




# Hunter Joseph Ries

✉ RiesHunter@outlook.com  
🌐 RiesHunter.github.io  
☎ 920-204-2442

	English	Native
	Spanish	CEFR A2
	French	CEFR A1

## Professional Summary

Highly skilled molecular genomics and bioinformatics professional with robust experience in next-generation sequencing platforms. Possesses the knowledge and skills necessary to design, execute, and summarize complex biological projects. Skilled in effectively communicating scientific concepts to technical and non-technical audiences. Adept at crafting clear and concise reports and scientific documentation.

## Education

2017 – 2021	<b>University of Wisconsin–Madison</b> B.S., Microbiology	Madison, WI, USA
2021 – Present	<b>University of Wisconsin–Madison</b> Ph.D., Cellular and Molecular Pathology	Madison, WI, USA

## Work Experience

2021 – Present	<b>University of Wisconsin–Madison</b> <b>Graduate Research Assistant</b> Department of Pathobiological Sciences, Thomas Friedrich Laboratory <ul style="list-style-type: none"><li>– Defining the impact of prior flavivirus (e.g., dengue virus, Zika virus) exposure on subsequent disease in humans and non-human primates</li><li>– Assessing the potential for Zika virus and related viruses to cause disease and fetal harm in non-human primates</li><li>– Quantifying the directionality and magnitude of evolutionary selective pressures in Influenza virus and Zika virus</li><li>– Determining the point at which antigenic variants are most strongly selected for during Influenza virus transmission in human cohorts</li></ul>	Madison, WI, USA
2018 – 2021	<b>University of Wisconsin–Madison</b> <b>Undergraduate Research Assistant</b> Department of Medicine, Robert Striker Laboratory Department of Pathobiological Sciences, Thomas Friedrich Laboratory <ul style="list-style-type: none"><li>– Investigated the molecular mechanisms of Mycobacterium tuberculosis drug resistance</li><li>– Utilized deep sequencing technologies to assess the impact of host species on Zika virus evolution</li></ul>	Madison, WI, USA
2018 – 2018	<b>Fond du Lac County Health Department</b> <b>Health Intern</b> Communicable Diseases <ul style="list-style-type: none"><li>– Developed a tick-borne disease community outreach program to educate residents on tick-borne disease prevention and treatment</li></ul>	Fond du Lac, WI, USA

## Skills

### Molecular Biology:

- Robust experience in next-generation deep-sequencing platforms, such as Illumina.
- Proficient in experimental design, sample preparation, and data generation for molecular genomics studies.
- Knowledge of genomic technologies and their applications in outbreak surveillance.

### Bioinformatics:

- Extensive experience in applying bioinformatics tools and pipelines to analyze next-generation sequencing data.
- Skilled in processing raw sequencing data, and subsequent quality control, alignment, variant calling, and annotation.

### Scripting and Operating Systems:

- Proficient in developing scripts using Bash on Mac and Docker-based Ubuntu.
- Skilled in automating bioinformatics workflows to improve efficiency and reproducibility.

### Data Management and Analysis:

- Demonstrated ability to manage, clean, and analyze large datasets using RStudio.
- Experience in applying statistical methods and data visualization techniques to derive meaningful biological insights.

### Communication Skills:

- Strong written and verbal communication skills, as evidenced by successful funding applications, impactful presentations, and recognition through awards.
- Ability to effectively communicate complex scientific concepts to both technical and non-technical audiences.
- Proficient in crafting clear, concise reports, manuscripts, and scientific documentation.

## Achievements

2023 – 2024	Parasitology and Vector Biology T32 Fellowship. UW–Madison Department of Pathobiological Sciences. Madison, Wisconsin, USA
2021 – 2022	Cellular and Molecular Pathology T32 Fellowship. UW–Madison Department of Pathology and Laboratory Medicine. Madison, Wisconsin, USA
2020	Best Poster, Molecules in the Midwest. American Society for Biochemistry and Molecular Biology. Madison, Wisconsin, USA
2019	Food Research Institute Research Scholarship. UW–Madison Food Research Institute, College of Agricultural and Life Sciences
2019	Undergraduate Scholarship for Summer Study. UW–Madison. Madison, Wisconsin, USA
2019	Margaret E. and Allard Smith Undergraduate Scholarship. UW–Madison College of Letters & Science. Madison, Wisconsin, USA
2017	Finalist, Undergraduate Speech Competition. UW–Madison Communications Department. Madison, Wisconsin, USA

## Volunteering and Professional Involvement

2021 – Present Volunteer, Madison Metropolitan School District, Madison, WI, USA  
2021 – Present Cellular and Molecular Pathology Recruitment Committee  
2021 – Present Cellular and Molecular Pathology Application Review Committee  
2021 – Present American Society for Virology  
2017 – 2021 American Society for Biochemistry and Molecular Biology  
2017 – 2021 American Society for Microbiology

## Languages

English Native fluency  
Spanish Conversational (CEFR A2)  
French Intermediate (CEFR A1)

## Conferences and Workshops

2022 14<sup>th</sup> Annual Summer Institute in Statistics and Modeling in Infectious Diseases (SISMID). Pathogen Evolution, Selection, and Immunity. University of Washington Seattle, School of Public Health, Department of Biostatistics. 13 July 2022 – 15 July 2022. Seattle, Washington, USA (virtual).  
2022 14<sup>th</sup> Annual Summer Institute in Statistics and Modeling in Infectious Diseases (SISMID). Evolutionary Dynamics and Molecular Epidemiology of Viruses. University of Washington Seattle, School of Public Health, Department of Biostatistics. 25 July 2022 – 17 July 2022. Seattle, Washington, USA (virtual).  
2023 Effective and Engaging Meetings. University of Wisconsin–Madison Office of Human Resources. 14 June 2023. Madison, Wisconsin, USA (virtual).  
2023 Inclusive Teams: Co-creating Team Culture, Values, Intentions. University of Wisconsin–Madison Office of Human Resources. 20 June 2023. Madison, Wisconsin, USA (virtual).

## Presentations

1. “Flavivirus immune histories influence subsequent flavivirus disease severity” Department of Pathology and Laboratory Medicine Student Seminar, Madison, WI, USA. (Invited talk, 13 April 2023)
2. “Discovery of *M. tuberculosis* phosphatase inhibitors using high-throughput small molecule screening” Perlman Symposium on Antibiotic Discovery and Development, Madison, WI, USA. (Canceled, 1 May 2020)
3. “Teaching old drugs new tricks:  $\beta$ -lactams and phosphatase inhibitors” CALS Undergraduate Research Symposium, Madison, WI, USA. (Canceled, 15 May 2020)
4. “Discovery of *M. tuberculosis* phosphatase inhibitors using high-throughput small molecule screening” ASBMB Molecules in the Midwest Conference, Madison, WI, USA. (7 March 2020, received “**Best Poster Presentation Award**”)

5. “Computational and biochemical analysis of PstP, a *Mycobacterium tuberculosis* phosphatase” UW–Madison Undergraduate Biology Conference, Madison, WI, USA. (30 April 2019)

## **Publications**

1. *Wolbachia*-mediated resistance to Zika virus infection in *Aedes aegypti* is dominated by diverse transcriptional regulation and weak evolutionary pressures. Boehm EC\*, Jaeger AS\*, **Ries HJ\*** et al. (\*co-first authors).
2. Tracing the origin of SARS-CoV-2 Omicron-like Spike sequences detected in wastewater. Shafer MM...**Ries HJ** et al. *MedRxiv*, 2022.10. 28.22281553. 28 October 2022.
3. Sensitivity of rapid antigen tests for Omicron subvariants of SARS-CoV-2. Y Sakai-Tagawa...**Ries HJ** et al. *J. Med. Virol.* 95 (5), e28788. 2023. 6 May 2023.
4. Takashita E...**Ries HJ** et al. In Vitro efficacy of antiviral agents against omicron subvariant BA. 4.6. Published in *N. Engl. J. Med.* 387 (22), 2094-2097. 1 December 2022.
5. Treffert DA and **Ries HJ** (co-first authors). The Sudden Savant: A New Form of Extraordinary Abilities. *Wisc. Med. J.* April 2021.