

Fernando Gutierrez-Garcia, BS

*Brown University - Graduate Pathobiology Program
Pre-doctoral Student*

Division of Surgical Research/Dept. Surgery
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Primary Research Field

Patho-mechanisms of shock/sepsis induced organ dysfunction and the innate immune response.

Education

2022-present Ph.D. Graduate Student Pathobiology Program, Brown University, Providence, RI
2021-2022 NIH Post Baccalaureate Research Education Program (PREP) Virginia Tech., Blacksburg, VA
2017-2021 B.S. Biotechnology, James Madison University, Harrisonburg, VA

Research/Professional Experience

Undergraduate Research Assistant – Dr. Chris Lantz, Biology Department, James Madison University. 01/19 – 05/20

- Responsible for the breeding and genotyping of interferon gamma reporter mice.
- Examine the role of Interleukin-3 in mast cell expansion and immunity during *H. polygyrus* infection using IL-3 deficient mice.
- Use flow cytometry to identify producing cells in *P. berghei* NK65 infected IFN γ reporter mice.
- Perform general cleaning and maintenance of laboratory and maintain detailed laboratory notebook.

Summer Undergraduate Research Assistant – Dr. Chris Lantz, Biology Department, James Madison University. 05/19 – 08/19

- Isolated *H. diminuta* cysticercoid larvae from an intermediate host to use for further infection in interleukin-3 deficient mice.
- Obtained tissue samples from *N. brasiliensis* infected mice to quantify for mast cells and basophils in interleukin-3 deficient mice.
- Maintained culture of *N. brasiliensis* third-stage larvae to use for further experiment using interleukin-3 reporter and deficient mice.

Microbiology Preparatory Staff – Robert Walters, Biology Department, James Madison University. 08/19 – 5/21

- Instruct and manage new members in media preparation, autoclave use, and classroom preparation.
- Assist with classroom organization for microbiology laboratories.
- Prepare different types of bacterial growth media.

NIH Post-baccalaureate Research and Education Program Scholar – Dr. Ed Smith, Virginia Tech. 07/21 – 6/22

Main Advisor – Dr. Xin Luo, Department of Biomedical Sciences and Pathobiology VA-MD College of Veterinary Medicine, Virginia Tech. 09/21 – 6/22

- **Project Title:** Examine the effects of the Aryl hydrocarbon receptor (AhR) pathway stimulation by TCDD on systemic lupus erythematosus in adult MRL/lpr mice.
- **Project Summary:** Treat adult MRL/lpr mice with ligand 2,3,7,8-tetrachlordibenzo-p- dioxin (TCDD) and AhR antagonist CH223191 to characterize how TCDD stimulation affects follicular T cells population.

Rotation #1 Advisor – Dr. Raj Gaji, Department of Biomedical Sciences and Pathobiology VA-MD College of Veterinary Medicine, Virginia Tech. 07/21 – 08/21

- **Project title:** Understanding the EDR1, NLS, and RNI domains to the function of Tyrosine Kinase-Like 1 in *Toxoplasma gondii*.
- **Project Summary:** Create CRISPR sgRNAs and generate repair templates for deletion of target domains in Tyrosine Kinase-Like 1 to examine their effect on the virulence of *T. gondii*.

Rotation #2 Advisor – Dr. Coy Allen, Department of Biomedical Sciences and Pathobiology VA-MD College of Veterinary Medicine, Virginia Tech. 08/21 – 09/21

- **Project title:** Identify PD1 expression from human pancreatic cancer cells after exposure to interferon gamma.
- **Project summary:** Pinpoint the time of programmed cell death protein 1 (PD1) expression in human pancreatic cancer cells (PANC-1) using western blot after exposure to human interferon gamma.

Lab Skills

- Flow cytometry
- DNA isolation
- Cell Culture
- RT-qPCR
- Gel Electrophoresis
- Mouse handling
- ELISA
- Cell culture media

Publications

1. Deem, T. L., Collins, J. B., DeVost, M. H., Parker, C. O., Saroka, S. C., Zoldork, R.J., Gutierrez, F., Russell, J. M., & Lantz, C. S. (2020). Assessment of faithful interleukin-3 production by novel bicistronic interleukin-3 reporter mice. *Immunology Letters*, 221, 18–26.

Teaching and Professional Development

1. Teaching Assistant for **Course:** Biotechnology in Medicine - BIOL 0170, **Professor:** Dr. Toni-Marie Achilli, Brown University, Div. of Biology, Fall Semester, 2023
2. Attended the Amer. Assoc. Immunologist's (AAI) "Introductory to Immunology" Course at the UCLA Luskin Conference Center, Los Angeles, CA, July 11-16, 2023 (Prof. Development).
3. Attended the AAI "Advanced Course in Immunology" at the Westin Copley Place, Boston, MA, July 23-28, 2023 (Prof. Development).

Abstracts

1. –

Presentations (Oral & Poster)

1. –

Awards and Honors

- –

Funding Source

- –

Community Outreach and Mentoring

- Brown University-Graduate Pathobiology Program, Social Committee, member

Last updated: 8/10/23