peer mentors as general student advisors.* May 11th, 2018: Reimagining Science Education Conference at Queens College. Flushing, NY.

5. **McDermott, C.R,** Pytte, C., Phan, M. *Sex differences in the effects of statins on neurosteroids.* February 26th, 2017: NEURON Conference at Quinnipiac University. New Haven, CT. **Poster award.**

6. **McDermott, C.R,**, Page, K., Abreu, N., Uvaydov, S., Lin, K., Bickerton, L., Harding, C., Pytte, C.L. *Mold induced inflammation alters new neuron survival in the mouse hippocampus.* October 19th, 2015: Faculty for Undergraduate Neuroscience at the Society for Neuroscience Meeting. Chicago, IL.

7. **McDermott, C.R,** Lopez, A., Page, K., Uvaydov, S., Harding, C., Lin, K., Bickerton, L., Pytte, C.L. *Doxycycline increases numbers of microglia in the mouse hippocampus*. April 23rd, 2015: 29th Queens College Chapter for the Scientific Research Society (Sigma Xi) Annual Conference. Flushing, NY.

8. **McDermott, C.R,**, Lopez, A., Uvaydov, S., Harding, C., Pytte, C.L., Page, K. *Doxycycline increases numbers of microglia in the rodent hippocampus following mold exposure*. February 22nd, 2015: NEURON Conference at Quinnipiac University. New Haven, CT.

MENTORSHIP

1. Kiara Tantalean Canepa, Child Health Institute Research Program Undergraduate Student Summer 2026.

2. Christopher Salmon, Rutgers Aresty Science Program Summer 2026.

3. Luke Smith, Neuroscience and Behavior Undergraduate Student, Columbia College – Columbia University, New York, NY. 2024 – 2025. Columbia College Summer Funding Program Recipient.

4. Brea Sloboda, General Studies Undergraduate Student, Columbia University, New York, NY. 2024 – 2025. PhD Student in Behavioral Systems and Neuroscience at Rutgers University, NJ.

5. Anya Mirmajlesi, Cell Biology & Neuroscience Undergraduate Student, Rutgers University, New Brunswick, NJ. 2021 – 2024. 2023 Rutgers Aresty Fellowship Recipient. Currently a Research Assistant in the Arciniega Lab at NYU, NY.

6. Christiana Ntim, Cell Biology & Neuroscience Undergraduate Student, 2021 – 2024. 2023 NSF–funded Neuroscience Summer Undergrad Research Program at the University of Missouri–Columbia Recipient.

7. Zain Mughal, Cell Biology & Neuroscience Undergraduate Student, Rutgers University, New Brunswick, NJ. 2023 – 2024. Early Decision Acceptance into New Jersey Medical School, Class of 2029.

8. Divya Thomas, Cell Biology & Neuroscience Undergraduate Student, Rutgers University, New Brunswick, NJ. 2023 – 2024. Medical Student at St. George's University, Class of 2030.

9. Daniel Popov, Psychology Undergraduate Student, Rutgers University, New Brunswick, NJ. 2022 – 2023. Analyst at Bloomberg.

10. Alisa Halchenko, Neuroscience Undergraduate Student Summer 2023.

11. Katherine Kimbark, BS. Neuroscience Undergraduate Student Summer 2022. Currently a PhD Student in Biomedical Sciences at Penn State College of Medicine, Hershey, PA.

PROFESSIONAL MEMBERSHIPS

2026 – Present	International Society for Extracellular Vesicles
2026 – Present	American Association of Extracellular Vesicles
2021 – 2023	Associate, Society for Neuroscience's Neuroscience Scholars Program
2016 – Present	International Society for Autism Research
2015 – Present	Society for Neuroscience
2014 – Present	International Honors in Psychology