

GISEL FLORES-MONTOYA

Carleton College
Department of Psychology
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ACADEMIC POSITIONS

2017-present **Visiting Assistant Professor**
Carleton College (Northfield, MN)
Department of Psychology

EDUCATION

2017 **Ph.D. in Psychology with a concentration in Neuroscience**
The University of Texas at El Paso
Department of Psychology
Division of Neuroscience
Advisor: Christina Sobin, Ph.D.
Co-Advisor: Charlotte Vines, Ph.D.
Dissertation: A Behavioral and Neuroimmune System Model of the Effects of Chronic Low-Level Lead Exposure in Young Mice.

2013 **M.A. in Experimental Psychology**
The University of Texas at El Paso
Department of Psychology
Thesis: Behavioral Markers of Chronic Low-Level Lead Exposure in Young Mice.

2011 **B.A. in Psychology with a minor in Biology**
The University of Texas at El Paso
Department of Psychology
Thesis: The Effects of Chronic Low-Level Lead Exposure on the Behavior of C57BL/6 Mice.
Graduated with Honors.

RESEARCH INTERESTS

Behavioral neuroimmunology, neuroscience, neurotoxicology, health, translational science, interdisciplinary research.

RESEARCH OBJECTIVES

- Interactions between the central nervous system and immune system via brain lymphatics: role of the C-C chemokine receptor 7 (CCR7).
- The effects of chronic low-level lead exposure on microglial cell motility via CCR7 and effects on mouse behavior and memory.
- The effects of chronic low-level lead exposure on child memory and fine motor dexterity.

COURSES TAUGHT

Behavioral
Neuroimmunology
Spring 2018

Carleton College
Department of Psychology
Visiting Assistant Professor
Psych 370, Upper Division
Class size: 10 students
Upper-level course for majors and non-majors.
In this course students learn about cutting-edge research in behavioral neuroimmunology including but not limited to brain lymphatics, mechanisms of immune cell migration, gut microbiota, and effects of peripheral cytokines on behavior.

Health Psychology
Fall 2017

Carleton College
Department of Psychology
Visiting Assistant Professor
Psych 260, Lower Division
Class size: 30 students
Lower-level course for majors and non-majors.
Topics covered include but are not limited to stress, psychoneuroimmunology, and drug addiction.

Health Psychology
Laboratory
Fall 2017

Carleton College
Department of Psychology
Visiting Assistant Professor
Psych 261, Lower Division
Class size: 16 students
Lower-level course for majors and non-majors.
In this course students develop a public health campaign and create materials for a clinic (HealthFinders) in Northfield, Minnesota.

BUILDing Scholars
Program
Fall 2016

The University of Texas at El Paso
Department of Biology
Instructor of Record
Bio 1107, Lower Division
Class size: 23 students
Low-level course for biology majors
Techniques and topics covered include but are not limited to DNA digestion, bacterial transformations, protein synthesis, analyses of DNA (agarose gel electrophoresis) and proteins (western blot.)

Work with a Scientist
Program
Summer 2016

The University of Texas at El Paso
Department of Biology
Instructor of Record
Lower Division
Class size: 8 students
Upper-level course for majors and non-majors
Low-level course for biology majors
Purpose: Develop an antagonist to CCR7 to prevent leukemic cells from entering the brain.

Introduction to Statistics
Spring 2016
Fall 2015

The University of Texas at El Paso
Department of Psychology

Instructor of Record
Psych 1303, Lower Division
Class size: 40 students (spring); 48 students (fall)
Introductory course for statistics in the behavioral sciences.
Includes majors and non-majors. Topics covered include correlation
and regression, T-tests, and One-way ANOVA.

Introduction to Psychology
Spring 2015
Summer 2014
Fall 2014
Spring 2014

The University of Texas at El Paso
Department of Psychology

Instructor of Record
Psych 1301, Lower Division
Class size: 42 students (spring 2015); 52 students (summer 2014); 111
students (fall 2014); 135 students (spring 2014)
Introductory course for majors and non-majors

General Experimental
Laboratory – APA
Fall 2013

The University of Texas at El Paso
Department of Psychology

Lecturer
Psych 3101, Upper Division
Class size: 57 students
Laboratory course for General Experimental Psychology (Research
Methods)
The purpose of the laboratory is to teach psychology majors the
mechanics of APA style writing through lecture and completion of an
APA style research paper.

Medical Spanish
Spring 2012
Fall 2011

Paul L-Foster Medical School, Texas Tech University

Instructor of Record (spring 2012); Teacher assistant (fall 2011)
Lower Division Class size: 20 students (spring 2012); 20 students (fall
2011)
The purpose of this class was to teach medical terminology in Spanish
to medical students so that they could both write and communicate
effectively in Spanish with patients.

RESEARCH EXPERIENCE

Cell Signaling and
Immunology Laboratory
Summer 2015- Summer 2017

The University of Texas at El Paso
Department of Biology
Graduate Research Assistant
Principal Investigator: Charlotte Vines, Ph.D.
Research activities:

- 1) *Flow cytometric analyses of CCR7 and MHC II expression in microglial cells in animals exposed chronically to low-levels of lead.*
- 2) *Supervision of a study examining mouse behavior in CCR7 knock out and wild type mice.*

Neurocognitive Genetics and
Developmental
Neurocognition
Fall 2011-Summer 2017

The University of Texas at El Paso
Departments of Psychology and Health Sciences
Graduate Research Assistant
Principal Investigator: Christina Sobin, Ph.D.
Development and execution of studies examining effects of chronic low-level lead exposure on mouse behavior and brain that included:

- 1) *Design and execution of rodent behavioral batteries (e.g. object-in-place, unbaited nose poke, open field, rotarod, smell habituation/dishabituation)*
- 2) *Rater training methods.*
- 3) *Harvard PanLab SMART Video System.*
- 4) *Mouse colony management and animal breeding.*
- 5) *Full-body transcatheter perfusion.*
- 6) *Anesthesia and surgical techniques including hippocampal sectioning.*
- 7) *Data analytic methods for mouse studies of behavior and brain, including Generalized Linear Regression (SPSS, SAS, and Stat View) analyses.*

Neurocognitive Genetics and
Developmental
Neurocognition
Fall 2009-Fall 2011

The University of Texas at El Paso
Department of Psychology
Undergraduate Research Assistant
Principal Investigator: Christina Sobin, Ph.D.
Research activities:
Execution of child studies examining effects of chronic low-level lead exposure on memory and motor function.

PUBLICATIONS

Flores-Montoya, M.G., Vines, C., Bill, C., & Sobin C. (2018). Early chronic lead exposure reduced C-C chemokine receptor 7 in hippocampal microglia. *Neurotoxicology*, (manuscript under review).

Alvarez J., Del Rio, M., Mayorga T., Dominguez, S., **Flores-Montoya M.,** & Sobin, C. "A comparison of child blood lead levels in urban and rural children ages 5 to 12." *Archives of Environmental Contamination and Toxicology*, (manuscript under review).

Sobin C., **Flores-Montoya, M. G.,** & Alvarez J. (2017). Early chronic low-level lead exposure alters global behaviors in young C57BL/6J mice during the object-in-place visual recognition memory task. *Journal of Neurotoxicology and Teratology*, 61, 104-114.

Flores-Montoya, M. G., Alvarez, J., & Sobin C. (2015). Olfactory recognition memory is disrupted in young mice with chronic low-level lead exposure. *Toxicology Letters*, 236(1), 69–74.

Sobin, C., **Flores-Montoya M. G.,** Gutierrez, M., Parisi N., & Schaub T. (2014). δ -aminolevulinic acid dehydratase single nucleotide polymorphism 2 (ALAD2) and peptide transporter 2*2 haplotype (hPEPT2*2) differently influence neurobehavior in low-level lead exposed children. *Journal of Neurotoxicology and Teratology*, 47, 137-145.

Flores-Montoya, M. G., & Sobin C. (2014). Early chronic lead exposure reduces exploratory activity in young C57BL/6J mice. *Journal of Applied Toxicology*, 35(7), 759–765.

Sobin C., **Flores, M. G.,** Parisi N., Schaub T., Cervantes M., & Armijos, R.X.M. (2013). Microglial disruption in young mice with early chronic exposure to lead. *Toxicology Letters*, 220(1), 44-52.

PROFESSIONAL TALKS

Flores-Montoya, M.G. & Sobin. An integration of health psychology, neurocognition, and brain science: From early chronic lead exposure to cognitive disruption through neuroimmune mechanisms. *Carleton College, April, 2017.*

Flores-Montoya, M. G., Alvarez J., & Sobin C. A study of the object in place visual recognition paradigm for measuring memory impairment in young mice with chronic low-level lead exposure. Interdisciplinary Health Forum. *The University of Texas at El Paso, October 29, 2015.*

Flores-Montoya, M.G., & Sobin C. Behavioral markers of chronic low-level lead exposure in young mice. Summer Program in Neuroscience Research and Survival (SPINES). *Marine Biological Laboratory, June, 2015.*

CONFERENCE PRESENTATIONS

Flores-Montoya, M.G., Vines, C., Bill, C., & Sobin C. (June 2018). Early chronic lead exposure reduced C-C chemokine receptor 7 in hippocampal microglia. Poster to be presented at the Forty-Second Annual Meeting of the Developmental Neurotoxicology Society conference, Clearwater FL.

Flores-Montoya M. G., Alvarez J., & Sobin C. (Nov 2015). A study of the object-in-place visual recognition paradigm for measuring memory impairment in young mice with early chronic low-level lead exposure. Poster presented at Society for Neuroscience, Chicago, IL.

Flores-Montoya M. G., Alvarez J., & Sobin C. (Nov 2014). A shortened version of the object-in-place visual recognition paradigm detects hyperactivity in chronic low-level lead exposed juvenile mice. Poster presented at Society for Neuroscience, Washington, DC.

Flores-Montoya M.G., & Sobin, C. (Nov 2013). Comparison of a novel object vs. novel odor recognition task for measuring short-term recognition memory in C57BL/6J mice. Poster presented at Society for Neuroscience, San Diego, California.

Flores-Montoya, M.G., Valencia, Benjamin., & Sobin, C. (May 2013). Behavioral markers of chronic low-level lead exposure in young mice. Poster presented at the Annual Convention of the Association for Psychological Science, Washington, DC.

Flores-Montoya, M. G., Solis O., Barbosa M., & Sobin C. (May 2012). The effects of chronic low-level lead exposure on the behavior of C57BL/6 mice. Poster presented at the Annual Convention of the Association for Psychological Science, Chicago, IL.

Valencia B., **Flores M.G.**, & Sobin C (May 2012). Chronic low-level lead exposure and nose poke behavior in young mice. Poster presented at the COURI symposium at the University of Texas at El Paso, El Paso, TX.

STUDENT PRESENTATIONS SUPERVISED

Sandy L., **Flores-Montoya M.G.**, & Wichlinski L. Parental traumatic experiences might predispose children to develop post-traumatic stress disorder: An epigenetic perspective. Poster presented at Minnesota Undergraduate Psychology Conference (MUPC) on April 28th, 2018, Carleton College, Northfield, MN.

Dorry J. & **Flores-Montoya, M.G.**. The effects of irregular ghrelin, leptin, and dopamine levels on the development of anorexia nervosa. Talk given at Minnesota Undergraduate Psychology Conference (MUPC) on April 28th, 2018, Carleton College, Northfield, MN.

Martinez, M., Martinez, V., **Flores-Montoya M. G.**, Parada, Z., Cervantes, J., Bill, C., & Vines C. The effect of C-C chemokine receptor 7 on mating behavior in mice. Poster presented at COURI symposium on April 29, 2017, UTEP, El Paso, TX.

Beltran, J., **Flores-Montoya M.G.**, Parada, Z., Ramirez, V., & Vines, C. (2016 June 18). Examining the Impact of Glucose on Protein Expression of Unstable, “Leaky “ Plasmids in E. Coli. Poster Presented at Work With a Scientist Program Proposal Presentation, UTEP, El Paso, TX.

Medina, S., **Flores-Montoya, M.G.**, Najera, J., Parada, Z., & Vines, C. (2016 June 18). Use of Pichia Pastoris to Analyze Protein Growth and Expression in Comparison to Standard BI21 (DE3) E. Coli. Poster Presented at Work With a Scientist Program Proposal Presentation, UTEP, El Paso, TX.

Licon, D., **Flores-Montoya, M.G.**, Parada, Z., Torres, L., & Vines, C. (2016 June 18). Impact of E. Coli Strain Variation and Comparison in Protein Expression and Purification of the CCL19 Antagonist 8-83. Poster Presented at Work With a Scientist Program Proposal Presentation, UTEP, El Paso, TX.

Brambila, G., Broussard, A., **Flores-Montoya, M.G.** & Vines, C. (2016 June 18). Comparison of Protein Expression in the Cytoplasm Vs Periplasm in E. Coli. Poster Presented at Work With a Scientist Program Proposal Presentation, UTEP, El Paso, TX.

MENTORSHIP ACTIVITIES

Mellon Mays Research Mentor <i>Spring 2018 – Summer 2019</i>	Carleton College Department of Psychology Student's name: Grisel Vidal-Munoz Project: <i>"Effects of bilingualism and cognitive academic language proficiency on standardized test scores of english-spanish speakers"</i>
Comps Mentor <i>Fall 2017-Spring 2018</i>	Carleton College Department of Psychology Student's name: Dorry Jaffe Comps project: <i>"The effects of irregular ghrelin, leptin, and dopamine levels on the development of anorexia nervosa"</i>
Comps Co-Mentor <i>Fall 2017-Spring 2018</i>	Carleton College Department of Psychology Student's name: Sandy Lor Comps project: <i>"Parental traumatic experiences might predispose children to develop post-traumatic stress disorder: An epigenetic perspective"</i>
Honors Thesis Methods Supervisor <i>Spring 2016-Spring 2017</i>	The University of Texas at El Paso Department of Biology Students' name: Velia Martinez. Thesis Chair: Dr. Charlotte Vines. Thesis: <i>"Examination of the influence of the C-C chemokine receptor 7 on mouse behavior"</i>

FELLOWSHIPS

Marine Biological Laboratory (MBL), Woods Hole, MA.
Summer Program in Neuroscience, Ethics, and Survival (SPINES) Fellowship.
June 21 – July 19, 2014.
Amount: \$ 2,683.75

Marine Biological Laboratory, Woods Hole, MA.
Post-course research
July 20 – August 20, 2014.
Amount: \$ 2,020.31
Techniques used: *in vitro* electrophysiology and confocal microscopy.

SCHOLARSHIPS

Scholarship-GIA.
Purpose: Graduate tuition
2011-2013
Amount: \$8, 859.31

Scholarship-GIA.
Purpose: Undergraduate tuition
2009-2011
Amount: \$ 12, 273.66

LANGUAGES

Fluent in written and oral Spanish.
Understanding of written and oral French.

PROFESSIONAL AFFILIATIONS

Society for Neuroscience
American Psychological Society
Developmental Neurotoxicology Society
Psi Chi

SOFTWARE SKILLS

Flow Jo
SAS
SPSS
Stat View
SMART software system, Harvard PanLab (automated examination of mouse behavior)

MOUSE COLONY MANAGEMENT

Breeding of C57BL/6J mice.
Animal management via animal management system (AMS).
Intraperitoneal injections.
Animal euthanasia and tissue collection.

BEHAVIORAL TESTING SKILLS

Human behavioral testing: Memory, fine-motor dexterity, cognitive flexibility, theory of mind, and child suggestibility.

Mouse behavioral testing: Memory, exploratory ambulation, exploratory activity, gross motor dexterity, muscular strength, anxiety, sexual behavior, and developmental milestones.

BRAIN AND MOLECULAR TESTING SKILLS

Mouse brain: Transcardial perfusions, dissections of brain and hippocampus, dissociation of neuroimmune cells, and labeling of primary cells directly conjugated antibodies for multicolor flow cytometry.

Mammalian cells: Sterile technique, cell culture, and labeling of cells with antibodies.

Bacterial cells: Sterile technique, cell culture, cloning and sub-cloning of DNA, generation of calcium competent *E. Coli*, bacterial transformations, and controlled expression of mammalian proteins in *E. Coli*

Molecular techniques: DNA and protein analyses via agarose gel electrophoresis and SDS-PAGE.

Apparatus: Flow cytometer.

PROFESSIONAL REFERENCES

Dr. Julie Neiworth

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Dr. Christina Sobin

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Dr. Charlotte Vines

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Dr. Edward Castaneda

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