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# Katiria Soto Diaz

GRADUATE RESEARCH ASSISTANT

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## Education

### UNIVERSITY OF ILLINOIS AT URBANA- CHAMPAIGN

Graduate Student | **June 2018- December 2022**

- Ph. D. Student in the Neuroscience Program
- Major: Neuroimmunology
- Minors: Neurological Disorders, Aging and Brain Imaging

### UNIVERSITY OF PUERTO RICO-MAYAGUEZ

Undergraduate Student | **August 2012 - June 2018**

- Dual Major in Industrial Microbiology and Biology
- Conferred

### UNIVERSIDAD COMPLUTENSE, MADRID, SPAIN

Abroad Student | **February 2016 - June 2016**

## Professional Experiences

### RED ABBEY LAB

Neuroimmunology Analyst Intern | **December 2021-  
Present**

- Hypothesis identification, drug pipeline involvement, understanding cell mechanisms
- Projects focused on mitochondria dysfunction, cytoskeleton dynamics and cell death mechanisms in neurological disorders

### WESTERN MICHIGAN UNIVERSITY, KALAMAZOO, MI

Researcher Intern | **Summer 2015**

- Worked under Dr. Charles Ide supervision
- Detected *Bmp4* in *Albino Xenopus laevis* eye dorsal expression at early stages, Stages 20's and 30's.
- Determined the relation between *Bmp4* and retina ventral development and its relationship with *Shh*.

### SANFORD HEALTH RESEARCH, SIOUX FALLS, SD

Research Intern | **Summer 2014**

- Focused on the requirement of retinoic acid for *Wnt1* expression during hindbrain patterning in zebrafish.
- Did tissues preparation, PCR, qPCR, cell transformation, electrophoresis, in situ hybridization, worked with *Hf1ba*, *Mafba*, *Cyp26a1* and *Wnt1* probes, and worked with different microscopes.

## Skills & Abilities

### Technical Skills

- Eukaryotic cell, Neuron, Glia Bacteria and Fungi cultures.
- PCR, RT-PCR, q-PCR, DGGE and TRFLP.
- Immunohistochemistry, Cryosectioning, Hemagglutination and In Situ Hybridization.
- DNA and RNA Extraction, Purification, and Analysis. scRNA sequencing
- SDS-PAGE, Electrophoresis, Western Blot, Southern Blot, and ELISA.
- Fluorescence and Confocal Microscopy.

### Soft Skills

- Basic knowledge with Image J and R Stats Program.
- Fluent in Spanish and English and basic knowledge in Italian and French.
- Experience working with Canvas, Excel, Word, Publisher, and PowerPoint Presentations.
- Effective work both in group and independently.

## Research Experiences

### NEUROIMMUNOLOGY LAB

Graduate Research Assistant | **June 2018- Present**

- Project focused in molecular mechanisms of neuroinflammation in mice models of multiple sclerosis.
- Role of upper respiratory viral infections in exacerbating disease on multiple sclerosis.

### MOLECULAR VIROLOGY AND TISSUE ENGINEERING LAB

Research Assistant | **August 2015- June 2018**

- Project focused in detection of the protein Egr-4 in human brain tissue and in Alzheimer Patients.
- Awarded project by PR-INBRE (NIH) and PR-Science

### NEUROPSYCHOLOGY LAB

Undergraduate Researcher | **March- June 2016**

- Project performed as an abroad international student in the Universidad Complutense, Madrid, Spain.
- NEUROPRE development, a test model which can help to understand neuropsychology on children.
- Worked on data tabulation and biological analysis.

### BIOCONVERSION LAB

Undergraduate Researcher | **August- December 2015**

- Glycerol bioconversion using anaerobic bacterias isolated from coolant and glycerol samples.

## ANAEROBIC SOLUTION LAB

Undergraduate Researcher | **January- May 2015**

- Studied Enterococcus' abundance in samples of various water bodies and water plant treatment.
- Used biochemical techniques for identifying these, isolate pure colonies of different organisms and do genetic analysis of these.

## MICROCRUSTACEANS IN PUERTO RICO'S MESOPHOTIC CORAL REEF LAB

Undergraduate Researcher | **January- December 2015**

- Identified taxonomically copepods, amphipods, isopods and other zooplanktons.

## Extracurricular Experiences

**LEADERSHIP:** President at Alpha Helix Biomedical Society, President at Be the Match On Campus . Vice-president of External Relationships in the Industrial Biotechnology Association (AEBI).and Chapter Development AEBI

**COMMUNITY SERVICE:** STEM for Teens, Wow! That's Engineering, Scuba Dogs Society, American Cancer Society. Soles 4 Souls, Tutor for Primary and Secondary Student and Be the Match

## Scientific Presentations

- PNIRS 2021, Online| **June 2021**
- Brazos Valley MS 25th Annual English Tea |**August 2020**
- Pannelist for Aspire| **October 2019**
- Society of Neuroscience Night at UIUC| **October 2019**
- Panelist for the St. Louis University McNair Visit at UIUC| **July 2019**
- Neuroplasticity in Alzheimer's, UPRM| **September 2018**
- PNIRS 2019, Berlin, Germany| **June 2019**
- Illinois MS Research Collaborative Day| **March 2019**
- Neuroplasticity in Alzheimer's, UPRM| **September 2018**
- NIH, NIGMS Seventh Biennial National IDEa Symposium of Biomedical Research Excellence (NISBRE) at Washington, D.C.| **June 2018**
- Undergraduate Research Symposium in Biology at UPRM| **May 2018**
- Neurobiology Presentation, Universidad Complutense at Madrid, Spain| **April 2016**
- Beta-Ships Presentation at UPRM| **October 2015**
- August 2015| Western Michigan University Research Symposium, Kalamazoo, Michigan| **August 2015**
- EPSCoR REU R| esearch Symposium at Pierre, South Dakota| **July 2014**

## Publications

### **Role of Omega-3 Endocannabinoids in Modulation of T-cell Activity in a Multiple Sclerosis Model**

J.S. Kim, K.Soto-Diaz, T.W. Binghamd, A.J. Steelman, Aditi Das  
Date Expected: April 2022

### **Influenza infection exacerbates disease symptoms in relapsing models of multiple sclerosis.**

K. Soto Diaz, J. Kim, L. Wetzel, M.L. Oelze, A.J. Steelman  
Journal of Clinical Investigation, Insights: estimated March 2022

### **Dietary fiber as a counterbalance to age-related microglial cell dysfunction**

M. Vailati-Riboni, L. Rund, M.E. Caetano-Silva, N.T. Hutchinson, S.S. Wang, K. Soto Diaz, J. Woods, A.J. Steelman and R. Johnson  
Frontiers in Nutrition; Nutrigenomics (February 2022)

### **Influenza causes global alterations to oligodendrocyte-specific transcripts and the myelin lipidome in the adult mouse central nervous system.**

A.Y. Louie, J. Kim, K. Soto-Diaz, P. Dibaeinia, H. Koito, S.Sinha, R.A. Nowak, A. Das, A.J. Steelman  
Nature Communications, 2022 (re-submitted)

### **Treatment with the CSF1R antagonist GW2580, sensitizes microglia to reactive oxygen species**

Katiria Soto-Diaz, Mario Vailati-Riboni, Allison Louie, Daniel McKim, H. Rex Gaskins, Rodney J. Johnson, Andrew J. Steelman  
Frontiers in Immunology, November 2021

### **Astrocytes lure CXCR2-expressing CD4+T cells to grey matter via TAK1-mediated chemokine production in mouse of multiple sclerosis**

R. Khan, A. Tierney, C.Cunningham, K. Soto-Diaz, E. Kang, A.J. Steelman, M. Inoue  
PNAS, January 2021

### **SARS-CoV-2:Epidemiology and Spike Protein Mutations Correlate with Temperature Worldwide**

P. Burra, K. Soto-Diaz, I. Chalen, R. Gonzalez, D. Instanto, G. Caetano-Anolles  
Evolutionary Bioinformatics, January 2021

### **Influenza infection exacerbates disease symptoms in relapsing models of multiple sclerosis.**

Katiria Soto Diaz, Justin Kim, Lisa Wetzel, Daniel B. McKim, Michael L. Oelze, Andrew J. Steelman  
Abstract, AAI 2020

### **TAK1 inhibition in mouse astrocyte cultures ameliorates cytokine-induced chemokine production and neutrophil migration.**

Soto-Díaz K, Juda MB, Blackmore S, Walsh C, Steelman AJ.  
J Neurochem. 2019