

Isaac Natanael Aguilar Rivera

Graduate Student Researcher
Division of Geological & Planetary Sciences
California Institute of Technology

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Pasadena, CA

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY | GPA: 3.7
Double Major
B.S. Molecular Environmental Biology | Biodiversity
B.S. Ecosystem Management and Forestry | Natural Resource Management
Minor in Geospatial Information Science & Technology
BERKELEY, CA
conferred Dec. 2022

HONORS THESIS
ESTACIÓN CIENTÍFICA LAS JOYAS, JALISCO
Monitoring Biodiversity with Environmental DNA and Camera Traps in the Sierra de Manantlán
Advisors: Arthur Middleton, Juan Pablo Esparza-Carlos (U. Guadalajara), Rachel Meyer (UCSC)

RESEARCH & EXPERIENCE

GEOLOGICAL & PLANETARY SCIENCES | CALTECH
Graduate Student Researcher (MS)
Advisors: Julia Tejada, George Rossman, Claire Bucholz, François Tissot
PASADENA, CA
AUG 2024 – PRESENT

- Community-engaged Eaton Fire Ash study across sampling, analysis, and actionable results
- Student ambassador for tabling at community events, local classroom visits, & field trips

ECOLOGY & EVOLUTIONARY BIOLOGY | UC LOS ANGELES
Lab Technician and PANGEA Project Coordinator
Supervisor: Elsa Ordway
LOS ANGELES, CA
NOV 2023 – AUG 2024

- Co-manage science team & campaign logistics with inclusive community engagement
- Prepare briefings, book conference venues & accommodations, event media promotion, etc.

ECOLOGY, EVOLUTION, & BEHAVIOR | UC SAN DIEGO
Argentine Ant Eradication Project Field Assistant
Supervisor: David Holway
SAN CLEMENTE ISLAND, CA
APR – OCT 2023

ESSIG MUSEUM OF ENTOMOLOGY | UC BERKELEY
Collections & Imagery Assistant
Supervisor: Peter Oboyski
BERKELEY, CA
FEB 2019 – DEC 2022

ARCTIC BIOLOGY | UNIVERSITY OF AK, FAIRBANKS
Spatial and Environmental Data Center Technician
Supervisor: Amanda Young
TOOLIK FIELD STATION, AK
JUN – AUG 2022

INTEGRATIVE BIOLOGY | UC BERKELEY
175LF Biology & Geomorphology of Tropical Islands Student Resident
Advisors: Stephanie Carlson, George Roderick, Seth Finnegan, & Brent Mishler
MO'OREA, FR POLYNESIA
AUG – DEC 2021

ECOLOGY & EVOLUTIONARY BIOLOGY | UC SANTA CRUZ
Doris Duke Conservation Scholar Summer Intern
Advisors: Patrick Robinson, Claire Nasr, Daniel Costa, Abe Borker, & Erika Zavaleta
AÑO NUEVO ISLAND, CA
MAY – AUG 2021

SKILLS & ABILITIES

Languages: English and Spanish (Native Fluency); French and Portuguese (Rudimentary)

Software: RStudio, ArcGIS Pro, QGIS, ENVI, Earth Engine, Adobe, Jupyter, Python, Bash, Excel

PUBLICATIONS

1. **Aguilar, I.N.**, T. Tacail, M. Wronkiewicz, C. Parker, M. McDowell, F. Tissot, C. Bucholz, J.L. Tejada, and G. Rossman. 2026. Metals in Outdoor Ashes from the January 2025 Eaton Fire. *Environmental Science & Technology*. In preparation.
2. Ordway, E.M., M.M. Keller, M. Longo, R. Negron-juarez, Y. Feng, H. Stouter, **I.N. Aguilar-rivera**, A. Alencar, A. Bey, R.K. Braghieri, A. Cardoso, K.D. Chadwick, J.D. Fuentes, R. Eckert, L. Fatoyinbo, A. Ferraz, L. Guild, M.S. Johnson, E. Kane, L.S. Koutika, Y. Li, J. Liu, I.B. Mccubbin, F. Meunier, C.E. Miller, H.C. Muller-landau, T. Nkuintchua, M. Nunes, L.B.S. Takougoum, M.J. Santos, F.D. Schneider, M. Simard, B. Sonke, C. Terrer, M. Von essen, M.Y. Wong, S.R. Worden, X. Xiao, V. Zaunbrecher, M. Bauters, P. Boeckx, J. Bowen, I. Chiari, O. Csillik, G. Diez, M. Doroso, D.D. Pugley, W. Hubau, A.E. Ochoa, E. Gora, A. Hoyt, J.C. Jintiach, V. Maque, C. Perryman, Z. Pierrat, L. Saraiva, D. Singh, I. Tanshi, J. Thompson, and H. Verbeeck. 2025. The PANGAEA Scoping Study Final Report. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAAC/2405>
3. **Aguilar, I.N.** 2022. Distribution of Avifauna in a Heterogeneous Tropical Pacific Island Forest. *Perennial: The Undergraduate Environmental Journal of Berkeley* 4: 41-65. https://issuu.com/berkeleyperennial/docs/issue_4/62

DATASETS

1. Wronkiewicz, M., Parker, C. W., Ochoa, F., Coleman, R. W., **Aguilar, Isaac N.**, Okin, G. S., Chadwick, K. D., & Brodrick, P. G. (2025). Eaton Fire Ash Mapping and Analysis: Field Spectroscopy (v1.0.0) [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.16538735>
2. Hupert, C., Kade, A., Beaudreault, S., Murthy, A., Noguera, J., Nugteren, A., Rauch, R., Schas, J., Van Dam, B., Funck, J., McPherson, R., Wesolowski, D., Vicich, K., Semnacher, C., Aguirre, D., **Aguilar, Isaac N.**, Chandar Kouba, M., Bleeker, C., de Sobrino, S., Forester, L., Melendez-Gonzalez, M., Jackson, A., & Young, A. (2024). Plant phenology of species in moist acidic tundra around Toolik Field Station, Alaska (2007–2024). Arctic Data Center. <urn:uuid:846b522d-0a55-49e1-afa4-70a2570f03e0>
3. Kade, A., Beaudreault, S., Funck, J., Murthy, A., Noguera, J., Nugteren, A., Rauch, R., Van Dam, B., Wesolowski, D., Vicich, K., Semnacher, C., Aguirre, D., **Aguilar, Isaac N.**, Chandar Kouba, M., Bleeker, C., de Sobrino, S., Forester, L., Melendez-Gonzalez, M., Jackson, A., & Young, A. (2024). Plant phenology of species in dry heath tundra around Toolik Field Station, Alaska (2011–2024). Arctic Data Center. <urn:uuid:8f7fa9a7-9e84-4229-a09c-3cd87437675b>

PODCASTS & MEDIA

1. Ehlert Nair, Julia. Jun 09 2025. Episode 3: Lead in the Environment, an Update. After the Fires. In Caltech Science Exchange. **Caltech Connect**. <https://scienceexchange.caltech.edu/connect/after-the-fires>
2. Feltman, Rachel and Ashleigh Papp. Dec 18 2024. Can a New Generation of Conservationists make the Field more Accessible. In Science Quickly. **Scientific American**. <https://www.scientificamerican.com/podcast/episode/can-a-new-generation-of-conservationists-make-the-field-more-accessible/>
3. Aguilar, Isaac. Jul 01 2022. **Toolik Field Station Naturalist Journal**. Spatial & Environmental Data Center. <https://www.uaf.edu/toolik/edc/journal/index.php?date=2022-07-01>.

MENTORSHIP & OUTREACH

TEACHING ASSISTANT | CALTECH INTRO TO GEOBIOLOGY DEC 2025 – PRESENT

- Develop engaging earth science lab exercises for senior undergraduates and graduate students
- Plan and guide overnight field trip in remote CA desert setting for 20-30 participants

STUDENT AMBASSADOR | CALTECH GO OUTDOORS AUG 2024 – PRESENT

- Develop engaging earth science activities and lesson plans for in-classroom and outdoor education
- Direct guided hikes in urban natural reserves for outdoor enrichment and environmental connection

PGC ALUMNI ADVISORY BOARD | TURNING GREEN MAY 2017 – PRESENT

- Mentorship and outreach for international network of students in conservation and sustainability

PEER ADVISOR | BERKELEY CNR ADVISING AUG 2020 – DEC 2022

- Provided academic & professional advice for 2,000+ EMF, MEB, GIST, and other CNR students
- Engaged in advising trainings, public campus events, and college student orientation and socials

PRESIDENT | THE WILDLIFE SOCIETY AT BERKELEY AUG 2020 – DEC 2022

- Started a student chapter of TWS to develop an inclusive community of wildlife enthusiasts
- Awarded a \$3,725 grant to increase accessibility to professional and academic development events

STUDENT REP. | CHANCELLOR'S ADVISORY COMMITTEE. JAN 2020 – MAY 2022

- Working group to strategize solutions for diversity, equity, and inclusion in sustainability initiatives

STUDENT REP. | RCNR DEAN'S ADVISORY COMMITTEE JAN 2022 – MAY 2022

- Developed strategic educational and research initiatives for undergraduate student success

STUDENT MENTOR | BRIDGING BERKELEY AUG 2020 – MAY 2021

- Tutored two local 6th grade mentees with academic support and transitioning to virtual learning

WRITER | STUDENT ENVIRONMENTAL RESOURCE CENTER AUG 2020 – MAY 2021

- Proposed, researched, and wrote articles on ecology and conservation for the virtual news platform
- Engaged in bi-weekly meetings for writing and professional development training

RESIDENTIAL ASSISTANT | UC BERKELEY RESLIFE AUG 2019 – DEC 2020

- Provided holistic safety monitoring and social support for 60 first-year student residents
- Monitored security for 1,000+ students in an urban residential complex w/ nightly round inspections

TREASURER | CAL FORESTRY CLUB AUG 2020 – DEC 2020

- Managed student organization funds for professional and community development events.

STUDENT ASSISTANT | ROSIE THE RIVETER N. HISTORIC PARK FEB – MAR 2020

- Led groups of 20-30 local 4th grade students and chaperones through guided tours and activities

CAMP COUNSELOR | NATUREBRIDGE COASTAL CAMP MAY – AUG 2019

- Led and supervise 10-20 campers through hikes, naturalist tours, and outdoor education activities
- Assisted educators in lesson plan creation, outdoor risk management, and overnight trip planning.

STUDENT VOLUNTEER | FRIENDS OF SAUSAL CREEK FEB – MAY 2019

- Assisted in riparian habitat restoration including public trail maintenance & invasive species removal
- Wrote an article on the Western Pond Turtle featured in the monthly newsletter

CONFERENCES & SYMPOSIA

1. American Chemical Society Annual Conference; **Atlanta, GA** Mar 2026
Oral: *Metals in Outdoor Ashes after the January 2025 Eaton Fire*
2. Western Association of Vertebrate Paleontologists; **Claremont, CA** Feb 2026
Poster: *X-Ray Fluorescence (XRF) for Museum Vertebrate Paleontology*
3. UCLA 1st Annual Los Angeles Fires Research Conference; **Los Angeles, CA** Jan 2026
Poster: *Metals in Outdoor Ashes after the 2025 Eaton Fire – Awarded Best Poster*
4. Geobiology Gordon Research Seminar; **Ventura, CA** Jan 2026
Poster: *X-Ray Fluorescence (XRF) for Museum Vertebrate Paleontology.*
5. California Center for Climate Change Education Palooza; **Culver City, CA** Sep 2025
Panelist: *Raices y Futuro Latino Conservation Week* at West Los Angeles College
6. Chapman University Eaton Fire Conference; **Los Angeles, CA** Jun 2025
Poster: *Assessing Environmental Impacts of WUI Ashes with Mineral Spectroscopy*
7. American Geophysical Union Annual Meeting; **Washington DC, USA** Dec 2024
Poster: *Scoping Study for a NASA Tropical Forest Terrestrial Ecology Field Campaign*
8. Global Land Programme 5th Open Science Meeting; **Oaxaca, Mexico** Nov 2024
Convener: *Best Practices for Community-Engaged Research in the Global Tropics*
9. Governor's Climate & Forests Task Force 14th Annual Meeting; **Ucayali, Peru** Oct 2024
Invited Oral: *Open comment announcement for PANGAEA Scoping White Paper*
10. PANGAEA and Governor's Climate and Forest Task Force Workshop; **Lima, Peru** Jun 2024
Coordinator & contributing speaker (ES): *Community-engaged research priorities*
11. NASA-NSF-INPE Extreme Weather Events in Amazonia Workshop; **Manaus, Brazil** May 2024
Invited Oral: *Inclusive community-engaged research in international scientific campaigns*
12. PANGAEA Research & Community Engagement Workshop; **Washington DC, USA** Apr 2024
Coordinator for 100-person meeting logistics, lodging, & translations (ES/FR/PR)
13. PANGAEA Research and Engagement Scoping Workshop; **Yaoundé, Cameroon** Feb 2024
Coordinator for 90-person meeting logistics, lodging, & translations (FR/ES)
14. Ecological Society of America Annual Meeting; **Portland, OR** Aug 2023
Oral: *Monitoring biodiversity with eDNA and camera traps in the Sierra de Manantlán*
15. SACNAS National Diversity in STEM Conference; **San Juan, Puerto Rico** Oct 2022
Poster: *Monitoring biodiversity with eDNA and camera traps in the Sierra de Manantlán*

AWARDS, FELLOWSHIPS, & GRANTS

Caltech GPS Eaton Fire Rapid Research Response Grant	est. \$5000	Jan 2025
NSF Graduate Research Fellowship Program Honorable Mention (2)	na	Apr 2024, '25
Caltech Geological and Planetary Sciences Faculty Fellowship Award	est. \$5000	Apr 2024
UC Berkeley Undergraduate Research Awards	\$2000	Mar 2022
UC Berkeley Travel Grants (3)	sum \$1800	Mar 2022
UC Berkeley Latinxs and the Environment Undergraduate Fellow	sum \$5000	Mar 2022
Cal Alumni Association's The Leadership Award	\$5000	Oct 2021
UC Berkeley College of Natural Resources Dineen Daniel Scholarship	\$5000	Oct 2021
UC Berkeley The Green Initiative Fund Student Organization Mini-Grant	\$3725	Jun 2020
UC Santa Cruz Doris Duke Conservation Scholar	est. \$8800	Apr 2020
UC Berkeley Undergraduate Scholarship	\$8000	Aug 2018

REFERENCES

Dr. Elsa Ordway,

Assistant Professor of Ecology & Evolutionary Biology
University of California, Los Angeles

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Dr. Amanda Young

Director of the Toolik Field Station Spatial & Environmental Data Center
University of Alaska, Fairbanks

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Dr. Abe Borker

Assistant Teaching Professor of Ecology & Evolutionary Biology
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