Terese Maxine P. Cruz

Postgraduate Researcher – University of Arizona, School of Natural Resources & the Environment

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ACADEMIC BACKGROUND

2019-23 **University of Arizona**

- B.S. Ecology & Evolutionary Biology (Cumulative GPA 3.65)
- Minor: Mathematics

RESEARCH EXPERIENCE

2023- **Postgraduate Researcher** *for Dr. Kathleen Prudic, School of Natural Resources & the Environment, University of Arizona, Tucson, AZ.*

- Collaborating with Dr. Stephen Buchanan on a bee and hostplant distribution project (*Centris pallida*).
- Organizing NSF-HDR grant courses and publication content.
- Assisting with BioDiversity interns' lesson development for 9th grade students.
- [Other pending]

2023 **Research Assistant** *for Dr. Peter Ellsworth, Department of Entomology, University of Arizona – Maricopa Agricultural Center, Maricopa, AZ.*

- Assisted in field bioassays on efficacy and non-target effects of insecticides and transgenic cotton, including regulated trials).
- Participated in Field Day events; helped organize and educate the public on proper IPM practices.
- Counted and identified cotton pests and beneficial arthropods.
- Performed scientific data collections and arthropod sampling.
- Conducted infestation of arthropods (Whiteflies) into field cages to measure non-target impacts of genetically modified cotton.
- Supported guayule field trials investigating flea beetle control and damage.
- Entered and proofed data.

2022-23 **Teaching Assistant** *for Dr. Ellen Bledsoe & Dr. Kathleen Prudic, School of Natural Resources & the Environment, University of Arizona, Tucson, AZ.*

- Assisted students with debugging in R/RStudio and navigating GitHub.
- Graded coding and discussion assignments.
- Held office hours when needed or requested.
- WFSC 223: Dealing with Data in the Wild / RNR 496: Applied Data Science / RNR 620: Ecological Data in R

2022-23 **Research Assistant** *for Dr. Kathleen Prudic, School of Natural Resources & the Environment, University of Arizona, Tucson, AZ.*

- Collaborating with Dr. Stephen Buchanan on a bee project (*Centris pallida*).
- Designed a research project for SUnMaRC with student using National Park Service (NPS) and U.S. Geological Survey (USGS) data from Saguaro National Park, Tucson, AZ.
- Constructed R Shiny webpage of Arizona Monarch occurrences for U.S. Fish and Wildlife Service (USFWS) conservation planning and outreach programs.
- Provided support at weekly UA library R Sessions to assist with debugging and workshops.

- Assisted with data entry and organizational activities.

2022 **Applied International Development Economics (AIDE) Intern** *for Dr. Anna Josephson, Dr. Jeffrey Michler, Dr. April Athnos, & Lorin Rudin-Rush, Department of Agricultural & Resource Economics, University of Arizona, Tucson, AZ.*

- Analyzed High-Frequency Phone Survey (HFPS) data from the World Bank using Stata.
- Focused on data from Uganda and examined effects of COVID-19 on choice of major crops planted, and its relation to the food insecurity experience score (FIES) count.
- Collaborated with students from other departments to generate a poster.

2021-23 **Research Assistant** *for Dr. Yves Carriére, Department of Entomology, University of Arizona, Tucson, AZ.*

- Assisted with hands-on experience in insect colony rearing (*Helicoverpa zea).*
- Performed arthropod diet preparation, sex identification, and VIP/MVP toxin overlays.
- Trained new hires.

2021 **Math Tutor** *for THINKTANK, Bartlett Academic Success Center, University of Arizona, Tucson, AZ.*

- Tutored students in Calculus I and II.
- Participated in team-building exercises and leadership trainings.

2020-21 **Arizona NASA Space Grant Intern** *for Dr. Kathleen Prudic & Dr. Katherine Gerst, School of Natural Resources & the Environment, University of Arizona, Tucson, AZ.*

- Conducted preliminary research on *Apis* spp., *Bombus* spp., and six Lepidopteran families to compare species biodiversity between urban and garden areas in Tucson, AZ.
- Developed R script used for sampling and permutation tests.
- Utilized RStudio and Github to organize and visualize iNaturalist and USA-NPN datasets.
- Designed and published a pollinator field guide to support community education on biodiversity and species conservation at the UofA Arboretum.
- Presented research at Arizona NASA Space Grant statewide symposium.

2019-21 **Research Assistant** *for Dr. Peter Ellsworth & Isadora Bordini, Department of Entomology, University of Arizona – Maricopa Agricultural Center, Maricopa, AZ.*

- Assisted in field bioassays on efficacy and non-target effects of insecticides and transgenic cotton, including regulated trials).
- Counted and identified cotton pest and beneficial arthropods.
- Performed scientific data collections and arthropod sampling.
- Conducted infestation of arthropods (Lygus and Whiteflies) into field cages to measure non-target impacts of a newly genetically modified cotton.
- Maintained insect colonies (*Lygus hesperus*) and research plots.
- Supported guayule field trials investigating flea beetle control and damage.
- Entered and proofed data.

2018 **Project Puente Intern** *for Dr. Peter Ellsworth & Isadora Bordini, Department of Entomology, University of Arizona – Maricopa Agricultural Center, Maricopa, AZ.*

- Assessed the effects of a new transgenic Bt cotton (ThryvOn cotton) on Western Flower thrips (*Frankliniella occidentalis*) populations.

- Assisted in developing methodologies for effective thrips sampling by determining optimal sticky trap configuration, cotton flower form, and time of day for collection.
- Designed kits with cotton predators to support outreach efforts in Cotton Integrated Pest Management.
- Presented project to USDA and UofA researchers.

OTHER SKILLS

R (programming) / RStudio / Git / GitHub / Python / Microsoft / Stata / Wolfram Mathematica / English (proficient) / Tagalog (proficient) / Spanish (beginner).

GRANTS & HONORS

2022 Academic Year Academic Distinction, UA
2022 Dean's List with Distinction, UA
2019 Arizona NASA Space Grant, UA
2020 Academic Year Academic Distinction, UA
2020 Dean's List with Distinction, UA
2019-22 Wildcat Distinction Scholarship, UA, $9000 ($36000 total)
2019-22 Pinal 40 Scholarship, $2000 ($8000 total)
2019 Dean's List, UA
2019 Dean's Exemplary Award, UA, $2000
2019 Bridgestone Americas Scholarship, National Merit Corporation, $4000
2018 Project Puente internship, CAC / UA

PUBLICATIONS & PROJECTS

[2023 project to be published in progress!]

Prudic K. L., **Cruz T. M. P.**, Winzer J. I. B., Oliver J. C., Melkonoff N. A., Verbais H., & Hogan A. (2022). Botanical Gardens Are Local Hotspots for Urban Butterflies in Arid Environments. *Insects*, *13*(10), 865. https://doi.org/10.3390/insects13100865

Cruz T. M. P., & Prudic K. L. (2021). University of Arizona Pollinator Field Guide. iNaturalist. https://www.inaturalist.org/guides/13093

Cruz T. M. P., Gerst K. L., & Prudic K. L. (2021). Urban Biodiversity Life Rafts: A Way to Conserve our Pollinators. University of Arizona. https://doi.org/10.25422/azu.data.16905061

ACADEMIC PRESENTATIONS

04/16/2023. **Cruz, T. M. P.**; Hoy, D. *An Analysis of Water Data in Saguaro National Park*. Southern Undergraduate Mathematics Research Conference (SUnMaRC), Colorado State University, CO. PowerPoint.

04/17/2021. **Cruz, T. M. P.**; Gerst, K. L.; Prudic, K. L. *Urban Biodiversity Life Rafts: A Way to Conserve our Pollinators*. Arizona NASA Space Grant Symposium, University of Arizona, AZ. PowerPoint.

07/21/2018. **Cruz, T. M. P.**; Bordini, I.; Ellsworth, P. C. *Thrips in Cotton: Friend or Foe*. Project Puente internship. University of Arizona, Maricopa Agricultural Center. Poster.

AFFILIATIONS

2022-2023 MathCats (UArizona Mathematics club)
2021-2023 Alpha Epsilon (Honor Society of Agricultural Engineering)
2019-2020 Women's Ultimate club sport
2019-2020 MycoCats (UArizona Mushroom club)
2019-2020 Controlled Environment Agriculture Student Association