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Katiria Soto Diaz

POSTDOCTORAL FELLOW

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Education

GENENTECH, SOUTH SAN FRANCISCO

Postdoctoral Fellow | **December 2022- Present**

- Research Biology Department

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

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

- Ph. D. Candidate 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-January 2023**

- Hypothesis identification, drug pipeline research, market analysis and 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**

- Detected Bmp4 in *Albino Xenopus laevis* eye dorsal expression at early stages, To determine 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, focussing on *Hf1ba*, *Mafba*, *Cyp26a1* and *Wnt1* signals

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.
- Flourescence and Confocal Microscopy.

Soft Skills

- Basic knowledge with Image J, R Studio, GraphPad PRIMS Program, FCS 5/6 and FlowJo.
- Fluent in Spanish and English and basic knowledge in Italian and French.
- Experience working with Photoshop, Canvas, Excel, Word, Publisher, and PowerPoint Presentations.
- Effective work both in group and independently.

Research Experiences

ANDREW (ANDY) C. CHAN'S AND DOMAGOJ VUCIC LABS

Postdoctoral Fellow| **December 2022- Present**

- Human genetics of the Major Histocompatibility Complex, Class II on B cell-mediated progression in multiple sclerosis
- TNF Superfamily in inflammatory bowel disease and NF-kB mediated cytokine production, cell death and survival
- Human genetic variants and changes in immune cells effector function.

ANDREW J. STEELMAN-NEUROIMMUNOLOGY LAB

Graduate Research Assistant | **June 2018- December 2022**

- Project focused on how upper respiratory infections lead to exacerbation of symptoms in mouse models of relapsing-remitting multiple sclerosis (RRMS).
- Generation of mouse conditional knockouts
- Murine primary culture: all the glia cells, T cells, macrophages, and dendritic cells
- Flow cytometry to identify immune cell population and their effector function, proliferation, cell toxicity, and cell activation assays.
- Cytokine and chemokine profiler assays as well as drug testing and administration
- Consultant on projects related to nutritional factors that alter cell physiology during mouse aging, and how immune cell profiles are changing in dogs and cows.
- Consultant on a project to study the effects of cytokines in sickness behavior and also in a project studying the effects of endocannabinoids in mouse models of RRMS

MOLECULAR VIROLOGY AND TISSUE ENGINEERING LAB

Research Assistant | August 2015- June 2018

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

ANAEROBIC SOLUTION LAB

Undergradute 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.

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

- Society of Neuroscience | San Diego, California| November 2022
- Society of Neuroscience Night |UIUC| October 2022
- International School of Neuroimmunology| Giessen, Germany| September 2022
- Pfizer Talk on T cell immunology |Online| August 2022
- Genentech Talk on MS |San Francisco, CA| August 2022
- PNIRS 2022| Zurich, Switzerland| June 2022
- Puerto Rico-Talk on Hispanic in STEM for High School Students |Online| April 2022
- PNIRS 2021| Online| June 2021
- Brazos Valley MS 25th Annual English Tea| August 2020
- Panelist for Aspire |UIUC| October 2019
- Society of Neuroscience Night |UIUC| October 2019
- Panelist for the St. Louis University McNair Visit| UIUC| July 2019
- 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) | Washington, D.C.| June 2018
- Undergraduate Research Symposium |UPRM| May 2018
- Neurobiology Presentation, Universidad Complutense |Madrid, Spain| April 2016
- August 2015| Western Michigan University Research Symposium |Kalamazoo, Michigan| August 2015

Publications

Influenza infection exacerbates disease symptoms in relapsing models of multiple sclerosis.
K. Soto Diaz, J. Kim, A. Das, A.J. Steelman
Brain, Behavior and Immunity, estimated March 2024

The emergence of inflammatory microglia during gut inflammation is not affected by FFAR2 expression in intestinal epithelial cells or peripheral leukocytes
M.E. Caetano-Silva, L. Rund, M. Vailati-Riboni, S. Matt, K. Soto-Diaz, J. Beever, J.M. Allen, J.A. Woods, A.J. Steelman, R. Johnson
Brain, Behavior and Immunity, submitted November 2023

Effects of a Lactobacillus fermentation product on the fecal characteristics, fecal microbial populations, immune function, and stress markers of adult dogs
S.A. Koziol, P.M. Oba, ***K. Soto-Diaz***, A.J. Steelman, J.S. Suchodolski, E.R.M. Eckhardt, and K.S. Swanson
J. of Animal Science, May 2023

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, A. Das
J. of Biological Chemistry, January 2023

Effects of a *Saccharomyces cerevisiae* fermentation product-supplemented diet on circulating immune cells and oxidative stress markers of dog
S.M. Yotis, P.M. Oba, S.A. Koziol, C.C. Applegate, ***K. Soto-Diaz***, A.J. Steelman, M.R. Panasevic, S.A. Norton, and K.S. Swanson.
J. of Animal Science, July 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

Treatment with the CSF1R antagonist GW2580, sensitizes microglia to reactive oxygen species
K. Soto-Diaz, M. Vailati-Riboni, A. Louie, D. McKim, H. R. Gaskins, R.J. Johnson, A.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

TAK1 inhibition in mouse astrocyte cultures ameliorates cytokine-induced chemokine production and neutrophil migration.
K. Soto-Díaz, M.B. Juda, S. Blackmore, C. Walsh, A.J. Steelman
J Neurochem., 2019