

Flor Vanessa Maciel

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Education

University of California Los Angeles **June 2027**

Doctor of Philosophy in Atmospheric and Oceanic Sciences

San José State University **Aug. 2022**

Master of Science in Meteorology

Thesis: *"The Influence of Aerosols on Ice and Mixed-phase Clouds Based on In Situ Observations and CAM6 Simulations"*

University of California, Santa Cruz **June 2019**

Earth Sciences BS & Environmental Studies BA

Senior Thesis: *"The Influence of Stratospheric Aerosol Geoengineering on Earth's Climate System"*

Research Experience

Graduate Student Researcher **Aug. 2022 - Present**

Advisor: Dr. Jasper Kok, UCLA Aerosol-Climate Interactions Group, Los Angeles, CA

- Quantified size-resolved and mass concentration dust concentrations in the cold-cloud temperature regime using in-situ airborne observations from the Atmospheric Tomography Mission (ATom).
- Processed large datasets on Linux remote cluster and in local Python environment with Bash, NCO, and CDO to download, subset, and merge reanalysis datasets.
- Evaluated ATom observations against 5 global climate models (CESM, GISS, GOCART, IMPACT, MONARCH), a dust climatology (DustCOMM), and 2 reanalysis products (MERRA-2 and CAMS).

Graduate Student Researcher **Sept. 2020 - Aug. 2022**

Advisor: Dr. Minghui Diao, SJSU Cloud and Aerosol Group, San Jose, CA

- Researched the relationship between cirrus and mixed-phased clouds and aerosols.
- Quality controlled, with hourly-time series and images from 2DC probe, an in-situ dataset composed of 7 NSF flight campaigns.
- Used MATLAB to analyze datasets with PDFs, particle size distributions, geometric means, and to differentiate between cirrus cloud evolution phases and mixed-phase cloud transition phases.

Berkeley Lab Undergraduate Research Intern **June 2020 - Aug. 2020**

Advisor: Dr. Christina M. Patricola, Lawrence Berkeley National Lab, Berkeley, CA

- Used Python and NetCDF to organize, map and analyze model data of 5 past San Francisco storms under their historical climate conditions and under RCP8.5 end-century climate conditions on the National Energy and Research Scientific Computing's supercomputer, Cori.

- Wrote a final paper on the project and presented a poster virtually at the Berkeley Lab summer intern symposium.

Undergraduate Student Researcher

Oct. 2018 - June 2019

Advisor: Dr. Nicole Feldl, UCSC Climate Dynamics Lab, Santa Cruz, CA

- Developed a senior thesis project that explored the effects of stratospheric sulfate geoengineering on Earth's net shortwave radiation.
- Obtained data from NCAR's Stratospheric Aerosol Geoengineering Large Ensemble Project and organized it on a remote Linux server, which was connected to with PuTTY.
- Used Python to analyze the data with the Approximate Partial Radiative Perturbation method and mapped the results with the Cartopy package.
- Received a \$2000 scholarship from the Koret Foundation for this research and was named a Koret Scholar.
- Wrote a final and comprehensive thesis on the project.
- Presented a poster at AGU 2019 and at the Koret Research Slam.

Undergraduate Summer Research Intern

June 2018 - Sept. 2018

Advisor: Dr. Geeta Persad, Carnegie Science Department of Global Ecology, Stanford, CA

- Developed an independent research project on how aerosol emissions, from 8 previously identified countries, affect the precipitation rate in Indonesia.
- Read and synthesized academic papers related to research question to inform project.
- Used Python and NetCDF Operators to organize, analyze, and map data previously produced by advisor with NCAR's Community Atmosphere Model 5.
- Gave an oral presentation on the project results to the department.
- Presented a poster at the 2019 American Meteorological Society's student conference.

Peer-reviewed Publications

- **Maciel, F. V.**, Diao, M., & Yang, C. A. (2024). "Partition between supercooled liquid droplets and ice crystals in mixed-phase clouds based on airborne in situ observations." *Atmospheric Measurement Techniques*, 17(16), 4843–4861. <https://doi.org/10.5194/amt-17-4843-2024>.
- **Maciel, F. V.**, Diao, M., & Patnaude, R. (2023). "Examination of aerosol indirect effects during cirrus cloud evolution." *Atmospheric Chemistry and Physics*, <https://doi.org/10.5194/acp-23-1103-2023>.
- Patricola C. M., Wehner, M. F., Bercos-Hickey, E., **Maciel, F. V.**, May, K., Mak, M., Yip, O., Roche, A., & Leal, S. (2021). "Future Changes in Extreme Precipitation over the San Francisco Bay Area: Dependence on Atmospheric River and Extratropical Cyclone Events." *Weather and Climate Extremes*, <https://doi.org/10.1016/j.wace.2022.100440>.

Honors & Scholarships

- **Kuo-Nan Liou Endowed Graduate Fellowship**, Joint Institute for Regional Earth Systems Science and Engineering, Spring 2025
- **Center for Diverse Leadership in Science (CDLS) Fellowship**, UCLA Institute of the Environment and Sustainability, Fall 2023 & Fall 2024
- **Competitive Edge Fellowship**, UCLA Graduate Education, Summer 2022

- **Eugene V. Cota-Robles Fellowship**, UCLA Graduate Education, Summer 2022
- **Walker Scholarship**, SJSU Department of Meteorology and Climate Science, Fall 2020 & Fall 2021
- **Crown College Research Project Fund**, UCSC Crown College, Spring 2019
- **Koret Undergraduate Research Scholarship**, UCSC Honors and Research, Winter 2019
- **HSF Scholar**, Hispanic Scholar Federation, Winter 2019
- **Latinos in Technology Scholarship**, Silicon Valley Community Foundation, Winter 2017

Presentations

- Maciel, F. V., Kok, J. & Froyd, K. (2025, January). *Evaluating size-resolved dust concentrations in the mixed-phase cloud regime*. Oral presentation at the American Meteorological Society Annual Meeting, New Orleans, LA.
- Maciel, F. V., Kok, J. & Froyd, K. (2025, January). *Quantifying size-resolved dust concentrations in the mixed-phase cloud regime*. Poster presentation at the American Meteorological Society Annual Student Conference, New Orleans, LA.
- Maciel, F. V., Kok, J. & Froyd, K. (2024, May). *Quantifying the size-resolved dust concentrations at cirrus-forming heights*. Poster presentation at the UC Dust Symposium.
- Maciel, F. V., Diao, M., & Patnaude, R. (2022, August). *The respective aerosol indirect effects of five cirrus cloud evolution phases*. Oral presentation at the American Meteorological Society Collective Madison Meeting, Virtual.
- Maciel, F. V., Diao, M., Patnaude, R., Yang, C. A., Liu, X., & Zhao, X. (2022, January). *The influence of aerosols on ice and mixed-phase clouds based on in-situ observations and CAM6 simulations*. Oral presentation at the American Meteorological Society Annual Meeting, Virtual.
- Maciel, F. V., Diao, M., & Patnaude, R. (2021, December). *Influence of atmospheric aerosols on cirrus clouds based on in-situ observations*. Poster presentation at the American Geophysical Union Fall Meeting, Virtual.
- Maciel, F. V., & Diao, M. (2020, December). *The influence of anthropogenic aerosols on cirrus clouds determined from in-situ observations*. Poster presentation at the American Geophysical Union Fall Meeting, Virtual.
- Maciel, F. V., & Patricola, C. M. (2020, October). *Anthropogenic influences on extreme precipitation events over the San Francisco Bay Area in a high-resolution regional climate model*. Poster presentation at The Society for Advancement of Chicanos/Hispanics and Native Americans in Science Annual Conference, Virtual.
- Maciel, F. V., & Patricola, C. M. (2020, August). *Anthropogenic influences on extreme precipitation events over the San Francisco Bay Area in a high-resolution regional climate model*. Poster presentation at the LBNL Intern Research Symposium, Virtual.
- Maciel, F. V., & Feldl, N. (2019, December). *The shortwave cloud and surface albedo response to stratospheric sulfate aerosol geoengineering*. Poster presentation at the American Geophysical Union Fall Meeting, San Francisco, CA.
- Maciel, F. V., & Feldl, N. (2019, June). *The influence of stratospheric sulfate aerosol geoengineering on Earth's net shortwave radiation*. Poster presentation at the Koret Research Slam, Santa Cruz, CA.

- Maciel, F. V., & Persad, G. (2019, January). *The dependence of Indonesia's precipitation response to anthropogenic aerosols on emission location*. Poster presentation at the American Meteorological Society Annual Student Conference, Phoenix, AZ

Work Experience & Outreach

Air Pollution (AOS 2) TA

March 2025 - Present

Atmospheric and Oceanic Science Department, Los Angeles, CA

- Creating answer keys for homework assignments and grading submissions.
- Leading hybrid discussion sections where students work in groups to complete the discussion activity collaboratively.
- Holding office hours for students to ask questions on course material or assignments.
- Responding to student questions by email.

Early Career and Climate Resilience Fellow

Dec. 2024 - Present

Center for Diverse Leadership in Science (CDLS), Los Angeles, CA

- Leading a group of graduate students in mapping air quality during the 2025 LA fires, a project requested by community partner Esperanza Housing.
- Delegating tasks to group members based on project needs and individual strengths.
- Organizing and leading weekly virtual meetings to track progress, take notes, and have team members share updates.
- Assisting team members with questions and troubleshooting data-related challenges.
- Finding, downloading, and processing ground-based and satellite data for common wildfire air pollutants such as carbon monoxide, nitrogen dioxide, and particulate matter.
- Visualizing air quality data in ArcGIS with an emphasis on clarity for community use.

Social Media Chair

Sept. 2023 - Present

UCLA AOS Graduate Chi Epsilon Pi (XEP), Los Angeles, CA

- Creating flyers on community events.
- Posting updates and stories about upcoming community events on Instagram account.
- Sharing employment opportunities and field-specific news on a new LinkedIn group for current AOS graduate students, undergraduate students, and alumni.
- Designed two logos for the organization and held a vote to select the most popular one.

Intro. to Undergraduate Research (AOS 90) TA

March 2024 - June 2024

Atmospheric and Oceanic Science Department, Los Angeles, CA

- Graded homework assignments based on rubric provided by the Professor.
- Attended lecture during the week and prepared review slides based on material covered.
- Led discussion section where students work in groups to work on their weekly assignment.
- Held a weekly 2-hour "Homework Party" each Friday afternoon to help students having any trouble.

- Answered student questions during office hours and through Piazza.

Math Learning Skills Advisor

Sept. 2019 - Aug. 2020

UCSC Academic Excellence Program, Santa Cruz, CA

- Prepared curriculum and led ACE problem-solving sessions for lower-division calculus courses.
- Fostered a safe space for students to learn and facilitated collaborative learning between students.
- Served as a mentor to students that needed guidance in navigating the university resources.

Library Aerial Photo GIS Project Assistant

Oct. 2018 - Sept. 2019

UCSC Mchenry Library, Santa Cruz, CA

- Used ArcGIS to georectify the library's aerial photo indexes collection.
- Updated the indexes to be modern and easy to read.
- Assisted on instruction manual on the georectification process for future employees.

Learning Support Services Tutor

Oct. 2017 - Aug. 2019

UCSC Learning Support Services, Santa Cruz, CA

- Facilitated a collaborative learning environment during weekly sessions where students could interact with their peers and learn the course material together.
- Served as a peer mentor and role model for college success at UCSC.
- Past positions include Climate Statistics, Biostatistics, Introductory Chemistry I, and Introductory Physics II.

Crown & Merrill Student Sustainability Advisor

Sept. 2017 - June 2018

UCSC Sustainability Office, Santa Cruz, CA

- Created and implemented sustainability themed programs for housing residents of Crown and Merrill.
- Created flyers with Canva and share them across the residential housing area.
- Researched energy star appliances in campus housing to implement explicit policy on their procurement.

Professional Memberships & Societies

- UCLA AOS XEP, 2023 - present
- CDLS, 2023 – present
- American Meteorological Society, 2018 - present
- American Geophysical Union, 2019 - present