

# Veronica Lee Flores, PhD

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## PROFESSIONAL EXPERIENCE

**Assistant Professor of Psychology, 2019 - Present**  
Department of Psychology, Program in Neuroscience  
Furman University  
Greenville, SC

## EDUCATION

**Ph.D., Brandeis University – 2019**  
Program in Cognitive Neuroscience & Brain, Body and Behavior | Psychology  
Laboratory of Dr. Donald B. Katz

**Dissertation:** *An experienced palate is a smart one: Investigating the behavioral and neural impact of incidental taste experience on future taste learning in female Long Evans rats.*

**M.S., Brandeis University – 2013**  
Program in Neuroscience

**B.S., UC San Diego – 2009**  
Program in Psychology with concentration in Neuroscience & Behavior

## CURRENT RESEARCH INTERESTS

The investigation of how experience dependent networks in the brain process sensory information using rodent models of taste learning. Specifically, I am interested in how incidental taste experience fosters efficient sensory learning.

## PREVIOUS AREAS OF RESEARCH

**Graduate Researcher,** Brandeis University, Graduate Program in Psychology, Waltham MA 2012-18

**Advisor: Donald B. Katz, Ph.D.**

- Using a rodent model, this research provides behavioral evidence that incidental experience with salty and sour tastes enhances learning to a future learned aversion to novel sucrose which scales with the amount of experience.
- Investigation of the neural processing of this phenomenon using optogenetics and immediate early genes showed that primary taste cortex is both impacted by taste processing and is directly involved in integrating experience into future learning while leaving taste processing itself intact.
- *In vivo* single neuron electrophysiological exploration in primary taste cortex showed a progressive tuning to taste palatability with exposure to incidental tastes.

**Research Assistant**, Joslin Diabetes Center, Boston MA 2009-12

**Principal Investigator:** Gail Musen, Ph.D.

**Projects:** Investigated how type I and type II diabetes alters brain structure and activity leading to eventual cognitive decline.

- Received training at Harvard Medical School to analyze cerebral white matter integrity and its correlation with functional connectivity deficits in diabetic patients.
- Patients with type II diabetes showed neural biomarkers of cognitive decline within the default mode network which resembled patterns evident in patients at high risk for Alzheimer's disease even before cognitive impairment is apparent.
- Additional projects included Structural MRI analyses of diabetic Rhesus Macaque monkeys and investigating the effects of high blood glucose levels on neural glutamate levels and depression.

**Research Assistant**, UC San Diego, Department of Psychology, La Jolla CA 2008-09

## TEACHING & MENTORING EXPERIENCE

**Teaching and Online-Curriculum Assistant**, Introduction to Human Neuropsychology, Brandeis University 2018

**Adjunct Instructor**, Experimental Design in Psychology, Lasell College 2018

**Instructor**, Introduction to Learning & Behavior, Brandeis University 2016

**Head Teaching Fellow**, Intro to Behavioral Neuroscience, Brandeis University 2014-18 (5 Semesters)

**Teaching Fellow**, Psychology Department, Brandeis University 2014-15, 18

**STEM Mentor**, Brandeis University, Brandeis STEM POSSE 7 2014-18

**Undergraduate Research Mentor**, Brandeis University & Lasell College 2013-18

## AWARDS, GRANTS & FELLOWSHIPS

- Pre-doctoral Ruth L. Kirschstein National Research Service Award, (NRSA- F31).
- Verna Regan Teaching Award in Psychology for undergraduate teaching
- Brandeis University Prize Instructorship Award
- Neuroscience Scholars Program, Associate Fellow, Society for Neuroscience
- Society for Advancement of Hispanic/Chicanos and Native Americans in Science Travel Award
- Association for Chemoreception Sciences Diversity Fellowship Travel Award
- T32- Brain, Body and Behavior Training Brandeis Psychology Dept. Training Grant Fellow (NIH)

## PUBLICATIONS

Flores VL, Parmet T<sup>†</sup>, Mukherjee N, Nelson S, Katz DB & Levitan D. (2018). The role of the gustatory cortex in incidental experience-evoked enhancement of later taste learning. *Learning & Memory*. 25(11):587-600 PMID: 30322892. (<sup>†</sup> Undergraduate)

Flores VL, Moran A, Bernstein M<sup>+</sup>, Katz DB (2016). Preexposure to salty and sour taste enhances conditioned taste aversion to novel sucrose. *Learning & Memory*. 23(5):221-8 PMID: 27084929. (\* *Undergraduate*)

Bolo NR, Musen G, Simonson DC, Nickerson LD, Flores VL, Siracusa T, Hager B, Lyoo IK, Renshaw PF, Jacobson AM. (2015). Functional Connectivity of Insula, Basal Ganglia, and Prefrontal Executive Control Networks during Hypoglycemia Type 1 Diabetes. *Journal of Neuroscience*. 35, 11012-110123. PMCID: PMC4524972.

Marder TJ\* & Flores VL\*, Bolo NR, Hoogenboom WS, Simonson DC, Jacobson AM, Foote SE, Shenton ME, Sperling RA, Musen G. (2014). Task-induced brain activity patterns in type 2 diabetes: a potential biomarker for cognitive decline. *Diabetes*. 63, 3112-3119. PMCID: 4141362. (\* *Equal Contribution*).

Hoogenboom WS, Marder TJ, Flores VL, Huisman S, Eaton HP, Schneiderman JS, Bolo NR, Simonson DC, Jacobson AM, Kubicki M, Shenton ME, Musen G (2014). Cerebral white matter integrity and resting-state functional connectivity in middle-aged patients with type 2 diabetes. *Diabetes*. 63, 728-738. PMCID: 3900542.

Musen G, Jacobson AM, Bolo NR, Simonson DC, Shenton ME, McCartney RL, Flores VL, Hoogenboom WS. (2012). Resting-state brain functional connectivity is altered in type 2 diabetes. *Diabetes*. 61, 2375-2379. PMCID: 3425418

## ABSTRACTS & PRESENTATIONS

Flores VL & Katz DB. Incidental taste experience enhances learning and changes firing rate dynamics in gustatory cortex. Poster Presentation, Society for Neuroscience annual meeting, San Diego, CA, November 2018.

Flores VL & Katz DB. Innocuous Taste Experience Enhances Aversion Learning and Alters Neural Activation in the Gustatory Cortex. Oral Presentation, SACNAS annual meeting, Salt Lake City, UT, October 2017.

Flores VL, Levitan D, Parmet T<sup>+</sup>, Leftkowitz M\* Katz DB. Innocuous Taste Experience Enhances Aversion Learning and Alters Neural Activation in the Gustatory Cortex. Poster Presentation, Association for Chemosensation Sciences Meeting, Bonita Springs, FL, April 2016. (\* *Undergraduate*)

Flores VL, Levitan D, Parmet T<sup>+</sup>, Katz DB. Innocuous Taste Experience Enhances Aversion Learning and Alters Neural Activation in the Gustatory Cortex. Poster Presentation, Association for Chemosensation Sciences Meeting, Bonita Springs, FL, April 2016. (\* *Undergraduate*)

Flores VL, Levitan D, Parmet T<sup>+</sup>, Nicks R, Katz DB. The Experienced Palette is a Smart One: An investigation of the role of the Gustatory Cortex in the impact of experience on taste learning. Poster Presentation, Association for Chemosensation Sciences Meeting, Bonita Springs, FL, April 2014. (\* *Undergraduate*)

Flores VL, Moran A, Bernstein M<sup>+</sup>, Katz DB. Experience with Salty and Sour Tastes Strengthens a later Conditioned Taste Aversion to Novel Sucrose. Poster Presentation, Volen Retreat-Complex behavioral models and systems, Boston, MA, October 2015. (\* *Undergraduate*)

Flores VL, Moran A, Katz DB. Experience with Tastes Strengthen Conditioned Taste Aversion to Novel Sucrose. Poster Presentation, 44<sup>th</sup> Annual Society for Neuroscience Meeting, Washington DC, DC, November 2014.

Flores VL, Moran A, Katz DB. Experience with Diverse Taste Arrays Strengthen Conditioned Taste Aversion. Poster Presentation, Association for Chemosensation Sciences Meeting, Bonita Springs, FL, April 2014.

Flores VL, Moran A, Katz DB. The Effects of Taste Experiences on Conditioned Taste Aversion. Poster Presentation, Volen Retreat-Complex behavioral models and systems, Boston, MA, October 2013.

Flores VL, McCartney RL, Hoogenboom W, Jacobson AM, Simonson DC, Bolo NR, Musen GF. Early Biomarkers for Alzheimer's Disease in Type 2 Diabetic Patients using fMRI. Poster presentation, Harvard Medical School Psychiatry Research Day and Mysell Lecture, Boston, MA, March 2011.

## OUTREACH EXPERIENCE

- **Invited Speaker**, Stonehill College, Neuroscience Society 2017
- **Invited Speaker**, AAAS Science Talks, Arlington High School 2017

- **Invited Speaker**, Brandeis MRSEC Science Talks, Waltham High School 2016
- **Poster Judge & Mentor**, SACNAS Undergraduate Poster Session in Neuroscience 2015
- **Science Mentor**, Kehillah Schechter Middle School Academy 2014

## **PROFESSIONAL DEVELOPMENT & LEADERSHIP**

- Maria Mitchell Women in Science Symposium, Babson College
- Future Faculty Workshop for Women in STEM Fields, Northeastern University
- Teaching at Teaching intensive institutions workshop, UMASS Amherst
- Catalyzing Advocacy in Sciences and Engineering Workshop, AAAS
- Brandeis Center for Teaching and Learning semester workshop - An Introduction to Evidence-Based Undergraduate STEM Teaching

## **SOCIETY MEMBERSHIPS**

Society for Neuroscience | Society for the Advancement of Chicanos and Native Americans in Science  
Society for Chemosensation Sciences | American Psychological Association