

Jane A. Pascar

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RESEARCH INTERESTS

I study the tripartite relationship between mosquito genetics, microbiome composition and *Plasmodium*, the protozoan parasite responsible for causing malaria. I am most interested in understanding and quantifying systemic differences in the microbiome between infected and uninfected individuals. To address these questions I use a combination of computational biology, biogeography, and microbial ecology.

EDUCATION

- 2018– Ph.D. in Biological Sciences
Syracuse University, Center for Reproductive Evolution
- 2017 B.Sc. in Zoology, *Cum laude* with University Honors
State University of New York at Oswego

RESEARCH EXPERIENCE

- 2018– Graduate Research, Syracuse University, Center for Reproductive Evolution
Advisor: Steve Dorus
- Quantifying natural microbiome variation in the presence of pathogenic parasites
- 2017–18 Research Technician, University of Southern California, Marine and Environmental Biology
PI: Suzanne Edmands
- Hybrid incompatibilities and the evolution of mito-nuclear conflicts
- 2016–17 Undergraduate Honors Thesis Research, SUNY Oswego, Department of Biological Sciences
Advisor: Chris Chandler
- Taxonomically diverse survey of *Wolbachia* presence and genomic analyses
- 2016 Visiting Scholar, Université de Poitiers, Laboratory of Ecological and Biological Interactions
PI: Dr. Richard Cordaux
- Surgical sex-reversal of terrestrial isopods and sex chromosome evolution

PUBLICATIONS

Peer-Reviewed Articles

1. **Pascar JA** and Chandler CH. 2018. A bioinformatics approach to identifying *Wolbachia* infections in arthropods. *PeerJ* 6:e5486. doi:10.7717/peerj.5486

CONFERENCE PRESENTATIONS

Talks

- 2020 Russell A, Borrelli S, Fontana R, Laricchiuta J, **Pascar JA**, Becking T, Giraud I, Cordaux R, Chandler CH*. A transition to XY sex chromosomes associated with Y-linked duplication of a male hormone gene in a terrestrial isopod. Society for Integrative and Comparative Biology (SICB), Austin, TX
- 2017 **Pascar JA*** and Chandler CH. Identification of novel *Wolbachia* infections in arthropods using publicly accessible next-generation sequencing data. Quest, Oswego, NY • *Awarded Sigma Xi/ORSP Research Award*

Posters

- 2019 Middleton H†*, **Pascar JA**, Dorus S. Microbiome patterns in *Aedes aegypti* mosquitoes transinfected with *Wolbachia*. Syracuse University Summer Undergraduate Research Conference, Syracuse, NY
- 2018 **Pascar JA***, Watson ET, Edmands S. Properties of sex-biased gene expression in the absence of sex chromosomes. Population, Evolution and Quantitative Genetics (PEQG), Madison, WI
- 2017 **Pascar JA*** and Chandler CH. Testing for prevalence of *Wolbachia* in the terrestrial isopod species *Porcellio laevis* and *Trachelipus rathkei*. Society for Integrative and Comparative Biology (SICB), New Orleans, LA
- 2017 **Pascar JA*** and Chandler CH. Testing for prevalence of *Wolbachia* in the terrestrial isopod species *Porcellio laevis* and *Trachelipus rathkei*. RISE Scholarly & Creative Activities Symposium, Oswego, NY

* indicates presenter

† indicates undergraduate advisee

GRANTS AND AWARDS

Awards and Honors

- 2017 Sigma Xi/SUNY Oswego Office of Research and Sponsored Programs Research Award

Grants and Fellowships

Total Awards Received = \$295,500 (Only proposals awarded are listed)

- 2019–24 National Science Foundation Graduate Research Fellowship (\$138,000)
- 2019 Syracuse University Dept. of Biology Travel Grant (\$500)
- 2019 Syracuse University Graduate Student Organization Travel Grant (\$500)
- 2018–19 Syracuse University STEM Research Fellowship (\$136,500)
- 2013–17 SUNY Oswego Presidential Scholarship (\$20,000)

TEACHING EXPERIENCE

SUNY Oswego

Microbiology Lab (BIO 310)

Molecular and Cellular Biology (BIO 120)

Introduction to the Honors Program (HON 150)

SERVICE

Mentoring

Henry Middleton - Cornell University, Computer Science

Outreach

- 2019– **Letters to a Pre-Scientist:** A program designed to pair middle school students from low-income schools with scientists at all career levels. Over the course of an academic year I exchanged letters with student discussing what college/graduate school, overcoming obstacles, and careers.
- 2019 **Frontiers in Science:** Co-led a lab activity for high school students on *Drosophila* genetics. Students studied flies under dissecting microscopes and identified the various visible mutations.
- 2018 **USC McMorrow Neighborhood Academic Initiative:** The NAI is an intensive pre-college enrichment program for low-income students in 6th through 12th grade in the Los Angeles area. I traveled with a group of these student to the Wrigley Marine Science Center on Catalina Island to collect intertidal copepods and conduct short-term observational studies. This introduced the students to evolutionary topics such as the Mother's curse hypothesis and maintenance of polygenic sex determination. Throughout the year I helped host lab tours for participating teachers and their students.
- 2018 **Darwin Day Workshop:** I helped facilitate a workshop with 50 local K-12 teachers on lab activities they can implement in their classrooms to supplement their teaching of evolution.

MEDIA COVERAGE

- 2019 *Syracuse University News*. Students Earn 2019 National Science Foundation Awards. Apr 24.
- 2018 *Wrigley Institute Research Blog*. Sex-biased expression in the copepod *Tigriopus*. May 16.

Updated January 2020