

Yumary Vasquez

Ph.D. Candidate

yumaryvasquez.github.io

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EDUCATION

PhD, Quantitative and Systems Biology

University of California Merced

May 2024 (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. My 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

- Visualizing and analyzing 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.

Undergraduate Student Researcher / CSU San Marcos (Sethuraman Lab)

Sept 2016 - May 2018

- Images and analyzed measurements from lady beetle populations along with their parasitic wasp partner using R statistical programming (Biological Control, 2017). Extracted genomic DNA from parasitic wasps to build genome (G3, 2021)

Summer Scholars Program - Research Assistant / CSU San Marcos

Jun 2017 - Aug 2017

- Interpreted and analyzed publicly available genomes of lady beetles in the United States using bioinformatic tools (Insect Science, 2017).

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.

Summer Scholars Program - Research Assistant/ CSU San Marcos

Jun 2015 - Aug 2015

- Dissected mice and identified T-cells within intestinal tissue using microscopy and fluorescent imaging

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

- **Cum Laude**, College of Science and Mathematics, California State University San Marcos
2018
- **Eugene V. Cota-Robles Fellowship (declined)**, U. of California, Los Angeles
2018
- **Biotechnology Outstanding Faculty Student Collaboration Award**, College of Science and Mathematics
California State University San Marcos
2018
- **Louis Stokes Alliance for Minority Participation (LSAMP) Fellowship**, Office for Training, Research and
Education in the Sciences (OTRES)
2017

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 epigeal 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, Y.M.**, Obrycki J.J., 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

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”

Student Poster Showcase / California State University San Marcos

December 2017, San Marcos

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- Vasquez, Y., Vansant, H. Sethuraman, A. (2017) “Morphological and Genetic Diversity of the Parasitoid Wasp (*Dinocampus coccinellae*) in the United States”

UCLA Grad Fair and CSU Symposium / U. of California, Los Angeles

August 2017, Los Angeles

- Vasquez, Y., Vansant, H. Sethuraman, A. (2017) “Morphological and Genetic Diversity of the Parasitoid Wasp (*Dinocampus coccinellae*) in the United States”

Summer Research Poster Showcase / California State University San Marcos

August 2017, San Marcos

- Vasquez, Y., Vansant, H. Sethuraman, A. (2017) “Morphological and Genetic Diversity of the Parasitoid Wasp (*Dinocampus coccinellae*) in the United States”

CSU Program for Education & Research in Biotechnology Symposium

January 2017, Santa Clara

- Vasquez, Y., Rubio, M., Sethuraman, A. (2016) “Population Genomics of Predatory Lady in the United States”

Student Poster Showcase / California State University San Marcos

December 2016, San Marcos

- Vasquez, Y., Rubio, M., Sethuraman, A. (2016) “Population Genomics of Predatory Lady in the United States”

Summer Research Poster Showcase / The California State University San Marcos

August 2015, San Marcos

- Vasquez, Y., Park, C., Cheung, K., Barba, C., Mendoza, G., Jameson, J., (2016) “Identifying how inflammation impacts the intestinal immune system in obesity”

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

Lead STEM Ambassador/ California State University San Marcos

September 2014 - May 2018, STEM Center

Louis Stokes Alliance for Minority Participant/ California State University San Marcos

September 2015 - May 2018, Office for Training, Research and Education in the Sciences

College of Science and Mathematics Representative / California State University San Marcos

May 2016 - May 2017, Associated Students Inc

Learning Assistant / California State University San Marcos

September 2014 - December 2014, September 2015 - December 2015, STEM Center

TEACHING

Data Science Discussion/ 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

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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

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

Spring 2022

CERTIFICATIONS/WORKSHOPS

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