

Kristel F. Sánchez, PhD

Post-Doctoral Researcher

Leibniz-Institut für Gewässerökologie und Binnenfischerei (IGB)

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EDUCATION

Ph.D. in Ecology and Evolutionary Biology

August 2023

Advisor: Meghan A. Duffy

University of Michigan, Ann Arbor, MI

M.S. in Ecology and Evolutionary Biology

April 2017

Advisors: Meghan A. Duffy & Mark D. Hunter

University of Michigan, Ann Arbor, MI

B.S. with Honors in Biological Sciences

April 2014

Minor in Chemistry

Advisors: Deron Burkepile & John Berry

Florida International University, Miami, FL

EMPLOYMENT

September 2023-

Postdoctoral fellow. Leibniz-Institute of Freshwater Ecology and Inland Fisheries, (IGB), Berlin, Germany.

August 2014-June 2015

Laboratory supervisor. Florida International University, Miami, FL.

August 2012-June 2014

Chemical stockroom assistant. Florida International University, Miami, FL.

TEACHING EXPERIENCE

University of Michigan

Introduction to Field Research (EEB500) Summer 2023

Guest instructor to Field Research (EEB500) Summer 2022

Introduction to Field Research (EEB500), Summer 2019 & Summer 2021

Food, Energy, and Environmental Justice (BIO101), Fall 2019

General Ecology Lab (EEB372), Fall 2016 & Fall 2015

Ecology Discussion (BIO281), Winter 2016

Florida International University

General Chemistry Lab (CHM1045), Spring 2015

Organic Chemistry Lab (CHM2011), Fall 2014

Research and Ethics (UP Bound Math & Sciences-UBMS-Program), Summer 2014

Genetics, Geometry, & Spanish (UBMS Program), Summer 2013

PUBLICATIONS

Sánchez KF, von Elert E, Monell K, Calhoun S, Maisha A, McCreadie P, Duffy MA (2024) Inhibition of gut digestive proteases by cyanobacterial diets decreases infection in a *Daphnia* host-parasite system. *Ecology & Evolution*. 14 (4): e11340. <https://doi.org/10.1002/ece3.11340>

Sánchez, KF, Zhong, B, Agudelo, JA, & Duffy, MA (2023). Infectivity of the parasite *Metschnikowia bicuspidata* is decreased by time spent as a transmission spore, but exposure to phycotoxins in the water column has no effect. *Freshwater Biology*, 00, 1– 11. <https://doi.org/10.1111/fwb.14082>

Kociolek JP, Lowe RL, **Sanchez K**, Stepanek JG (2021) Benthic diatom (*Bacillariophyta*) flora of Torch Lake, Michigan, and oligotrophic, alkaline ecosystem with evident benthic diatom production, with a consideration of some new and interesting species. *The Great Lakes Botanist*. 60(1-2): 24-55. <http://hdl.handle.net/2027/spo.0497763.0060.104>

Sánchez KF, Huntley N, Duffy MA, Hunter MD (2019) Toxins or Medicines? Algal diets mediate parasitism in a freshwater host-parasite system. *Proceedings of the Royal Society: Biology*. 286: 20182231

Jaja-Chimedza A, **Sanchez K**, Gantar M, Gibbs P, Schmale M, Berry J (2016) Carotenoid glycosides from cyanobacteria are teratogenic in the zebrafish (*Danio rerio*) embryo model of vertebrate development. *Chemosphere*. 174: 478-489. doi:10.1016/j.chemosphere.2017.01.145

Berry J, Roy U, Jaja-Chimedza A, **Sanchez K**, Matysik J, Alia A (2016) High-resolution magic angle spinning nuclear magnetic resonance of intact zebrafish embryos detects metabolic changes following exposure to teratogenic polymethoxyalkenes from algae. *Zebrafish*. doi:10.1089/zeb.2016.1280.

Jaja-Chimedza A, Saez C, **Sanchez K**, Berry J (2015) Identification of teratogenic polymethoxy-1-alkenes from *Cylindrospermopsis raciborskii*, and taxonomically diverse freshwater cyanobacteria and green algae. *Harmful Algae* 49:156-161. doi: 10.1016/j.hal.2015.09.010.

PROFESSIONAL PRESENTATIONS

- November 15, 2023 (Invited seminar) *Toxins or medicines? Exploring the mechanisms of medicinal diets in an aquatic host-parasite system.* Ecology Colloquium, Institute of Zoology, Universität zu Köln
- August 18, 2022 (Oral presentation) *Infectivity of the parasite *Metschnikowia bicuspidata* is decreased by time spent as a transmission spore, but exposure to phycotoxins in the water column has no effect.* Ecological Society of America & Canadian Society for Ecology and Evolution meeting, Montreal, QC, Canada
- February 4, 2022 (Invited Panelist) *Diversity, Equity, and Inclusivity in EEB.* Recruitment weekend Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, MI.
- February 5, 2021 (Invited Panelist) *Diversity, Equity, and Inclusivity in EEB.* Recruitment weekend Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, MI.
- October 2, 2020 (Invited Panelist) *Graduate Research Fellowship Program (GRFP) Information panel for EEB.* Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, MI
- February 7, 2020 (Invited Panelist) *Frontier's Program Information Panel.* Recruitment weekend Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, MI.
- December 11, 2019 (Poster) *Exposure and length of exposure to cyanotoxins decreases infectivity and virulence of transmission spores of a fungal parasite of *Daphnia* spp.* British Ecological Society, Belfast, Northern Ireland
- August 10, 2018 (Oral presentation) *Toxins or medicines? Algal diets mediate parasitism in a freshwater host-parasite system.* Ecological Society of America Conference, New Orleans, LA
- April 14, 2017 (Oral presentation) *Pick your poison: Algal resources mediate parasitism in an invertebrate system.* Benthic Ecology Meeting, Myrtle Beach, SC
- September 19, 2016 (Invited Panelist) *First Year Graduate Women in Science.* University of Michigan Women in Science and Engineering (WISE) Welcome Dinner, Ann Arbor, MI.
- August 12, 2016 (Poster) *Effects of Nutrient Composition and Source on Periphyton Blooms in Lake Torch, MI.* Ecological Society of America Conference, Fort Lauderdale, FL.

April 8, 2013

(Poster) *Comparison study of volatile components extracted from Rhizophora mangle L. bark, leaves, and roots in Biscayne Bay, Florida.* American Chemistry Society Conference, New Orleans, LA.

HONORS, AWARDS, AND RECOGNITION:

- 2023 Michigan Botanical Society Isobel Dickinson Memorial Award (\$250), given to the best student-authored paper published in a given volume of *The Great Lakes Botanist*
- 2023 IGB Promising Early Career Post-Doctoral Fellowship Program
- 2022 Rackham Graduate Student Research Grant (\$3,000)
- 2022 Rackham International Travel Grant (\$1,050)
- 2022 Ecology and Evolutionary Biology Department JEDI Award (\$500) for general contributions in advancing JEDI in the field of Ecology and Evolutionary Biology
- 2022 Ecology and Evolutionary Biology Department Block Grant (\$2,298)
- 2021 Ecology and Evolutionary Biology Department JEDI Award for BioBlitz (\$500)
Co-organizers: Clarisse Betancourt, Tiffany Carey, Naim Edwards, Michelle Fearon, Gordon Fitch, Emily Laub, Jonathan Morris, Nicholas Medina, Beatriz Otero-Jimenez, Meagan Simmons.
- 2021 Honorable Mention, Ecology and Evolutionary Biology Department JEDI Award
- 2020 CRLT Faculty Development Fund Grant for “Coloring Science” (\$10,000)
Co-Authors: Vincent Deneff, Nyeema Harris, Jo Kurdziel, Nathan Sadowsky & Chatura Vaidya.
- 2019 Ecology and Evolutionary Biology Department Block Grant (\$1,862)
- 2019 Rackham International Travel Grant (\$1,050)
- 2019 Rackham Graduate School Scholar-Activist Award
- 2018 Ecology and Evolutionary Biology Department Block Grant (\$1,993)
- 2017 National Science Foundation Graduate Research Fellowship Program
- 2017 Rackham Merit Fellowship
- 2017 Honorable Mention, Ford Fellowship
- 2017 Rackham International Travel Grant (\$1,050)
- 2017 Ecology and Evolutionary Biology Department Block Grant (\$2,287)
- 2016 Rackham Graduate Student Research Grant. (\$1,500)
- 2016 Ecology and Evolutionary Biology Department Block Grant. (\$2,192)
- 2012 NIH National Center for Minority Health and Health Disparities Research and Travel Award. (\$5,000)

OUTREACH/VOLUNTEER ACTIVITIES

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| March 2023 | Feria de Ciencia at En Nuestra Lengua. Ann Arbor, MI Organizer |
| April 2022 | Friends of the Rouge Benthic Macroinvertebrate Monitoring. Canton, MI. Field scientist volunteer |
| March 2022 | Feria de Ciencia at En Nuestra Lengua. Ann Arbor, MI Organizer |
| November 2021 | Graduate School Application Feedback grad student- undergrad match program for STEM students. Ann Arbor, MI Organizer |
| October 2021 | Project Inspire Workshop. Ann Arbor, MI Organizer |
| March 2021 | Virtual Feria de Ciencias at En Nuestra Lengua. Ann Arbor, MI Organizer |
| June 2020 | EcoDia at Finca Irlanda. Chiapas, Mexico Booklet editor |
| March 2020 | Feria de Ciencia at En Nuestra Lengua. Ann Arbor, MI Organizer |
| June 2019 | EcoDia at Finca Irlanda. Chiapas, Mexico Organizer, field scientist volunteer |
| May 2019 | BioBlitz biodiversity survey at D-Town Farm. Detroit, MI. Organizing committee member, field scientist volunteer |
| March 2019 | Feria de Ciencias at En Nuestra Lengua. Ann Arbor, MI Organizer |
| June 2018 | Feria de Ciencias at En Nuestra Lengua. Ann Arbor, MI Organizer |
| May 2018 | BioBlitz biodiversity survey at D-Town Farm. Detroit, MI. Organizing committee member, field scientist volunteer |
| October 2017 | MC² Michigan and the Climate Crisis University of Michigan Bicentennial celebration event. Ann Arbor, MI Organizing committee member |
| June 2017 | EcoDia at Finca Irlanda. Chiapas, Mexico Organizer, field scientist volunteer |
| May 2017 | BioBlitz biodiversity survey at D-Town Farm. Detroit, MI Field scientist volunteer |
| September 2016-Present | En Nuestra Lengua. Ann Arbor, MI. Volunteer |
| May 2016 | BioBlitz biodiversity survey at D-Town Farm. Detroit, MI. Field scientist volunteer |
| May 2013-June 2013 | FIU Peer Lead Team Learning (PLTL) Leader. Florida International University, Miami, FL. Tutor |
| October 2012-June 2014 | FIU Biscayne Bay Campus (BBC) Science Club Nano-Einstein Program. Florida International University, Miami, FL. Mentor for 1 st grade class |

ACADEMIC SERVICE

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| March 2024 | Reviewer for Freshwater Biology Journal |
| 2021-2022 | Graduate Researchers of Ecology and Evolutionary Biology (GREEBs) President |
| 2021-2022 | SACNAS Chapter University of Michigan Outreach co-chair |
| February 2022 | Reviewer for Hydrobiologia Journal |
| March 2021 | Reviewer for Harmful Algae Journal |
| 2020-2021 | Executive committee member, Ecology and Evolutionary Biology Department – University of Michigan |
| Fall 2020 | President’s Postdoctoral Fellowship Program (PPFP) search committee student member |
| July 2020 | Reviewer for Ecological Research Journal |
| Winter 2020 | LSA Collegiate Fellows Program search committee student member |
| 2018-2020 | Justice, Equity, Diversity and Inclusion committee member, Ecology and Evolutionary Biology Department – University of Michigan |
| Winter 2018 | LSA Collegiate Fellows Program search committee student member |
| 2017-2018 | Tuesday Seminar Coordinator, Ecology and Evolutionary Biology Department – University of Michigan |

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Chemistry Society
Ecological Society of America
Association for Tropical Biology and Conservation
British Ecological Society

MASTERS STUDENTS MENTORED

| Name | College & Year |
|----------------|-----------------------------------|
| Fabian Flücken | University of Regensburg, Current |
| Sarah Lauck | University of Postdam, Current |

UNDERGRADUATE STUDENTS MENTORED

| Name | College & Year |
|-------------|------------------------------|
| Kendall Ash | University of Michigan, 2023 |

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| Jenna Petri | University of Michigan, 2023 |
| Anna Zhao | University of Michigan, 2022 |
| Aniqa Maisha | University of Michigan, 2022 |
| Morgan Bates | University of Michigan, 2021 |
| Kathryn Sullivan | University of Michigan, 2020 |
| Baili Zhong | Pomona College, 2019 (REU) |
| Jorge Agudelo | Florida International University, 2019 (REU) |
| Seeta Goyal | University of Michigan, 2019 |
| Mia McPherson | Michigan State University, 2018 (REU) |
| Alliyah Lusuegro | Swarthmore College, 2018 (REU) |
| Karana Wickens | University of Michigan, 2017 |
| Gabby Vargas | Wesleyan University, 2016 (REU) |
| Naomi Huntley | University of Michigan, 2016 |
| Felipe Akihiro Otsuka | Arizona State University, 2015 (REU) |

RELEVANT COURSEWORK

University of Michigan, Graduate (Ph.D. & M.S.)

Field Ecology, Limnology, Molecular Approaches in Ecology and Evolutionary Biology, Natural Resources Statistics, Population and Community Ecology, Principles in Evolution, Modeling for Ecology and Evolutionary Biology, Complex Systems in Ecology, Critical Perspectives in Science, Professional Development-Writing and Speaking in the Sciences.

Florida International University (B.S.)

Ecology, Cell Biology, Genetics, Evolution, Analytical Chemistry, Biological Organic Chemistry, Plant Life History, Biogeography, Coastal Conservation, Marine Community Ecology, Biological Chemistry, Neurobiology, Molecular Ecology, Comparative Vertebrate Analysis.