

ALEJANDRO DE SANTIAGO

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 Website: www.microbialbioinformatics.com

education

- Ph.D. in Bioinformatics, University of Georgia (UGA), Athens GA 2020 – pres.
- B.S in Microbiology, University of California – Riverside (UCR), Riverside CA 2015 – 2019

academic appointments

- Adjunct Professor, Department of Biology, Morehouse College F 2022

research experience

- Graduate Research Assistant, Institute of Bioinformatics, UGA 2020 – pres.
- Technical Paraprofessional, Department of Marine Sciences, UGA 2019 – 2020
- Junior Specialist, Department of Nematology, UCR 2019
- HHMI ExROP Research Fellow, Department of Biology, WUSTL SU 2018
- Undergraduate Research Assistant, Department of Nematology, UCR 2017 – 2019
- HHMI ExROP Research Fellow, Department of Biology, WUSTL SU 2017
- Dynamic Genome Fellow, Department of Botany & Plant Sciences, UCR SU 2016

fellowships, honors, and awards

- UGA Graduate Fellowship in Open Sciences (\$2,500 + publication fees) 2022 – 2023
- UGA NIH T32 Genetics Training Grant (\$31,500/yr. + tuition & fees) 2021 – 2023
- Dean's Honor List (Winter Quarter) 2019
- HHMI ExROP Capstone Fellowship (\$8,000) 2018
- Segal AmeriCorps Education Award (\$1,500) 2017
- HHMI ExROP Fellowship (\$5,000) 2017
- UCR Dynamic Genome Summer Research Fellowship (\$5,000) 2016
- Blair Family AvalonBay Scholarship (\$20,000) 2015 – 2019

research grants

- UGA Summer Research Grant for Doctoral Students (\$1,500) 2021
- UCR Undergraduate Education Minigrant (\$750) 2018

publications*In prep and review*

- **De Santiago A**, Pereira TJ, Bik HM. Persistent gaps in reference databases impede accurate taxonomy assignments in 18S rRNA metabarcoding studies. *In prep*

Peer-reviewed research articles

4. **De Santiago A***, Pereira TJ*, Hardy SM, Bik HM. (2022) Dataset complexity impacts both MOTU delimitation and biodiversity estimates in eukaryotic 18S rRNA metabarcoding studies. *Environmental DNA*. 4(2):363-384. DOI: [10.1002/edn3.255](https://doi.org/10.1002/edn3.255) *co-first authors
3. Pereira TJ, **De Santiago A**, Schuelke T, Hardy SM, Bik HM. (2020) The impact of intragenomic rRNA variation on metabarcoding-derived diversity estimates: a case study from marine nematodes. *Environmental DNA*. 2(4):519-534. DOI: [10.1002/edn3.77](https://doi.org/10.1002/edn3.77)
2. Holland CK, Westfall CS, Schafer JE, **De Santiago A**, Zubieta C, Alvarez S, Jez JM. (2019) Brassicaceae-specific Gretchen Hagen 3 acyl acid amido synthetases conjugate amino acids to chorismate, a precursor to aromatic amino acids and salicylic acid. *Journal of Biological Chemistry*. 294(45):16855-16864. DOI: [10.1074/jbc.RA119.009949](https://doi.org/10.1074/jbc.RA119.009949)

1. Zhou D, Feng H, Schuelke T, **De Santiago A**, Zhang Q, Zhang J, Luo C, Wei L. (2019) Rhizosphere microbiome from root-knot nematode non-infected plants suppress nematode infection. *Microbial Ecology*. 78(2):470-481. DOI: [10.007/s00248-019-01319-5](https://doi.org/10.007/s00248-019-01319-5)

conference presentations

Oral Presentations

- **De Santiago A**, Bik HM. (2022) Using single-worm metagenomics to assess the role of the nematode microbiome on biogeochemical processes. 18th International Meiofauna Conference, New Zealand. December 5 – 9.
- **De Santiago A**, Marcelino Barros M, Bik HM. (2022) Elucidating the taxonomic and functional profiles of nematode-associated microbes via single-worm sequencing. Ocean Sciences Meeting, Honolulu, HI. February 27 – March 4.

Poster presentations

- **De Santiago A**, Bik HM. (2018) Diversity and structure of meiofaunal and microbial communities in the Colville and Mackenzie River Plumes. University of California – Riverside annual undergraduate research symposium, Riverside, CA. May 7-8.
- **De Santiago A**, Holland CK, Jez JM. (2018) Structural and biochemical investigation of plant-nematode interactions. Annual ExROP Meeting, Chevy Chase, MD. May 16-18.
- **De Santiago A**, Holland CK, Jez JM. (2018) Structural and biochemical investigation of plant-nematode interactions. Experimental Biology, San Diego, CA. April 21-25
- Barnes A, **De Santiago A**, Miller S, Zavala J, Burnette J, Cortez A, Descalzo DM, Wessler S. (2016) Protecting California's wine industry from Pierce's disease by producing genetically engineered resistant grapevines. University of California – Riverside summer RISE symposium, Riverside, CA. August 24.
- **De Santiago A**, Tejeda G, Zavala J, Burnette J, Chetty VJ, Cortez A, Descalzo DM, Wessler S. (2016) Characterizing the CONSTANS gene family across citrus varieties. University of California – Riverside summer RISE symposium, Riverside, CA. August 24.

Abstracts (#presenter/speaker)

- Pereira TJ#, **De Santiago A**, Bik HM. (2022) Benthic eukaryotic community structure in the Alaskan Arctic as assessed by 18S rRNA metabarcoding and shotgun metagenomics. Ocean Sciences Meeting, Honolulu, HI. February 27 – March 4.

teaching experience

Morehouse College

- **Instructor**. BIOL 114: Population, Community, and Biosphere. *F 2022*
- **Instructor**. BIOL 114L: Population, Community, and Biosphere Lab. *F 2022*

Software Carpentries (certified software carpentries instructor)

- **Instructor**. Bioinformatics Workshop: Introduction to Genomics, UGA. *May 23 & 25, 2023*
- **Instructor**. 2-Day Core Software Carpentry Workshop, UGA. *July 20 – 21, 2022*
- **Instructor**. 2-Day Core Software Carpentry Workshop, UGA. *June 16 – 17, 2022*
- **Instructor**. Genomic Data Analysis, UGA. *May 18 – 19, 2022*
- **Teaching Assistant**. R for Reproducible Scientific Analysis, UGA. *Oct 29, 2021*

Undergraduate Mentorship

- Jalen Scott – REU University of Georgia (SU 2022)

Undergraduate Teaching Assistant

- **Teaching Assistant**. STEM Pathway: DNA Pathway. Program funded by the HHMI to provide local community college students with research experience. University of California – Riverside. *Feb 2017*
 - Covered by local media: [Press-Enterprise](#)

professional development

- Software Carpentry Instructor Training. *Oct 18 – 21, 2021*
- 10th Annual ANGUS Workshop: Analyzing high-throughput sequencing data. University of California – Davis. *July 1 – 13, 2019*

outreach & academic service

- **Discussion Leader.** “Mentoring and belonging in Science Series” - Leading a workshop discussion on succeeding in scientific careers for Summer Undergraduate Fellowships in Genetics (SUNFIG) students. *July 10, 2023*
- **Contributing Scientist.** Contributed to a blog about our scientific research cruise to Eastern Antarctica. Website: www.icyinverts.com. *March – May 2023*
- **Panelist.** “Live from Antarctica: In search of worms and gooey invertebrates.” An NSF-funded webinar aimed at students from K-12th. *March 14, 2023*
- **Committee Member.** Diversity, Equity, and Inclusion Committee. Institute of Bioinformatics, UGA. *2021 – present*
- **Co-organizer.** Graduate School Workshop - Facilitated discussion on navigating graduate school applications and interviews. Virtual. *Jan 9, 2021*
- **Treasurer.** Bioinformatics Graduate School Association (BIGSA). Institute of Bioinformatics, University of Georgia. *Aug 2020 – July 2021*
- **AmeriCorps Tutor.** University Eastside Community Collaborative (UECC) AmeriCorps. Tutored elementary school students performing below grade level in language arts and math. *Aug 2016 – July 2017*

oceanographic research cruises

- **Participating Scientist.** R/V Nathaniel B. Palmer, Eastern Antarctica. *March 6 – May 11, 2023*