

# Alex J. Veglia

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## Academic Appointments

### Assistant Professor

July 2023-Present

University of Puerto Rico Mayaguez, Department of Biology  
PI of the Virus Diversity and Bioinformatics (ViDaB) Lab (www.vidablab.com)

### *Courses Taught:*

- Genetics – BIOL 3300
- Seminario – BIOL 4925
- Virology – BIOL 5755

## Education

### Rice University

August 2019- August 2023

- PhD in Ecology and Evolutionary Biology
- Thesis: Detecting and interpreting viral dynamics in marine invertebrate holobionts
- Degree conferral date: August 31, 2023

### University of Puerto Rico, Mayaguez

August 2016-May 2019

- Master's in marine science (May 2019)
- Concentration in biological oceanography
- Tuition Waiver of Academic Honors at the University of Puerto Rico-Mayagüez (Fall 2017-Spring 2019).

### Roger Williams University, Bristol, Rhode Island

Fall 2012-2016

- Bachelor of Science (May 2016)
- Major in Marine Biology with a minor in Chemistry
- Thesis with Distinction, Outstanding Senior in Marine Biology Award

## Publications

#Indicates equal authorship; ^Indicates preprint

17. Ramos-González, J., Rodríguez-Ferrer, G., Franqui-Rivera, G., Veglia, A., Esteves-Amador, R. F., & Cruz-Motta, J. J. (*In Press*). Characterization of recreational and commercial swordfish (*Xiphias gladius*) fishery in Puerto Rico. *Caribbean Journal of Sciences*.
16. Vega Thurber, R. L., Silva, D., Speare, L., Croquer, A., **Veglia, A. J.**, Alvarez-Filip, L., Zaneveld, J. R., Muller, E. M., & Correa, A. M. S. (2024). Coral disease: Direct and indirect agents, mechanisms of disease, and innovations for increasing resistance and resilience. *Annual Review of Marine Science*, 17, 20.1–20.29. <https://doi.org/10.1146/annurev-marine-011123-102337>
15. ^Toledo-Rodríguez, D. A., **Veglia, A.J.**, Marrero, N. M. J., Gomez-Samot, J. M., McFadden, C. S., Weil, E., & Schizas, N. V. (2024). Shadows over Caribbean reefs: Identification of a new invasive soft coral species, *Xenia umbellata*, in southwest Puerto Rico. *bioRxiv*. DOI: 10.1101/2024.05.07.592775
14. **Veglia, A.J.**, Rivera-Vicéns, R.E., Grupstra, C.G.B., Howe-Kerr, L.I., Correa, A.M.S. (2024) vAMPirus: A versatile amplicon processing and analysis program for studying viruses. *Molecular Ecology Resources*. <https://doi.org/10.1111/1755-0998.13978>
13. Howe-Kerr, L. I., Knochel, A. M., Meyer, M. D., Sims, J. A., Karrick, C. E., Grupstra, C. G. B., **Veglia, A. J.**, Thurber, A. R., Vega Thurber, R. L., & Correa, A. M. S. (2023). Filamentous virus-

- like particles are present in coral dinoflagellates across genera and ocean basins. *The ISME Journal*, 1-14. <https://doi.org/10.1038/s41396-023-01353-9>
12. **Veglia, A.J.**<sup>#</sup>, Bistolas, K.<sup>#</sup>, The Tara Pacific Consortium, Correa, A.M.S., Vega Thurber, R. L. (2023). Endogenous viral elements reveal ancient associations between a non-retroviral RNA virus and symbiotic dinoflagellate genomes. *Communications Biology*. DOI: doi.org/10.1038/s42003-023-04917-9
  11. Beavers, K., Van Buren, E., Rossin, A., Emery, M., **Veglia, A.J.**, Karrick, C., MacKnight, N., Dimos, B., Meiling, S., Smith T., Apprill, A., Muller, E., Holstein, D., Correa, A., Brandt, M., Mydlarz, L. (2023). Stony Coral Tissue Loss Disease Induces Transcriptional Signatures of in situ Degradation of Dysfunctional Symbiodiniaceae. *Nature Communications*. DOI: 10.1038/s41467-023-38612-4
  10. Howe-Kerr, L.I., Grupstra, C.G.B., Rabbitt, K., Conetta, D., Coy, S.R., Klinges, J.G., Maher, R.L., McConnell, K.M., Meiling, S.S., Messyasz, A., Schmeltzer, E.R., Seabrook, S., Sims, J., **Veglia, A.J.**, Thurber, A.R., Vega Thurber, R.L., Correa, A.M.S. (2023). Viruses of a key coral symbiont exhibit temperature-driven productivity across a reefscape. *ISME Communications*. DOI: 10.1038/s43705-023-00227-7
  9. Grupstra, C.G.B., Howe-Kerr, L.I., van der Meulen, J.A., **Veglia, A.J.**, Coy, S.R., Correa, A.M.S. (2023). Consumer feces impacts coral health in guild-specific ways. *Frontiers in Marine Science*. DOI: 10.3389/fmars.2023.1110346
  8. **Veglia, A. J.**, Beavers, K., Van Buren, E. W., Meiling, S. S., Muller, E. M., Smith, T. B., ... & Correa, A. M. S. (2022). Alphaflexivirus genomes in stony coral tissue loss disease-affected, disease-exposed, and disease-unexposed coral colonies in the US Virgin Islands. *Microbiology Resource Announcements*, 11(2), e01199-21.
  7. Grupstra, C.G.B., Howe-Kerr, L.I.<sup>#</sup>, **Veglia, A.J.**<sup>#</sup>, Bryant, R., Coy, S.R., Blackwelder, P.L., Correa, A.M.S. (2022). Increased water temperatures drive rapid changes to dinornal-like virus consortia in the stony coral *Pocillopora verrucosa*. *The ISME Journal*. 16 (5), 1430-1441.
  6. Meiling, S. S., Muller, E. M., Lasseigne, D., Rossin, A., **Veglia, A. J.**, MacKnight, N., ... & Brandt, M. E. (2021). Variable species responses to experimental stony coral tissue loss disease (SCTLD) exposure. *Frontiers in Marine Science*. 8, 464.
  5. **Veglia, A.J.**, Milford, C.R., Schizas, N.V. (2021). Isolation and genotyping of novel T4 cyanophages associated with diverse coral reef invertebrates. *Coral Reefs*. 40(2), 485-504.
  4. Hammerman, N.M., Williams, S., **Veglia, A.J.**, García-Hernández, J.E., Lang, J.E., and Schizas, N.V. (2020). A new record of a cup coral (*Cladopsammia manuelensis*) in Hispaniola and Puerto Rico. *Cahiers de Biologie Marine*. 62, 1-10.
  3. Rivera-García, L., Rivera-Vicéns, R., **Veglia, A.J.**, and Schizas, N.V. (2019). *De novo* transcriptome assembly of the soft octocoral *Briareum asbestinum* (digitate morphology) from southwest continental shelf of Puerto Rico. *Marine Genomics*. doi: 10.1016/j.margen.2019.04.001
  2. **Veglia, A.J.**, Hammerman, N.M., Rivera-Vicéns, R.E., and Schizas, N.V. (2018). *De novo* transcriptome assembly of the coral *Agaricia lamarcki* (Lamarck's sheet coral) from mesophotic depths in southwest Puerto Rico. *Marine Genomics*. 41:6-11. doi: 10.1016/j.margen.2018.08.003
  1. **Veglia, A.J.**, Hammerman, N.M., Rivera Rosaly, C.R., Lucas, M., Galindo Estronza, A., Corgosinho, P.H., and Schizas, N.V. (2018). Characterizing population structure of coral-associated fauna from mesophotic and shallow habitats in the Caribbean. *Journal of the Marine Biological Association of the United Kingdom*. 1-11. doi: doi.org/10.1017/S0025315418000413

## Manuscripts in Review #Indicates equal authorship

1. Toledo-Rodriguez, D. A., **Veglia, A.J.**, Marrero, N. M. J., Gomez-Samot, J. M., McFadden, C. S., Weil, E., & Schizas, N. V. (*In Review*). Shadows over Caribbean reefs: Identification of a new invasive soft coral species, *Xenia umbellata*, in southwest Puerto Rico. *Coral Reefs*.
2. García-Hernández, J. E., **Veglia, A. J.**, Alfaro, M., & Schizas, N. V. (*In Review*). Ents of coral reefs: The giant barrel sponge *Xestospongia muta* functioning as OA2SIS (Oscillators, Attractors, and Amplifiers of Symbiotic Interactions between Species) for biodiversity. *Marine Biodiversity*.

## Manuscripts in Preparation

1. **Veglia, A. J.**, Beavers, K., Van Buren, E. W., Meiling, S. S., Muller, E. M., Smith, T. B., ... & Correa, A. M. S. (*In Prep.*) Investigating the roles of viruses in stony coral tissue loss disease. \*Target Journal: *Science Advances*\*
2. **Veglia, A.J.**, Sharer, M.T., Appeldoorn, R., Schizas, N.V. (*In Prep.*) Reference genome assembly of the endangered fish Nassau grouper (*Epinephelus striatus*). \*Target Journal: *Marine Genomics*\*
3. García-Hernández, J.E., González-García M.D., Toledo-Rodríguez, D.A., Doménech, J.P., González, A., **Veglia, A.J.**, Weil, E., Schizas, N.V. (*In Prep.*) Alien clones: Arrival and establishment of *Ophiothela mirabilis* along Puerto Rican shallow and upper mesophotic coral reefs. \*Target Journal: *Biological Invasions*\*

## Bioinformatic Program Releases

1. **Veglia, A.J.**, Rivera-Vicens, R., Grupstra, C.G., Howe-Kerr, L.I., Correa, A.M.S. (2021). vAMPirus v2.0.2: An automated, comprehensive virus amplicon sequencing analysis program. Zenodo. <https://doi.org/10.5281/zenodo.5590322>
2. **Veglia, A.J.**, Rivera-Vicens, R., Grupstra, C.G., Howe-Kerr, L.I., Correa, A.M.S. (2021). vAMPirus v1.0.0: An automated, comprehensive virus amplicon sequencing analysis program. Zenodo. <https://doi.org/10.5281/zenodo.4549695>

## Presentations

<u>UPRM Biology Symposium</u>	May 2024
Title: Exploring the environmental virosphere across diverse habitats in Puerto Rico	
<u>NSF HSI National STEM Resource Hub Conference: Adelante!</u>	March 2024
Title: Pioneering Undergraduate-led research at UPR Mayaguez, a longstanding HSI	
<u>Coral Reef Conservation &amp; Restoration Summit</u>	December 2023
Title: Viruses in marine ecosystems and their potential uses in management	
<u>iVoM Webinar Series Season 3 (iVoM3)</u>	December 2023
Title: Investigating the viral contribution to the etiology of a stony coral disease	
<u>NOAA 'Omics Seminar Series</u>	November 2023
Title: Detecting and Interpreting virus diversity and dynamics in marine holobionts	
<u>UPRM Department of Biology Seminar Series (TALK)</u>	September 2023
Title: Detecting and Interpreting virus diversity and dynamics in marine holobionts	
<u>Virus Bioinformatics Meeting 2022 (TALK)</u>	March 2022
Title: vAMPirus: An automated virus amplicon sequence analysis program to support investigations of viral community ecology	

<u>US Regional Caribbean SCTL D Workshop (TALK)</u>	March 2022
Title: Researching viruses in the context of SCTL D	
<u>10th Aquatic Virus Workshop (TALK)</u>	June 2021
Title: Evidence of ancient associations between a non-retroviral RNA virus and key coral reef symbionts	Online
<u>Houston Regional Ecology and Evolution Symposium (TALK)</u>	May 2021
Title: Evidence of ancient associations between a non-retroviral RNA virus and key coral reef symbionts	Houston, TX
<u>“For the Ocean” lecture series - University of Puerto Rico (TALK)</u>	August 2020
Title: Coral reef viruses	Online
<u>Presentation to the PR Department of Natural and Environmental Resources (TALK)</u>	March 2020
Title: Viruses in coral reef holobionts	Online
<u>2019 Marine Ecosystems Symposium (TALK)</u>	March 2019
Title: Isolating, culturing, and genotyping of novel cyanophages inhabiting coral reef holobionts in southwest, Puerto Rico	Arecibo, PR
<u>2019 Aquatic Sciences Meeting (TALK)</u>	February 2019
Title: Isolating, culturing, and genotyping of novel cyanophages inhabiting coral reef holobionts in southwest, Puerto Rico	San Juan, PR
<u>2018 Marine Sciences Symposium (TALK)</u>	April 2018
Title: Virome characterization of the endangered coral <i>Orbicella Faveolata</i> in southwest, Puerto Rico	Mayagüez, PR
<u>Marine Sciences Research and Management Symposium 2016 (POSTER)</u>	September 2016
Title: Genomic variation, host range, and infection kinetics of closely related cyanopodoviruses from New England coastal waters	Mayagüez, PR
<u>Student Academic Showcase and Honors (POSTER)</u>	April 2016
Title: Genomic variation, host range, and infection kinetics of closely related cyanopodoviruses from New England coastal waters	Bristol, RI
<u>2016 Ocean Sciences Meeting (POSTER)</u>	February 2016
Title: Genomic variation, host range, and infection kinetics of closely related cyanopodoviruses from New England coastal waters	New Orleans, LA
<u>Northeast Algal Symposium (POSTER)</u>	April 2014
Title: Host range analysis of <i>Synechococcus</i> -infecting podoviruses from southern New England	Newport, RI
<u>Student Academic Showcase and Honors (POSTER)</u>	April 2014
Title: Host range analysis of <i>Synechococcus</i> -infecting podoviruses from southern New England	Bristol, RI

## **Awarded Funding**

<u>Florida Department of Environmental Protection</u>	Awarded July 2024
Amount: \$50,748.69	
<u>Florida Department of Environmental Protection</u>	Awarded July 2023
Amount: \$29,109.00	
<u>Expanding Horizons Fellowship (co-authored with Kara Titus)</u>	Awarded December 2021
Amount: \$4,000	
<u>2021 AMLC Student Grants in Aid of Research</u>	Awarded June 2021
Amount: \$400.00	
<u>Wagoner Foreign Study Scholarship</u>	Awarded June 2020
Amount: \$8,000.00	
<u>2018-2019 NASA Puerto Rico Space Grant Fellow</u>	Awarded June 2018
Amount: \$14,700.00	

Sigma XI Grants-in-Aid of Research

Amount: \$980.00

Awarded May 2018

Sea Grant Puerto Rico

Amount: \$1,727.00

Awarded June 2018

Roger Williams University Provost Fund for Student Research

Amount: \$1,500.00

Awarded October 2015

## **Service & Outreach**

Olas de Cambio Taller I (June 2024)

Description: The "Olas de Cambio Taller I" was a 6-day immersive workshop for undergraduate students from Puerto Rican universities, organized in collaboration with the non-profits [Head Above Water](#) and [EcoAzul](#). Participants received hands-on training in essential field skills, explored various disciplines within marine science, and benefited from professional and personal development sessions, including financial literacy. This comprehensive program aimed to equip students with the knowledge and skills needed for successful careers in marine science. Check out the highlights on Instagram [here](#).

Puerto Rico's Immersive Marine Experience (PRIME) Workshop (July 2022)

Description: Developed, organized, and conducted an 8-day workshop for 16 undergraduate students from the University of Puerto Rico Mayaguez and Inter Americana Barranquitas in July 2022. The workshop included lectures covering major topics within marine sciences in combination with field training (e.g., biodiversity surveys) on local coral reefs. PRIME also included professional development lectures that allowed students to better understand potential career paths in marine sciences and how to navigate next steps after graduation.

OWLS Outreach at Rice University (Spring 2020-Present)

Description: OWLS Outreach is a group of graduate students from diverse backgrounds passionate about communicating about life sciences to 5th-8th grade students. Our goal is to engage students with hands-on, mentored science and develop and make available tools that can be used by teachers to instill a passion for science in their students when we're not around. During my time with OWLS Outreach, we have created several virtual educational lessons ([owlls.blogs.rice.edu/virtual-modules/](http://owlls.blogs.rice.edu/virtual-modules/)) to allow us to still make an impact during COVID19 pandemic and when possible visited local schools in the Houston area ([owlls.blogs.rice.edu/modules/](http://owlls.blogs.rice.edu/modules/)).

President of UPRM Department of Marine Science Student Organization (May 2017- May 2019)

Description: Organized and facilitated educational outreach to the local community promoting conservation of Puerto Rico's marine resources. Specifically, I have organized outreach events at local schools and town squares, marine science symposiums and open-house events for the Department of Marine Sciences at UPRM.

Vice President of UPRM Department of Marine Science Student Organization (January 2017-May 2017)

Description: Organized and facilitated educational outreach to the local community promoting conservation of Puerto Rico's marine resources.

## **Additional Training**

March 2024 Hub's Conference - Adelante!

New Mexico State University

Summary: Building Capacity for STEM Student Success at Hispanic-Serving Institutions in New Mexico from March 21<sup>st</sup> to March 24<sup>th</sup>, 2024 hosted by NSF HSI National STEM Resource Hub.

Fall 2021 Viromics Workshop Webinar Series (October 2021)

The Ohio State University

Summary: A three-day workshop discussing bioinformatic approaches for analyzing virome data.

NCGAS Metagenomics Analysis Workshop (October 2019)

Indiana University

Summary: A two-day workshop that focused of utilizing HPC clusters to analyze large metagenome data sets.

Le Kretz Workshop in Conservation Genomics 2018 (March 2018)

University of California at Los Angeles

Summary: Intensive five-day workshop providing experience in bioinformatics analyses and focusing on modern genomic techniques in the current era of conservational biology.

NCGAS Spring Transcriptome Assembly Workshop (April 2018)

Indiana University

Summary: A two-day workshop that focused of utilizing HPC clusters to assemble and analyze large RNA-seq data sets.

CREEDS 2018 Summer School for Computational Genomics (June 2018)

Icahn School of Medicine at Mt. Sinai

Summary: A two-week intensive workshop on computational genomics for graduate students.

## **Professional affiliations**

EcoAzul ([www.ecoazul.org](http://www.ecoazul.org))

August 2023-Present

Position: Co-founder, Executive Director

Description: Founded in 2023, EcoAzul is a multidisciplinary collective dedicated to advancing science-based educational outreach and conservation efforts across Puerto Rico. EcoAzul is committed to strengthening local communities by spearheading innovative outreach and conservation initiatives. Our overall mission is to cultivate resilience, enabling the inhabitants (human and non-human) of Puerto Rico to adapt and thrive amidst the challenges posed by climate change.

European Virus Bioinformatics Center (EVBC)

April 2022-Present

Position: Contributing member

Description: The EVBC is a consortium of investigators looking to develop virus-specific bioinformatic tools to better equip the field to address fundamental questions in virology.

## **Scientific Journal Reviewer**

- *Nature Research*
- *The ISME Journal*
- *PeerJ*
- *PLOS ONE*
- *Diseases of Aquatic Organisms*

## **Certificates and Other Skills**

- **Experienced AAUS scientific diver**
- PADI Open Water Certified Diver
- Proficient in Spanish.