Flor Vanessa Maciel

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Education

San Jose State University **June 2022**
Master of Science in Meteorology

University of California Santa Cruz **June 2019**
Earth Sciences BS and Environmental Studies BA, honors

Research Interests

- Climate change's impact on the climate and weather, such as extreme precipitation or wildfires.
- The influence of air pollution, such as aerosols, on the climate.
- The mechanisms of pyro-cloud formation and their impacts on the weather.
- Aerosol-Cloud Interactions (ACI) and Aerosol-Radiation Interactions (ARI).

Research Experience

Graduate Student Researcher Sept. 2020 - Present
Advisor: Dr. Minghui Diao, San Jose State University, San Jose, CA

- Researching the relationship between cirrus clouds, specifically their evolution phase, and atmospheric aerosols.
- Coding with MATLAB to analyze a large in-situ dataset composed of seven NSF flight campaigns.
- Using CESM CAM6 to generate model data to compare with in-situ data.
- Reading and keeping up to date with relevant academic literature.

Berkeley Lab Undergraduate Research Intern June 2020 - Aug. 2020
Advisor: Dr. Christina M. Patricola, Lawrence Berkeley National Lab, Berkeley, CA

- Project aim was to inform the City of San Francisco how storms will change in the future due to climate change.
- 5 past storms were chosen previously to model under their historical climate conditions and under RCP8.5 end-century climate conditions.
- Used Python and NetCDF to organize, map and analyze the data on the National Energy and Research Scientific Computing's supercomputer, Cori.
- Wrote a final paper on the project.
- 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.
- Wrote a final and comprehensive thesis on the project.
- Received a $2000 scholarship from the Koret Foundation for this research and was named a Koret Scholar.
- Presented a poster at AGU 2019 and 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 identified countries, affect the precipitation rate in Indonesia.
- Used Python and Linux command line to organize, analyze, and map data previously produced by advisor with NCAR's Community Atmosphere Model 5.
- Read and synthesized academic papers related to research question to inform project.
- Gave an oral presentation on the finished project to the department.
- Gave a poster presentation at the AMS student conference.

Peer-reviewed Publications

- Patricola C. M., Michael F. Wehner, Emily Bercos-Hickey, **Flor Vanessa Maciel**, Kris May, Michael Mak, Olivia Yip, Anna Roche, and Susan Leal. (2021). "Future Changes in Extreme Precipitation over the San Francisco Bay Area: Dependence on Atmospheric River and Extratropical Cyclone Events." *in review*.

Presentations

- Maciel, F. V. & Minghui Diao. (2020, December). "The Influence of Anthropogenic Aerosols on Cirrus Clouds Determined from In-Situ Observations." Poster, *American Geophysical Union Fall Meeting*, Virtual.
- Maciel, F. V. & Christina M. Patricola. (2020, October). "Anthropogenic Influences on Extreme Precipitation Events over the San Francisco Bay Area in a High-Resolution Regional Climate Model." Poster, *SACNAS*, Virtual.
- Maciel, F. V. & Christina M. Patricola. (2020, August). "Anthropogenic Influences on Extreme Precipitation Events over the San Francisco Bay Area in a High-Resolution Regional Climate Model." Poster, *LBNL Intern Research Symposium*, Virtual.
- Maciel, F. V. & Nicole Feldl. (2019, December). "The Shortwave Cloud and Surface Albedo Response to Stratospheric Sulfate Aerosol Geoengineering." Poster, *American Geophysical Union Fall Meeting*, San Francisco, CA.
- Maciel, F. V. & Nicole Feldl. (2019, June). "The Influence of Stratospheric Sulfate Aerosol Geoengineering on Earth's Net Shortwave Radiation." Poster, *Koret Research Slam*, Santa Cruz, CA.

- Maciel, F. V. & Geeta Persad. (2019, January). "The Dependence of Indonesia's Precipitation Response to Anthropogenic Aerosols on Emission Location." Poster, *American Meteorological Society Annual Student Conference*, Phoenix, AZ

Relevant Coursework

- METR 240 – Numerical Modeling
- METR 215 – Advanced Physical Meteorology
- METR 205 – Advanced Atmospheric & Climate Dynamics
- METR 209 – Advanced Fire Weather
- METR 164 – Intro to Fire Weather
- METR 150 – Atmospheric Data Visualization
- EART 125 - Statistics & Data Analysis in the Geosciences
- EART 124 – Modeling Earth's Climate
- EART 119 – Introduction to Scientific Computing

Honors & Scholarships

- Walker Scholarship, *SJSU Department of Meteorology and Climate Science, Fall 2020*
- Crown College Research Project Fund, *UCSC Crown College, Spring 2019*
- Koret Undergraduate Research Scholarship, *UCSC Undergrad Honors and Research, Winter 2019*
- HSF Scholar, *Hispanic Scholar Federation, Winter 2019*
- Dean's Honors, *Spring 2016, Fall 2017, Winter 2018, Spring 2018, Spring 2019*
- Latinos in Technology Scholarship, *Silicon Valley Community Foundation, Winter 2017*

Professional Memberships & Societies

- American Meteorological Society, *2018 - present*
- American Geophysical Union, *2019 - present*
- SACNAS, *2019 - present*
- GeoLatinas, *2019 - present*

Work Experience

Math Learning Skills Advisor
Sept. 2019 - Aug. 2020

UCSC Academic Excellence Program, Santa Cruz, CA

- Preparing curriculum and leading ACE problem-solving sessions for lower-division calculus courses.
- Fostering a safe space for students to learn and facilitating collaborative learning between students.
- Serving as a mentor and helping students that need guidance in navigating the university.

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.
- Edited 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.
- Participated in weekly group meetings and food recovery pick-up and deliveries.

Climate Change Internship Sept. 2016 – Dec. 2016

Monterey Bay National Marine Sanctuary Exploration Center, Santa Cruz, CA

- Researched current knowledge on climate change.
- Wrote a document to explain it in simple terms for docents to easily understand and reference.