

Chloe E. Page, PhD

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Education and Training

University of Pittsburgh, Pittsburgh PA

Postdoctoral Associate – 2020-2021; Dr. Shawn Sorrells Lab

Ohio State University, Columbus OH

Neuroscience Graduate Program – 2014-2019; Dr. Laurence Coutellier Lab

Doctor of Philosophy, Master of Science

Kalamazoo College, Kalamazoo MI

Bachelor of Arts – 2008-2012

With Honors on senior research thesis and comprehensive exams

Major: Psychology; Minors: Biology, Theatre; Concentration: Neuroscience

Professional Experience

2021-present Instructor, Science Writer

University of Colorado Anschutz Medical Campus, Department of Psychiatry,
Aurora CO

2020-2021 Postdoctoral Associate

University of Pittsburgh Department of Neuroscience, Pittsburgh PA

2019 Presidential Fellow

Ohio State University

2016-2018 Graduate Advising Associate

Ohio State University Neuroscience Undergraduate Advising Office

2015-2016 Graduate Teaching Associate

Ohio State University College of Arts and Sciences

2014-2015 Graduate Research Associate

Ohio State University College of Medicine

2013-2014 Report Writer and Data Analyst; Pharmacology and Discovery Services

WIL Research, Ashland OH

2012-2013 Biologist; Developmental and Reproductive Toxicology

WIL Research, Ashland OH

Research and Scholarship

PUBLICATIONS

Peer-reviewed articles

Complete list of published work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/myncbi/chloe.page.1/bibliography/public/>

1. Phimphasone-Brady P, **Page CE**, Ali DA, Haller HC, Duffy KA. (2023) Racial and ethnic disparities in women's mental health: A narrative synthesis of systematic reviews and meta-analyses of U.S. samples. *Fertility and Sterility*, 119 (3): 364-374.
2. **Page CE**, Soreth B, Metcalf CA, Johnson RL, Duffy KA, Sammel MD, Loughhead J, Epperson CN. (2023) Natural vs. surgical postmenopause and psychological symptoms confound the effect of menopause on executive functioning domains of cognitive experience. *Maturitas*, 170: 64-73.
3. **Page CE**, Biagiotti S, Alderman P, Sorrells S. (2022) Immature excitatory neurons in the amygdala come of age during puberty. *Developmental Cognitive Neuroscience*, 56: 101133.
4. Sorrells S, Paredes M, Zhang Z, Kang G, Pastor-Alonso O, Biagiotti S, **Page CE**, Sandoval K, Knox A, Connolly A, Huang E, Garcia-Verdugo JM, Oldham M, Yang Z, Álvarez-Buylla A. (2021) Positive controls in adults and children support that very few, if any, new neurons are born in the adult human hippocampus. *Journal of Neuroscience*, 41 (12): 2554-2565.
5. **Page CE***, Shepard R*, Hagerdorn P, Heslin K, Coutellier L. (2019) Prefrontal parvalbumin cells are sensitive to stress and mediate anxiety-related behaviors in female mice. *Scientific Reports*, 9 (1):19772. *Co-first author
6. **Page CE**, Coutellier L. (2019) Prefrontal excitatory/inhibitory balance in stress and emotional disorders: Evidence for over-inhibition. *Neuroscience & Biobehavioral Reviews*, 105: 39-51.
7. Joshi A, **Page CE**, Damante M, Dye CN, Haim A, Leuner B, Lenz KM. (2019) Sex differences in the effects of early life stress exposure on mast cells in the developing rat brain. *Hormones and Behavior*, 113: 76-84.
8. Aten S, **Page CE**, Kalidindi A, Wheaton K, Niraula A, Godbout J, Hoyt K, Obrietan K. (2018) Data highlighting the expression of two miR-132/212 target genes – Sirt1 and Pten – after chronic stress. *Data in Brief*, 21: 2323-2329.
9. Aten S, **Page CE**, Kalidindi A, Wheaton K, Niraula A, Godbout J, Hoyt K, Obrietan K. (2018) miR-132/212 is induced by stress and its dysregulation triggers anxiety-related behavior. *Neuropharmacology*, 144: 256-270.
10. **Page CE**, Coutellier L. (2018) Adolescent stress disrupts the maturation of anxiety-related behaviors and alters the developmental trajectory of the prefrontal cortex in a sex- and age-specific manner. *Neuroscience*, 390: 265-277.
11. **Page CE**, Coutellier L. (2018) Reducing inhibition: a promising new strategy for the treatment of schizophrenia. *EBioMedicine*, 35: 25-26.

12. **Page CE**, Alexander J, Shepard R, Coutellier L. (2018) Npas4 deficiency interacts with adolescent stress to disrupt prefrontal GABAergic maturation and adult cognitive flexibility. *Genes, Brain and Behavior*, e12459.
13. Shepard R, **Page CE**, Coutellier L. (2016) Sensitivity of the prefrontal GABAergic system to chronic stress in male and female mice: relevance for sex differences in stress-related disorders. *Neuroscience*, 332: 1-12.
14. Hansen K, Sakamoto K, Aten S, Snider KH, Loeser J, Hesse AM, **Page CE**, Pelz C, Arthur JSC, Impey S, Obrietan K. (2016) Targeted deletion of mir-132/-212 impairs memory and alters the hippocampal transcriptome. *Learning & Memory*, 23: 61-71.

Book Contributions

1. "Data Science and a Paradigm Shift for Psychiatry." *Analytics Interpreted: A Compilation of Perspectives* (published by Women in Analytics, eds. Rehg Avon and Dave Cherry, 2021).

Public Writings

1. "Improving the Lives of Black Mothers and Their Children." Contributor, CU Anschutz News, 19 June 2023. <https://news.cuanschutz.edu/news-stories/improving-the-lives-of-black-mothers-and-their-children>
2. "Star Trek as a guide to sharing intimate, personal details." Nieman Storyboard, 13 June 2023. <https://niemanstoryboard.org/stories/star-trek-as-a-guide-to-sharing-intimate-personal-details/>
 - a. Featured in Science Writing News Roundup #156, 8 July 2023. <https://sciencewriting.substack.com/p/science-writing-news-roundup-156>
3. "Guidance on the lonely road of writing." Contributor, Nieman Storyboard, 13 January 2023. <https://niemanstoryboard.org/stories/writing-workshop-freewriting-narrative-nonfiction/>
4. "For Migrants, the Path to Happiness Often Carries a Traumatic Mental Toll." Contributor, CU Anschutz News, 26 October 2022. <https://news.cuanschutz.edu/news-stories/for-migrants-the-path-to-happiness-carries-a-traumatic-mental-toll>

RESEARCH SUPPORT

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| 2019 | Presidential Fellowship, Ohio State University Graduate School [full tuition, stipend, and fees] |
| 2018 | Alumni Grant for Graduate Research and Scholarship, Ohio State University [\$4,892] |

HONORS AND AWARDS

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| 2019 | Voted Neuroscience Program Student Plenary Speaker by fellow students for the Interdisciplinary Graduate Programs Life Sciences Symposium (OSU) |
| 2018 | Trainee Professional Development Award, Society for Neuroscience |
| 2018 | Explorations in Neuroscience Camp Travel Award |
| 2018 | Travel Award to attend the Stress Neurobiology Workshop from the Pan American Neuroendocrine Society |

- 2018 Outstanding Poster Presentation Award, Interdisciplinary Graduate Studies Life Sciences Symposium (OSU)
- 2018 Travel Award, Ohio State Department of Neuroscience
- 2018 Honorable mention, Hayes Graduate Research Forum poster presentation Council of Graduate Studies (OSU)
- 2018 Corporate sponsorship to attend Women in Analytics conference from the Columbus Collaboratory
- 2017-2019 Graduate Student Conference Presentation Travel Award, Ohio State Department of Psychology

PRESENTATIONS

1. Sorrells S, **Page CE**. Molecular and morphological heterogeneity of immature neurons within the human paralaminar amygdala. Presentation at: Topics in Experimental Neuropathology, University of Pittsburgh Medical Center, 2021 July 22, Pittsburgh PA. *Co-presenter*
2. **Page CE**, Coutellier L. Prefrontal excitatory/inhibitory balance in stress-induced anxiety: Evidence for over-inhibition. Poster session at: Society for Neuroscience, 2019 October 19-23, Chicago IL. *Presenting author*
3. Lemanski E, **Page CE**, Coutellier L. Postnatal prefrontal myelination and associated maturation of social behaviors are regulated by Npas4 in mice. Poster session at: Society for Neuroscience, 2019 October 19-23, Chicago IL. *Presenting author*
4. **Page CE**, Shepard R, Hagerdorn P, Heslin K, Coutellier L. DREADD-induced modulation of prefrontal parvalbumin cell activity has sex-specific effects on emotional behaviors. Presentation at: Interdisciplinary Graduate Programs Life Sciences Symposium, 21 May 2019, Columbus OH. *Neuroscience program student plenary speaker*
5. **Page CE**. The brain out of balance: How chronic stress leads to anxiety. Presentation at: Randolph-Macon College, 2019 May 1, Ashland VA. *Invited departmental talk*
6. **Page CE**, Hagerdorn P, Coutellier L. Effects of chemogenetic inhibition of prefrontal parvalbumin interneurons on emotional and cognitive behaviors following chronic stress exposure. Poster session at: Society for Neuroscience, 2018 November 3-7, San Diego CA. *Presenting author*
7. Saulsbery AI, **Page CE**, Nelson LH, Dodson CM, Lenz KM. Early life stress effects on mast cell degranulation and blood-brain barrier function depend on the severity and chronicity of stress. Poster session at: Society for Neuroscience, 2018 November 3-7, San Diego CA. *Non-presenting author*
8. **Page CE**, Coutellier L. Adolescent stress disrupts the maturation of anxiety-related behaviors and alters the developmental trajectory of the prefrontal cortex in a sex- and age-specific manner. Poster session at: Stress Neurobiology Workshop, 2018 June 8-11, Banff, Alberta, Canada. *Presenting author and poster teaser session oral presenter*
9. Shepard R, **Page CE**, Heslin K, Coutellier L. Modulation of prefrontal parvalbumin interneurons activity by chronic stress causes changes in anxiety-like behaviors in mice.

Poster session at: Stress Neurobiology Workshop, 2018 June 8-11, Banff, Alberta, Canada.
Presenting author and poster teaser session oral presenter

10. **Page CE**, Coutellier L. Adolescent stress disrupts the maturation of anxiety-related behaviors and alters the developmental trajectory of the prefrontal cortex in a sex- and age-specific manner. Poster session at: Interdisciplinary Graduate Programs Life Sciences Symposium, 30 May 2018, Columbus OH. *Presenting author*
11. **Page CE**, Imwalle S, Coutellier L. Age- and sex-specific effects of adolescent stress on the maturation of the mouse prefrontal cortex: Implications for heterogeneity in affective disorders. Poster session at: Hayes Graduate Research Forum, 2018 March 2, Columbus OH. *Presenting author*
12. Shepard R, **Page CE**, Heslin K, Coutellier L. Chronic stress-induced changes in parvalbumin cells of the prefrontal cortex contribute to increased anxiety in a sex-specific manner. Poster session at: Society for Neuroscience, 2017 November 11-15, Washington DC. *Presenting author*
13. **Page CE**, Alexander J, Shepard R, Coutellier L. Npas4 deficient mice lack homeostatic resilience against mild stress in adolescence and show impaired cognitive flexibility in adulthood. Poster session at: Society for Neuroscience, 2017 November 11-15, Washington DC. *Presenting author*
14. **Page CE**, Alexander J, Shepard R, Coutellier L. Npas4 deficient mice lack homeostatic resilience against mild stress in adolescence and show impaired cognitive flexibility in adulthood. Poster session at: Cell Symposia: Big Questions in Neuroscience, 2017 November 9-10, Arlington VA. *Presenting author and poster teaser session oral presenter*
15. **Page CE**, Alexander J, Coutellier L. Npas4-deficient mice lack cellular resilience against mild stress in adolescence and show impaired cognitive flexibility in adulthood. Presentation at: 11th International Regional Stress and Behavior Neuroscience and Biopsychiatry Conference (North America), 2017 June 22-24, Miami Beach FL. *Oral presenter*
16. **Page CE**, Alexander J, Coutellier L. Npas4-deficient mice lack homeostatic resilience against mild stress in adolescence and show impaired cognitive flexibility in adulthood. Presentation at: Interdisciplinary Graduate Programs Life Sciences Symposium, 2017 May 23, Columbus OH. *Oral presenter*
17. Shepard R, Heslin K, **Page CE**, Coutellier L. Sex-specific circuitry regulating anxiety in situations of chronic stress in mice. Poster session at: Organization for the Study of Sex Differences; 2017 May 15-18; Montréal, QC, Canada. *Non-presenting author*
18. **Page CE**, Alexander J, Coutellier L. Npas4 deficiency interacts with adolescent stress to impair extradimensional set shifting in adulthood. Poster session at: Institute for Behavioral Medicine Research, Research Day, 2017 April 5, Columbus OH. *Presenting author*
19. Shepard R, **Page CE**, Coutellier L. Sensitivity of the prefrontal GABAergic system to chronic stress in male and female mice: relevance for sex differences in stress-related disorders. Poster session at: Neurobiology of Stress Workshop, 2016 April 12-15, Newport Beach CA. *Non-presenting author*

PROFESSIONAL MEMBERSHIPS

2017-2021 Society for Neuroscience
2018 Pan American Neuroendocrine Society

Teaching and Mentorship

COURSES AND LECTURES

2023 Open Education Resources (OER) Champion Award, University of Colorado
2022-present Course preparation and presentation for Pathways for Physician Scientist Training in Psychiatric Research didactic on sex differences and neuroendocrinology [NIMH R25 MH125758-02]
2022 Open Education Resource (OER) creation grant from the University of Colorado Anschutz Medical Campus Strauss Health Sciences Library for creating open access neuroendocrinology education material [\$2,500]
2020 Associate certification in STEM teaching from Pitt-CITRL (University of Pittsburgh Center for Integrating Research, Teaching, and Learning)
2020-2021 Assistant Instructor: Developmental Neuroscience (OSU)
2018 Guest Lecturer: Behavioral Neuroscience (OSU)
2015-2016 Course Assistant: Neurological Disease, Behavioral Neuroscience, Sensation and Perception, Cognitive Neuroscience, Behavioral Genetics (OSU)

UNDERGRADUATE ADVISING AND MENTORSHIP

2018 Neuroscience major and minor declaration advisor (OSU)
2017-2018 Website design and maintenance, <https://neurosciencemajor.osu.edu>
2017-2018 Co-Organizer, Women in Neuroscience (OSU)
2016, 2017 Seminar Instructor, Life as a Graduate Student (OSU)
2016 Co-Organizer, Midwest/Great Lakes Undergraduate Research Symposium

Service

INSTITUTION

2022 Judge, 37th Annual Research Forum (University of Colorado)
2022-present Diversity, Equity, and Inclusion committee member, Education Subcommittee (University of Colorado Department of Psychiatry)
2020-2021 Senate committee member, Gender & Racial Equity Subcommittee (University of Pittsburgh)
2020-2021 Senate committee member, Tenure & Academic Freedom Committee (University of Pittsburgh)
2017 Panelist, 47th Annual Graduate and Professional Student Recruitment Initiative, Office of Diversity and Inclusion (OSU)

2017 Judge, Undergraduate Fall Research Forum (OSU)
2016-2018 Alternate Delegate, Council of Graduate Studies Neuroscience Representative (OSU)
2016-2018 Judge, Denman Undergraduate Research Forum (OSU)
2016 Judge, Undergraduate Spring Research Expo (OSU)

COMMUNITY

2018 Volunteer, Explorations in Neuroscience summer camp, Columbus OH
2016 Volunteer, Kids' Tech University, Granville OH
2014-2019 Volunteer, Brain Awareness Week, Columbus OH
2014-2016 Volunteer, N.E.U.R.O. (Neuroscience Education, Urban and Rural Outreach)
2014 Volunteer, Stonewall Columbus Pride Parade and Festival, Columbus OH

AD HOC REVIEWER

Research in Veterinary Science, Elsevier
Bioengineered, Taylor & Francis