JESSICA WAN

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EDUCATION

2020 — Present	**PhD Oceanography**, Scripps Institution of Oceanography, University of California San Diego **GPA:** 3.97
2020 — 2021	**MS Oceanography**, Scripps Institution of Oceanography, University of California San Diego **GPA:** 3.97
2017 — 2020	**BS Environment & Sustainability with Distinction in Research** (concentration in Land, Air, and Water Resources), Cornell University **GPA:** 4.06

RESEARCH EXPERIENCE

2020 — Present	**Graduate Student Researcher**, Scripps Institution of Oceanography, University of California San Diego **Advisor:** Dr. Katharine Ricke *Modeling the far-reaching climate responses of regional geoengineering proposals*
2017 — 2020	**Undergraduate Student Researcher**, Department of Earth and Atmospheric Science, Cornell University **Advisors:** Dr. Douglas Hamilton and Dr. Natalie Mahowald *Improving Earth System Model representations of fire and dust aerosols for estimating climate*
2018	**Ecosystem Modeling Intern**, Gulf of Maine Research Institute **Advisor:** Dr. Katherine Mills *Investigating the ecological impacts for diadromous fish populations to rising temperature*
2017	**Undergraduate Student Researcher**, Department of Geology, Occidental College **Advisor:** Dr. Ann Blythe *Analyzing apatite fission-tracks for low-temperature thermochronology applications*

AWARDS & FELLOWSHIPS

2024	NDSEG 5th Annual Conference Honorable Mention for Presentation in Oceanography
2023	Achievement Rewards for College Scientists (ARCS) Foundation Fellowship
2023	Scripps Student Symposium Outstanding Presenter Award
2022	National Defense Science and Engineering Graduate (NDSEG) Fellowship
2020	Scripps Fellowship

PUBLICATIONS

GOOGLE SCHOLAR | ORCID: HTTPS://ORCID.ORG/0000-0003-3757-6436

In prep/Submitted	
(2024)	**Wan, J.S.**, Fasullo, J.T., Rosenbloom, N., Chen, C.C., Ricke, K.: Targeted marine cloud brightening can dampen El Niño. Submitted.
(2024)	Xing, C., Stevenson, S., Fasullo, J., Harrison, C., Chen, C.C., **Wan, J.S.**, Coupe, J., Pfleger, C.: Subtropical Marine Cloud Brightening Suppresses the El Niño-Southern Oscillation. Submitted.
In prep	Ricke, K., Khanna, G., **Wan, J.S.**, Lunghi, J., Grigoryeva, I.: Global Migration Response to Climate and Climate Change. In prep.
Accepted/Published	
2024	**Wan, J. S.**, Chen, C. C., Tilmes, S., Luongo, M. T., Richter, J. H., Ricke, K. 2024. Diminished efficacy of regional marine cloud brightening in a warmer world. Nature Climate Change. DOI: 10.1038/s41558-024-02046-7
2024	Feingold, G., **et al.** . 2024. Physical science research needed to evaluate the viability and risks of marine cloud brightening. Sci. Adv.10, eadi8594. DOI:10.1126/sciadv.adi8594
2023	Shah, S. H., O'Lenick, C. R., **Wan, J. S.**, et al. 2023. Connecting Physical and Social Science Datasets: Challenges and Pathways Forward. Environmental Research Communications, 5, 095007. https://doi.org/10.1088/2515-7620/acf6b4
2023	Ricke, K., **Wan J.S.**, Saenger ,M., Lutsko, N.J. 2023. Hydrological Consequences of Solar Geoengineering. Annual Review of Earth and Planetary Sciences. 51(1). https://doi.org/10.1146/annurev-earth-031920-083456
2022	Feingold G., V. P. Ghate, L. M. Russell, **et al.** 2022. DOE-NOAA Marine Cloud Brightening Workshop. U.S. Department of Energy and U.S. Department of Commerce NOAA; DOE/SC-0207; NOAA Technical Report OAR ESRL/CSL-1
2022	Li, L., Mahowald, N. M., Kok, J. F., Liu, X., Wu, M., Leung, D. M., Hamilton, D. S., Emmons, L. K., Huang, Y., Sexton, N., Meng, J., and **Wan, J.** 2022: Importance of different parameterization changes for the updated dust cycle modeling in the Community Atmosphere Model (version 6.1), Geosci. Model Dev., 15, 8181–8219, https://doi.org/10.5194/gmd-15-8181-2022
2021	Kok, J. F., Adebiyi, A. A., Albani, S., Balkanski, Y., Checa-Garcia, R., Chin, M., **et al.** 2021. Contribution of the world's main dust source regions to the global cycle of desert dust. Atmospheric Chemistry and Physics, 21(10), 8169–8193. https://doi.org/10.5194/acp-21-8169-2021
2021	Kok, J. F., Adebiyi, A. A., Albani, S., Balkanski, Y., Checa-Garcia, R., Chin, M., **et al.** 2021. Improved representation of the global dust cycle using observational constraints on dust properties and abundance. Atmospheric Chemistry and Physics, 21(10), 8127–8167. https://doi.org/10.5194/acp-21-8127-2021
2021	**Wan, J. S.**, Hamilton, D. S., & Mahowald, N. M. 2021. Importance of Uncertainties in the Spatial Distribution of Preindustrial Wildfires for Estimating Aerosol Radiative Forcing. Geophysical Research Letters, 48, e2020GL089758. https://doi.org/10.1029/2020GL089758
2019	Hamilton, D. S., Scanza, R. A., Feng, Y., Guinness, J., Kok, J. F., Li, L., Liu, X., Rathod, S. D., **Wan, J. S.**, Wu, M., and Mahowald, N. M. 2019: Improved methodologies for Earth system modelling of atmospheric soluble iron and observation comparisons using the Mechanism of Intermediate complexity for Modelling Iron (MIMI v1.0), Geosci. Model Dev., 12, 3835–3862, https://doi.org/10.5194/gmd-12-3835-2019

PRESENTATIONS

Oral	
2024	**MEERTALKS [invited]**
2024	NDSEG Fellowship Program 5th Annual Conference
2024	CESM workshop 2024
2024	Climate Engineering Gordon Research Seminar
2024	**Solar Climate Intervention Virtual Symposium [invited]**
2023	Scripps Student Symposium
2023	CalGFD
2022	AGU Fall Meeting, GC16A: Advances in Solar Radiation Modification (SRM) Research II Oral
2022	NCAR Early Career Innovator Program PI Symposium
Poster	
2024	Climate Engineering Gordon Research Conference
2023	AGU Fall Meeting, A31K: Marine Cloud Brightening: Exploring Inadvertent and Deliberate Perturbations to Understand Aerosol-Cloud Interactions Poster
2023	NCAR|UCAR|UCP Student Poster Symposium
2022	Climate Engineering Gordon Research Conference & Seminar
2021	AGU Fall Meeting, GC45P: Environmental Changes and Human Migration: Advances in Modeling and Analysis II Poster [virtual]
2020	AGU Fall Meeting, A092: Natural Aerosols: Climate Response to Perturbations by Human Activity and Their Relevance for the Quantification of Climate Sensitivity I Posters [virtual]

TEACHING & MENTORING

SIO 60: Experiences in Oceanic and Atmospheric Sciences, UC San Diego. September– December 2023.

- Teaching assistant for undergraduate laboratory course on the fundamental principles of oceanic and atmospheric science. I assisted with lab experiments, graded assignments, held weekly office hours, organized the Canvas webpage, and helped supervise a weekend cruise aboard the R/V Sproul.

GEOG 360: Human Dimensions of Climate Change, San Diego State University. September 2023.

- Guest lecturer for undergraduate course.

ESYS 102: Solid and Fluid Earth, UC San Diego. March 2023.

- Guest lecturer for undergraduate course.

Research mentor for 2 undergraduate students:

- California Louis Stoke Alliance for Minority Participation (CAMP) program: Madison Beltran (2023 – 2024); Sarina Ghadiali (2024 – Present)

SERVICE

Peer review:

- Geophysical Research Letters, Nature Communications

Conference & workshop organization:

- Early career convener for AGU Fall Meeting, GC100. Solar Radiation Modification for Climate Intervention (2023)
- Co-organizer for Scripps Institution of Oceanography Marine Geoengineering Workshop (2023)

Committee memberships & outreach:

- Mentor and leadership for SIO Applicant Support and Knowledge-base program

- Mentor and leadership for Climate Science Curricular Group Peer Mentor Program
- Committee member for joint SIO/HDSI faculty hire
- Student host for SIO Open House
- Assistant coach for UC San Diego women's club ultimate frisbee team

OTHER QUALIFICATIONS

Computer skills:

- Programming languages: Python, R, and Linux commands, limited proficiency in MATLAB
- Community Earth System Model (CESM; versions 1 and 2)
- Adobe Photoshop and Illustrator

Languages:

- English: native.
- Dutch: proficiency in reading, writing, and speaking.
- Spanish: proficiency in reading, writing, and speaking.