Yumary Vasquez

Ph.D. Candidate yumaryvasquez.github.io yvasquez8@ucmerced.edu

EDUCATION

PhD, Quantitative and Systems Biology
University of California Merced **Aug 2023 (Expected)**

BS, Biotechnology
California State University San Marcos **June 2018**
- Minor in Computer Science
- Cum Laude

PROFESSIONAL RESEARCH EXPERIENCE

Graduate Student Researcher / UC Merced (Bennett Lab) **Mar 2019 - Current**
- Analyzing genomic data to understand the complex genetic interaction between host and symbiont. Research includes the use of genome assembly, bayesian phylogenetics, Unix scripting and R statistical programming.

Joint Genome Institute-UC Merced Intern / JGI (New Lineages of Life Group) **Jun 2022 - Aug 2022**
- Visualized and analyzed novel symbiotic lineages and their metabolic capabilities. Project includes the use of python (including pandas), phylogenetics, R visualization and high performance computing on a supercluster. Manuscript in prep.

Undergraduate Student Researcher / CSU San Marcos (Sethuraman Lab) **Sept 2016 - May 2018**
- Imaged and analyzed measurements from lady beetle populations along with their parasitic wasp using R statistical programming (Biological Control, 2017).
- Extracted genomic DNA and performed sequencing steps (including library prep) from parasitic wasps to build high-quality insect genome (G3, 2021).
- Interpreted and analyzed publicly available genomes of lady beetles in the United States using population genomic tools (Insect Science, 2017). This work was done during the Summer Scholars Program at CSU San Marcos.

Undergraduate Student Researcher / CSU San Marcos (Jameson Lab) **Dec 2014 - Dec 2015**
- Maintained mice populations for the study of Alopecia Areata and assisted graduate students in various projects that included molecular skills such as dissection, imaging, and genotyping.
- Performed dissections and identification of T-cells within mammal intestinal tissue using microscopy and fluorescent imaging with antibody tagging. This work was done during the Summer Scholars Program at CSU San Marcos.

HONORS/AWARDS

- **USDA-UC Merced FARMERS Fellow,** U. of California, Merced
  2022
- **The Ford Foundation Predoctoral Fellowship Honorable Mention**
  2020
- **NSF-NRT Training Program in Intelligent Adaptive Systems Fellowship,**
  U. of California, Merced
  2019
- **NSF-NRT Interdisciplinary Computational Graduate Education Fellow,** School of Natural Sciences,
  U. of California, Merced
  2019

- **Eugene V. Cota-Robles Fellowship (declined),** U. of California, Los Angeles
  2018

PUBLICATIONS

***Vasquez, Y.M.**, and Bennett, G.M. (2022), A complex interplay of evolutionary forces continues to shape ancient co-occurring symbiont genomes. *iScience.* Accepted.

Gossett, J., **Vasquez, Y.M.,** Bennett, G.M. and Porter, M. (2022), Genomic comparisons reveal selection pressure and functional variation between nutritional endosymbionts of cave-adapted and epigean Hawaiian planthoppers. Submitted.

Li, H., Peng, Y., Wang, Y., Summerhays, B., Shu, X., **Vasquez, Y.,** Vansant, H., Grenier, C., Gonzalez, N., Kansagra, K., Cartmill, R., Sujii, E., Meng, L., Zhou, X., Lovei, G., Obrycki, J., Sethuraman, A., and Li, B. (2022), How the harlequin ladybird conquered the world. Submitted.

Sethuraman, A., Tovar, A., Welch, W., Dettmers, R., Arce, C., Skaggs, T., Rothenberg, A., Saisho, R., Summerhays, B., Cartmill, R. Grenier, C., **Vasquez, Y.**, Vansant, H., and Obrycki, J. (2022), Genome of the parasitoid wasp Dinocampus coccinellae reveals extensive duplications, accelerated evolution, and independent origins of thelytokous parthenogeny and solitary behavior. *G3.* https://doi.org/10.1093/g3journal/jkac001

Waneka, G., **Vasquez, Y.M.**, Bennett, G.M. and Sloan, D.B. (2020), Mutational pressure drives differential genome conservation in two bacterial endosymbionts of sap feeding insects. *Genome Biology and Evolution.* https://doi.org/10.1093/gbe/evaa254

Vansant, H., ***Vasquez, YM.,** Obrycki JJ., Sethuraman A. (2019), Coccinellid host morphology dictates diversity of the parasitoid wasp Dinocampus coccinellae. *Biological Control.* https://doi.org/10.1016/j.biocontrol.2019.02.015

Sethuraman, A., Janzen, F. J., Rubio, M. A., **Vasquez, Y.** and Obrycki, J. J. (2017), Demographic histories of three predatory lady beetles reveal complex patterns of diversity and population size change in the United States. *Insect Science.* doi:10.1111/1744-7917.12481

* = first authorship papers

TALKS/POSTERS

Joint Genome Institute Annual User Meeting (Declined) / Joint Genome Institute
August 2022, Berkeley CA
- Vasquez, Y., Villada, J.. (2022) "Comparative genomics of novel symbionts"

Joint Genome Institute - UC Merced Internship Seminar / Joint Genome Institute
August 2022, Berkeley, CA
- Vasquez, Y., Villada, J.. (2022) "Comparative genomics of novel symbionts"

Yosemite Symbiosis Workshop
May 2022, Sierra Nevada Research Institute
- Vasquez, Y., Bennett, G.. (2022) "Leveraging a Hawaiian leafhopper adaptive radiation to understand bacterial symbiont genome evolution"

Student and Early Career Researcher Symposium / Hawaiian Entomological Society
March 2022, Virtual
- Vasquez, Y., Bennett, G.. (2022) "Leveraging a Hawaiian leafhopper adaptive radiation to understand bacterial symbiont genome evolution"
- 3rd Place Award

Quantitative and Systems Biology Retreat / U. of California, Merced
May 2021, Virtual
- Vasquez, Y., Bennett, G.. (2021) "The Co-evolution of Endemic Hawaiian Leafhoppers and Their Endosymbionts"

SERVICE

RadioBio /U. of California, Merced
Marketing Director: May 2022 - current
President: May 2021 - May 2022
Vice President: May 2020 - May 2021
Treasurer: May 2019 - May 2020
Member: September 2018 - May 2019

Quantitative and Systems Biology Representative: Graduate Student Association/ U. of California, Merced
March 2020 - May 2021

Quantitative and Systems Biology: Diversity, Equity and Inclusion committee/ U. of California, Merced
September 2020 - current

Reflecting on Anti-Racist Pedagogy Virtual Dialogue Series: Participant / U. of California, Merced
September 2020 - December 2020

Data Carpentry Workshop: "Helper"/ U. of California, Merced
August 2020

TEACHING

Data Science Discussion/ U. of California, Merced
Spring 2022

Guest Presenter: Data Science/ U. of California, Merced
Spring 2022

Undergraduate Research Opportunities Center (UROC) Summer Grad Mentor/ U. of California, Merced
Summer 2021

Evolution Lab/ U. of California, Merced
Summer 2019, Fall 2020, Spring 2021, Fall 2021

Intro to Molecular Biology Lab/ U. of California, Merced
Fall 2018, Spring 2019

Guest Presenter: Evolution/ U. of California, Merced
Fall 2018, Spring 2019, Fall 2020

CERTIFICATIONS/WORKSHOPS

NERSC AI for Science Bootcamp Joint Genome Institute NERSC 8/2022

Applied Data Science with Python Specialization Coursera
- Introduction to Data Science in Python 4/2022
- Applied Plotting, Charting & Data Representation in Python 4/2022
- Applied Machine Learning in Python 4/2022
- Applied Text Mining in Python 4/2022
- Applied Social Network Analysis in Python 5/2022

Anti-Racist Pedagogy Discussion Series Center for Engaged Teaching and Learning/ U. of California, Merced
- Anti-Racist Pedagogy Fall 2020, Spring 2021

CETL Workshop Series Center for Engaged Teaching and Learning/ U. of California, Merced
- Preparing to Teach in the Online Environment Summer 2020
- Institute for Evidence-based Teaching Practices Spring 2021

Instructional Internship Program Center for Engaged Teaching and Learning/ U. of California, Merced
- Mastering the Classroom with 1st Generation College Students series:
  - Setting Expectations Workshop 9/2018
  - Classroom Challenges Workshop 9/2018
  - Grading Effectively Workshop 9/2018
- The TA and the IOR Roles: Working Together Workshop 9/2018