

CURRICULUM VITAE

Laura R Cortes

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EDUCATION

Georgia State University 2016-Current
Ph.D. Candidate in Neuroscience
Cumulative GPA: 4.1

University of Illinois at Urbana-Champaign 2011-2015
Bachelor of Science and Arts in **Neuroscience** through the Individual Plan of Study
Cumulative GPA: 3.96/ 4.0
Summa Cum Laude

IN PROGRESS / SUBMITTED

1. **Cortes, L.R.**, Cisternas, C.C., Cabahug, I.N.K., Mason, D., Ramlall, E., Castillo-Ruiz, A., & Forger, N.G. (2021). DNA methylation and de-methylation underlie the sex difference in estrogen receptor alpha in the arcuate nucleus. *Submitted*.
2. **Cortes, L.R.** & Forger, N.G. Role of epigenetics in shaping sex differences in brain development and behavior. *Perinatal and developmental epigenetics*. Elsevier. *Invited; submitted in 2020 (in review)*.

FIRST AUTHOR PUBLICATIONS

1. Cisternas, C.D.*, **Cortes, L.R.*** (co-first author), Golynger, I., Forger, N.G. (2020). Neonatal inhibition of DNA methylation disrupts testosterone-dependent masculinization of neurochemical phenotype. *Endocrinology*. 161 (1). doi: 10.1210/endo/bqz022.
2. **Cortes, L.R.***, Cisternas, C.D.* (co-first author), Forger, N.G. (2019). Is gender epigenetically encoded in the brain? *Frontiers in Neuroscience*. 13(173). doi: 10.3389/fnins.2019.00173.

CO-AUTHORED PUBLICATIONS

1. Drzewiecki, C.M., Willing, J., **Cortes, L.R.**, & Juraska, J.M. (2021). Adolescent stress during, but not after, pubertal onset impairs indices of prepulse inhibition in adult rats. *Developmental Psychobiology*. 00:1-14. doi: 10.1002/dev.22111.
2. Hoffiz, Y.C., Castillo-Ruiz, A., Hall, M.A.L., Hite, T.A., Gray, J.M., Cisternas C.D., **Cortes, L.R.**, Jacobs, A.J., & Forger, N.G. (2021). Birth elicits a conserved neuroendocrine response with implications for perinatal osmoregulation and neuronal cell death. *Scientific Reports*. 11:2335. doi: 10.1038/s41598-021-81511-1.
3. Cisternas, C.D., **Cortes, L.R.**, Bruggeman, E.C., Yao, B., Forger, N.G. (2020). Developmental changes and sex differences in the expression of DNA methylation and demethylation enzymes in hypothalamic regions of the mouse brain. *Epigenetics*. 15(1-2):72–84. doi:10.1080/15592294.2019.1649528.
4. Westbrook, S.R., Dwyer, M.R., **Cortes, L.R.**, & Gulley, J.M. (2020). Extended access self-administration of methamphetamine is associated with age- and sex-dependent differences in drug taking behavior and recognition memory deficits in rats. *Behav. Brain Research*. doi: 10.1016/j.bbr.2020.112659.
5. Kougias, D.G., **Cortes, L.R.**, Moody, L., Rhoads, S., Pan, Y.X., & Juraska, J.M. (2018). Effects of perinatal exposure to phthalates and a high-fat diet on maternal behavior and pup development and social play. *Endocrinology*. 159(2):1088–1105. doi:10.1210/en.2017-03047.
6. Mosley, M.M., Weathington, J., **Cortes, L.R.**, Bruggeman, E., Xue, B., Forger, N.G. (2017). Neonatal inhibition of DNA methylation alters cell phenotype in sexually dimorphic regions of the mouse brain. *Endocrinology*. 158(6):1838–1848. doi:10.1210/en.2017-00205.
7. Willing, J., **Cortes, L.R.**, Brodsky, J.M., Kim, T. & Juraska, J.M. (2017). Innervation of the medial prefrontal cortex by tyrosine hydroxylase immunoreactive fibers during adolescence in male and female rats. *Dev Psychobiol*. 59(5):583–589. doi:10.1002/dev.21525.

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8. Willing, J., Drzewiecki, C.M., Cuenod, B.A., **Cortes, L.R.**, Juraska, J.M. (2016). A role for puberty in water maze performance in male and female rats. *Behav Neurosci.* 130(4):422–427. doi:10.1037/bne0000145.

GRANTS

1. **NIH Blueprint D-SPAN Award (F99/K00; 2020)**: this ~\$400k two-phase award supports the completion of the doctoral dissertation and transition of talented graduate students to strong neuroscience post-doctoral positions. It funds up to 6 years of support. Effective Dates: January 2021–2026
2. **GSU Dissertation Grant (2020)**: this award provides \$2,000 to support the completion of research towards a PhD. Effective Dates: January 2020 – June 2020
3. **National Science Foundation Graduate Research Fellowship (2017)**: This award provides \$138,000 over three years to PhD students performing STEM research. Effective Dates: June 2017 – May 2020

FELLOWSHIPS & HONORS

1. **Organization for the Study of Sex Differences Virtual Travel Award (2021)**
2. **Outstanding Doctoral Scholar Award (2021)**: this award from the Neuroscience Institute at Georgia State University recognizes an outstanding PhD student each year
3. **Society for Neuroscience Trainee Professional Development Award (2021)**: this award recognizes students and post docs demonstrating scientific merit and excellence in research and offers opportunities to participate in SfN.
4. **Outstanding Graduate Student Service Award (2020)**: this award from the Neuroscience Institute at Georgia State University recognizes students who do exceptional outreach and departmental service
5. **Brains & Behavior Fellowship (2020; honorary)**: this award supports the career development of graduate students across disciplines at Georgia State
6. **Suttles Fellowship Award (2020)**: this award provides a \$1,500 fellowship to an outstanding doctoral student at Georgia State
7. **Society for Neuroscience Scholars Program Associate (2019-2021)**: this program provides career advancement and scientific training, and allows the opportunity to network and present research during the Society for Neuroscience meeting
8. **Honeycutt Fellowship (2018)**: this award provides \$2,000 per year for up to three years to outstanding graduate students in GSU's Neuroscience Department
9. Publication (Mosley et al. 2017) chosen as the **“Featured Article”** of the June Issue of *Endocrinology*, and as **“Best of 2017”** by the Endocrine Society
10. **Bronze Tablet/ University Honors (Spring '15)**: this recognizes the top 3% of the graduating class at UIUC
11. **Summa Cum Laude, University of Illinois at Urbana-Champaign (Spring '15)**
12. Senior Thesis Awarded **Highest Distinction (Spring '15)**
13. **James Scholar Honors Student (Fall '11 to Spring '15)**
14. **Dean's Honors List (Fall '11, Spring '12, Fall '12, Spring '13, Fall '14)**
15. **OMSA Scholastics Awards (Spring '12, '15)**

ORAL PRESENTATIONS

1. **2021 Cortes, L.R.** “Sex differences in Epigenetic Regulation of Cell Type in the Brain.” *2021 B&B [Virtual] Annual Retreat* [May].
2. **2021 Cortes, L.R.** “Epigenetic Regulation of Estrogen Receptor Alpha Neurons in the Male and Female Brain.” *Writing Your Own Blueprint: The NIH Blueprint Diversity Conference* [April].
3. **2020 Cortes, L.R.** “DNA Methylation Underlies Sexual Differentiation of Cell Type in the Brain.” *Neuromatch Conference 3.0* [virtual meeting].
4. **2019 Cortes, L.R.** “The Role of DNA Methylation in Sexual Differentiation of Cell Type.” *Neuroscience Institute Breakfast Lecture Series*, Georgia State University.
5. **2018 Cortes, L.R.** “The Role of Epigenetics in Sexual Differentiation of the Brain.” *ENDO Meeting*, Chicago, IL.
6. **2015 Cortes, L.R.** “Dopaminergic Fiber Development in the Cortex of Male and Female Rats across Adolescence.” *Undergraduate Research Symposium*, UIUC, Champaign, Illinois.
7. **2015 Cortes, L.R.** “Dopaminergic Fiber Development in the Cortex of Male and Female Rats across Adolescence.” *Undergraduate Neuroscience Society “Brown Bag”*, UIUC, Champaign, Illinois.

RESEARCH EXPERIENCE

Georgia State University, Atlanta Georgia
Forger Laboratory

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Graduate Research Assistant..... July 2016-Present
• **Dissertation:** Role of DNA methylation in sexual differentiation of neurochemical phenotype

University of Illinois at Urbana-Champaign (UIUC)

Juraska Laboratory

Lab Technician..... June 2015-June 2016

- **Project 1:** What are the behavioral and neuroanatomical effects of a gestational high-fat diet and phthalate treatment during gestation?
- **Project 2:** Does stress during adolescence differentially affect male and female depressive- and anxiety-like behavior?

Undergraduate Research Assistant..... January 2013-May 2015
Senior Thesis Project: Dopaminergic fiber development of the medial prefrontal cortex in male and female rats during adolescence. Published April 2017.

Gulley Lab

Lab Technician..... June 2015-June 2016

- Are there sex-dependent differences in methamphetamine self-administration during adolescence in rats?

CONFERENCE POSTERS

1. **Cortes, L.R.**, Cisternas, C.D., Mason, D., Cabahug, I.N.K.V., Castillo-Ruiz, A., Forger, N.G. Sex differences in epigenetic regulation of estrogen receptor alpha expression in the hypothalamus across development. *Steroids and the Nervous System [virtual]*, February 2021.
2. **Cortes, L.R.**, Cisternas, C.D., Mason, D., Cabahug, I.N.K.V., Castillo-Ruiz, A., Forger, N.G. Dna methylation of estrogen receptor alpha and its role in specifying sex differences in cell phenotype within the arcuate nucleus. *Society for Neuroscience Global Connectome [virtual]*, January 2021.
3. **Cortes, L.R.**, Cisternas C.D., Forger, N.G. Effect of early-life knock-down of DNMTs and TETs on sex differences in cell type in the hypothalamus. *Society for Neuroscience*, Chicago IL, October 2019.
4. **Cortes, L.R.**, Cisternas C.D., Forger, N.G. The impact of DNA methyltransferase inhibition on early-life masculinization of cell phenotype. *Organization for the study of sex differences*, Washington, DC., May 2019.
5. Cisternas C.D., **Cortes, L.R.**, Forger, N.G. A novel role for DNA hydroxymethylation in the sexual differentiation of the mouse brain. *Organization. for the study of sex differences*, Washington, DC., May 2019.
6. **Cortes, L.R.**, Cisternas, C.D., Golynger, I., & Forger, N.G. Effects of neonatal testosterone and a DNA methyltransferase inhibitor on the sexual differentiation of cell phenotype in the mouse brain. *Atlanta Neuroscience Symposium*, Atlanta GA, March 2019.
7. **Cortes, L.R.**, Cisternas, C.D., Golynger, I., & Forger, N.G. Effects of neonatal testosterone and a DNA methyltransferase inhibitor on the sexual differentiation of cell phenotype in the mouse brain. *Brains & Behavior Retreat*, Georgia State University, May 2018.
8. Cisternas, C.D., **Cortes, L.R.**, & Forger N.G. Role of active demethylation in sexual differentiation of the mouse brain. *Organization for the study of sex differences meeting*, Atlanta, GA, April 2018.
9. Golynger, I., Cisternas C.D., **Cortes, L.R.**, & Forger, N.G. The role of testosterone and DNA methylation in the “Decision” of Neurons to express calbindin in the mouse brain. *Georgia State Undergraduate Research Conference*, Atlanta, GA, April 2018.
10. **Cortes, L.R.**, Cisternas, C.D., Golynger, I., & Forger, N.G. Effects of neonatal testosterone and a DNA methyltransferase inhibitor on the sexual differentiation of cell phenotype in the mouse brain. *Society for Neuroscience*, San Diego CA, November 2018.
11. Cisternas C.D., **Cortes L.R.**, Bruggeman E, Yao B, Forger N.G. 5-hydroxymethylcytosine as a stable epigenetic mark possibly involved in sexual differentiation of the brain. *Society for Neuroscience*, San Diego, CA, November 2018.
12. Westbrook, S.R., Dwyer, M.R. **Cortes, L.R.**, & Gulley, J.M. Effects of age-of-onset and sex on escalation of methamphetamine self-administration, subsequent recognition memory, and receptor expression in Sprague-Dawley rats. *Society for Neuroscience*, San Diego, CA, November 2018.
13. Drzewiecki, C.M., Willing, J., **Cortes, L.R.** & Juraska, J.M. Stress during adolescence does not alter total number or morphology of microglia in the male or female mPFC in adulthood. *Society for Neuroscience*, Washington DC, November 2017.
14. Kougias, D.G., **Cortes, L.R.**, Rhoads, S.G. & Juraska, J.M. The effects of perinatal exposure to phthalates and a high-fat diet on maternal behavior, indices of pup development, and periadolescent behavior. *NIEHS Environmental Health Science FEST*, Durham, NC, December 2016

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15. Willing, J., Kougias, D.K., **Cortes, L.R.**, Drzewiecki, C.M., Wehrheim, K.E. & Juraska, J.M. Long-term behavioral effects of perinatal exposure to phthalates and maternal high-fat diet in male and female rats. *Society for Neuroscience*, San Diego, CA, November 2016.
16. Drzewiecki, C.M., Willing, J., **Cortes, L.R.** & Juraska, J.M. Pubertal stress exerts sex-specific deficits in pre-pulse inhibition and forced swim test performance in adulthood. *Society for Neuroscience*, San Diego, CA, November 2016.
17. Drzewiecki, C.M., Willing, J., **Cortes, L.R.** & Juraska, J.M. Pubertal stress exerts sex-specific deficits in pre-pulse inhibition and forced swim test performance in adulthood. *Society for Neuroscience*, San Diego, CA, November 2016.
18. Kougias, D.G., **Cortes, L.R.**, Rhoads, S.G., Juraska, J.M. Perinatal exposure to phthalates and a high-fat diet affects maternal behavior, indices of pup development, and periadolescent behavior. *Society for Neuroscience*, San Diego CA, November 2016.
19. Willing, J., Kougias, D.G., **Cortes, L.R.**, Drzewiecki C.M., Wehrheim K.E., Juraska, J.M. Long-term behavioral effects of perinatal exposure to phthalates and maternal high-fat diet in male and female rats. *Society for Neuroscience*, San Diego CA, November 2016.
20. **Cortes, L.R.**, Willing, J., Juraska, J. Development of dopaminergic fibers in the mPFC of male and female rats during development. *Undergraduate Research Symposium*, University of Illinois, April 2015.
21. **Cortes, L.R.** “Dopaminergic fiber development in the cortex of male and female rats across adolescence.” *Undergraduate Neuroscience Society “Brown Bag” Posters*, UIUC, Champaign, Illinois.
22. Willing, J., Brodsky, J.M., **Cortes, L.R.**, Kim, T. & Juraska, J.M. Development of dopaminergic fibers in the medial prefrontal cortex of male and female rats during adolescence. *Society for Neuroscience*, Chicago, IL, October 2015.
23. Willing, J., Kim, T.H., Brodsky, J.M., **Cortes, L.R.** & Juraska, J.M. The timing of neuroanatomical changes across adolescence in the male and female rat medial prefrontal cortex. *Society for Neuroscience*, Washington DC, November 2014.

TEACHING & MENTORING

Instructor

2019 **Alternative Careers in Science** (Spring)

A peer and I developed the curriculum and invited speakers for this course

2021 **Advanced Readings** (Spring)

I am overseeing 2 credit hours of advanced readings for a Master’s student in the Forger Lab.

Teaching Assistantships

2017 **Hormones and Behavior** (Spring)

Lectures

“Neurobiology of Stress I”

“Neurobiology Stress II”

“Mood Disorders”

Guest Lecturer

2019 **Hormones & Behavior** (Spring) Georgia State University

“Hormonal Regulation of Learning and Memory”

2018 **Hormones & Behavior** (Spring) Georgia State University

“Neurobiology of Stress I”

“Neurobiology Stress II”

Mentees

2019 – Current Damian Mason (GSU M.S. student) **Project:** Long-term effects of DNA methylation inhibition on ER α

- Co-author on submitted article (Cortes et al., 2021).
- 1 poster presentation

2019 – Current Kenji Cabahug (GSU undergrad) **Project:** Effect of uterine position on ER α expression

- Awarded a Brains and Behavior Summer Fellowship in 2020
- Co-author and co-writer on submitted article (Cortes et al., 2021).
- 3 poster presentations, 1 upcoming poster presentation, 1 oral presentation

2019 – 2020 Ilona Golynger (GSU undergrad) **Project:** Effect of siRNA knock-down of Dnmts and Tets on POA

- Co-author on Cisternas*, Cortes* et al., 2020
- 1 poster presentation under my mentorship

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2018 Lee Beaty (Post Bac Volunteer) **Project:** Development of ER α sex differences

EXTRACURRICULARS & COMMUNITY SERVICE

Committees & Leadership Roles

- 2020 **Society for Behavioral Neuroscience Planning Committee** (*postponed to 2021*)
- 2019 – 2020 **Neuroscience Graduate Student Association Co-president**
- Liaison between graduate student body and faculty
 - Provide outreach opportunities
 - Organize bi-weekly writing sessions, monthly meetings, and social events
- 2019 – 2020 **Atlanta Regional Brain Bee Chair**
- I organized the 2020 Atlanta Brain Bee competition and oversaw the brain bee workshops and expo.
- 2018 – 2020 **GSU Graduate student representative** for the *Atlanta Chapter of Society for Neuroscience*
- *Atlanta Brain Awareness:* With Jasmine Hope (Emory), I matched local K-12 teachers with undergraduate and graduate volunteers at GSU, Emory, and Georgia Tech for classroom visits.
 - *Atlanta Science Festival:* I co-organized the ACSfN booth at the science festival: “Hey you touched my brain!”
- 2019 **Intern for Liz Weaver; Brains and Behavior Undergraduate Workshops**
- I organized a Career Panel Workshop to expose undergraduates to diverse careers in science
- 2018 – 2019 **Atlanta Regional Brain Bee Workshop Coordinator**
- I organized two training workshops for high school students competing at the brain bee
 - I recruited and managed graduate and undergraduate volunteers as lecturers
- 2017 – 2018 **Outreach Committee** for the Neuroscience Department of Georgia State University
- I recruited graduate students for upcoming outreach events in the neuroscience department at GSU
- 2018 **Planning Committee** for the Organization for the Study of Sex Differences (OSSD)
- I helped create the conference program and had organizational role

Departmental Service

- 2021 **Panelist** at “NIH Graduate Funding” session organized by Dr. Dan Cox
- 2018 – Current **Co-coordinator** for GSU Neuroscience Institute Breakfast and Learning Series
- 2018 **Co-led** a *Research Skills Workshop* for the Honors College titled “Research Ethics & Methods for Natural and Computational Sciences”
- 2018 **Panelist** at the “Career Panel Workshop” by GSU undergraduate research program
- 2018 **Panelist** at the “Graduate Funding Workshop” by Brains & Behavior
- 2018 **Panelist** NSF Graduate Research Fellowship Program Information Session
- 2018 **Workshop Instructor** for “GSU Undergraduate CV Building”
- 2018 – 2020 **Volunteer** for GSU Recruitment
- 2016 – 2018 **Volunteer** for SfN Graduate School Fair

Community Outreach

- 2019 **Classroom Science Presenter** at Howard School
- 2019 – 2017 **Exhibitor for Atlanta Science Festival** *I exposed Atlanta locals to a real human brain and taught them about basic anatomy*
- 2018 **Podcast co-creator and interviewee** for “*Women in Atlanta Neuroscience*” featured on the Greg Suess Podcast.
- 2018 – 2017 **Exhibitor for the Atlanta Brain Bee:** “*Your brain on adolescence*”
- 2017 **Brain Bee Workshop Lecturer:** “*Learning and Memory*”
- 2018 **Exhibitor for Fernbank after Dark:** “*Love on the brain*”
- 2017 **Interviewee** for Dr. Deboleena Roy’s book and blog: “*The co-production of knowledge by reproductive justice advocates and molecular biologists*”
- 2017 – 2016 **Exhibitor** for Fernbank Family Day: “*Adventures in Science Day*”
- 2017 **Classroom Science Presenter** for Family Science Night at Morning Side High School
- 2017 **Participant** for *March for Science*, Atlanta GA
- 2016 – 2019 **Participant** for *Walk to End Alzheimer’s*
- 2016 **Classroom Science Presenter** at Decatur High School

PROFESSIONAL MEMBERSHIPS

- ◇ Society for Neuroscience
- ◇ Organization for the Study of Sex Differences
- ◇ Society for Behavioral Neuroendocrinology

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