

# Yan Jiang

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## Research Interests

Land-climate-human interactions, climate dynamics, water cycle, rainforest, wildfire, food security, drought, satellite remote sensing, machine learning, attribution analysis

## EDUCATION

### Ph.D. in Atmospheric Science

03/2022

University at Albany, State University of New York (SUNY), Albany, NY

Advisor: Dr. Liming Zhou

Thesis committee: Drs. Liming Zhou, Aiguo Dai, Brian E. J. Rose, Robert Fovell

### B.S. in Atmospheric Science

06/2016

Sun Yat-Sen University (Zhongshan University), Guangzhou, China

Advisor: Dr. Song Yang

## ACADEMIC APPOINTMENTS

### Postdoctoral Scholar

03/2022-present

School of Global Policy & Strategy, Scripps Institution of Oceanography

University of California, San Diego

Advisor: Dr. Jennifer Burney

### Visiting Scientist

05/2024-present

Research Applications Laboratory, National Center for Atmospheric Research

### Graduate Research Assistant

08/2016-01/2022

Department of Atmospheric & Environmental Science (DAES), University at Albany, SUNY

Advisor: Dr. Liming Zhou

## PUBLICATIONS

### Manuscripts In Progress (\*corresponding author)

- [16] Tang, W. and coauthors (**contributed author**) (2024). Challenges and Opportunities in International Collaborative Research on African Weather, Climate and Environment. *Bulletin of the American Meteorological Society* (accepted).
- [15] Jiang, Y., Zhang, Z., Corringham, T., He, C., and Burney, J. Unveiling the Hidden Costs of False Spring: A Phenology-Based Approach to Crop Damage and Economic Losses (in preparation)
- [14] Jiang, Y., Burney, J., and Levy, M. Green or Grain: Hydrological Impacts of Cropland Expansion at the Expense of Forest Loss. (in preparation)
- [13] Jiang, Y., Zhang, Z., He, C., and Burney, J. Satellite-guided crop phenology mapping and its application to intra-season modeling. (in preparation)
- [12] Jiang, Y., Zhou, L., ... Changes in rainfall characteristics over tropical rainforests. (to be submitted) preparation)

### Published (\*corresponding author)

- [11] **Jiang, Y.\*** and Burney, J. (2025) Crop water origins and hydroclimate vulnerability of global croplands. *Nature Sustainability* (in press), doi: 10.1038/s41893-025-01662-1
- [10] **Jiang, Y.\***, Zhou, L., Roundy, P. E., Hua, W., and Raghavendra, A. (2021) Increasing influence of Indian Ocean Dipole on precipitation over Central Equatorial Africa. *Geophysical Research Letters*, 48(8), e2020GL092370, doi: [10.1029/2020GL092370](https://doi.org/10.1029/2020GL092370)
- [9] **Jiang, Y.\***, Zhou, L., and Raghavendra, A. (2020) Observed changes in fire patterns and possible drivers over Central Africa, *Environmental Research Letter*, 5, 9. doi: [10.1088/1748-9326/ab9db2](https://doi.org/10.1088/1748-9326/ab9db2)
- [8] **Jiang, Y.**, Zhou, L.\*, Tucker, C. J., Raghavendra, A., Hua, W., Liu, Y. Y., and Joiner, J. (2019). Widespread increase of boreal summer dry season length over the Congo rainforest. *Nature Climate Change*, 9(8), 617-622, doi: [10.1038/s41558-019-0512-y](https://doi.org/10.1038/s41558-019-0512-y)
- [7] Hua, W., Zhou, L., **Jiang, Y.**, Zhou, L., Xu, X., and Chen, H. (2024) Increase in fire-season burned area in northeastern China driven by internal climate change. *Environmental Research Letter*, 19(12), 124086, doi: [10.1088/1748-9326/ad95a4](https://doi.org/10.1088/1748-9326/ad95a4)
- [6] Raghavendra, A.\* , Xia, G., Zhou, L., and **Jiang, Y.** (2022) Orographic enhancement of rainfall over the Congo Basin. *Atmospheric Science Letters*, e1079. doi: [10.1002/asl.1079](https://doi.org/10.1002/asl.1079)
- [5] Alber, K.\*, Raghavendra, A., Zhou, L., **Jiang, Y.**, Sussman, H. S., and Solimine, S. L. (2020) Analyzing intensifying thunderstorms over the Congo Basin using the Gálvez-Davison index from 1983-2018. *Climate Dynamics*, 56, 949-967. doi: [10.1007/s00382-020-05513-x](https://doi.org/10.1007/s00382-020-05513-x)
- [4] Raghavendra, A.\* , Zhou, L., Roundy, P. E., **Jiang, Y.**, Milrad, S. M., Hua, W., and Xia, G. (2020) The MJO's impact on rainfall trends over the Congo rainforest. *Climate Dynamics*, 1-13. doi: [10.1007/s00382-020-05133-5](https://doi.org/10.1007/s00382-020-05133-5)
- [3] Raghavendra, A.\* , Zhou, L., **Jiang, Y.**, & Hua, W. (2018). Increasing extent and intensity of thunderstorms observed over the Congo Basin from 1982 to 2016. *Atmospheric Research*, 213, 17-26, doi: [10.1016/j.atmosres.2018.05.028](https://doi.org/10.1016/j.atmosres.2018.05.028)
- [2] Hua, W.\*, Zhou, L., Chen, H., Nicholson, S. E., **Jiang, Y.**, & Raghavendra, A. (2018). Understanding the Central Equatorial African long-term drought using AMP-type simulations. *Climate Dynamics*, 50(3-4), 1115-1128, doi: [10.1007/s00382-017-3665-2](https://doi.org/10.1007/s00382-017-3665-2)
- [1] Hua, W.\*, Zhou, L., Chen, H., Nicholson, S. E., Raghavendra, A., & **Jiang, Y.** (2016). Possible causes of the Central Equatorial African long-term drought. *Environmental Research Letters*, 11(12), 124002, doi: [10.1088/1748-9326/11/12/124002](https://doi.org/10.1088/1748-9326/11/12/124002)

## Other Publications

- [2] Stutsrim, B., **Jiang, Y.**, Raghavendra, A., and Jones, B. (2019). Session 2: Weather Enterprise Keynote. Conference Report: 2019 AMS Summer Community Meeting, A. Raghavendra and L. C. Gaudet, Eds., *Amer. Meteor. Soc.*, 9-11.
- [1] Henny, L., Fandrich, K. M., **Jiang, Y.**, and Miller, S. (2019). Session 7: Authoritative Climate Science for Applications. Conference Report: 2019 AMS Summer Community Meeting, A. Raghavendra and L. C. Gaudet, Eds., *Amer. Meteor. Soc.*, 41-45.

## INVITED TALKS

- **Jiang, Y.** 2025: Where does rain come from: rainwater origins and food security. RAL Happy Hour Seminar, UCAR/NCAR, Boulder, CO (forthcoming)
- **Jiang, Y.** 2024: Rethinking Hydroclimatic Risk: Linking Atmospheric Moisture Origins to Crop Water Stress. The Asian School of the Environment, Nanyang Technological University, Singapore (**virtual**)
- **Jiang, Y.** 2024: Rethinking Water Availability: Insights from Satellite-derived Atmospheric Moisture Origins on Crop Water Stress. CASPO seminar, Scripps Institution of Oceanography, UC San Diego, La Jolla, CA
- **Jiang, Y.** 2024: Tracking Water Cycle from Space: Novel Insights into Water Availability for Global Croplands. Department of Meteorology and Atmospheric Sciences, Penn State University, University Park, PA

- **Jiang, Y.** 2023: Unraveling Global Crop Water Origins: Key to Climate Adaptation. MIT-CEE Rising Stars Workshop, MIT, Boston, MA
- **Jiang, Y.** 2023: Myths of Wildfires in Central Africa: Unveiled by Earth Observations & AI Tools. RAL LSM Group Meeting, UCAR/NCAR, Boulder, CO
- **Jiang, Y.** 2023: Heart of Drought: Long-term Changes in Rainfall and Wildfires in Central Africa. UCAR Africa Initiative Seminar, UCAR/NCAR, Boulder, CO
- **Jiang, Y.** 2021: Observed Variations in Precipitation Seasonality and Wildfires over Central Africa. GFDL/Princeton University, Princeton, NJ **(virtual)**

## CONFERENCE PRESENTATIONS

(Only including presentations as the presenting author)

- **Jiang, Y., Zhang, Z., He, C., and Burney, J.** 2025: Satellite-guided crop phenology map for accurate intra-season modeling. Advancing Land Modeling for Gulf Coast Resilience Workshop, Austin, TX **(Oral)**
- **Jiang, Y., Zhang, Z., He, C., and Burney, J.** 2025: Satellite-guided crop phenology map for accurate intra-season modeling. The 13th International Conference on Agro-Geoinformatics, Boulder, CO **(Oral)**
- **Jiang, Y. and Burney, J.** 2024: Forest loss-driven changes in downwind cropland water availability. 2024 AGU Fall Meeting, Washington, DC **(Oral)**
- **Jiang, Y., Zhang, Z., He, C., and Burney, J.** 2024: Satellite-guided crop phenology map for accurate intra-season modeling. 2024 AGU Fall Meeting, Washington, DC **(Oral)**
- **Jiang, Y. and Burney, J.** 2024: Global crop water stress constrained by remotely sensed water origins. AGU Chapman Conference on Remote Sensing of the Water Cycle: Sensors to Science to Society, Honolulu, HI **(Poster)**
- **Jiang, Y. and Burney, J.** 2023: Untangling the sources of atmospheric water for global rainfed crop production and implications for climate adaptation. 2023 AGU Fall Meeting, San Francisco, CA **(Oral)**
- **Jiang, Y. and Burney, J.** 2022: Where Does Water Come from for Food Production: A Global Analysis. Session: Linkages Across Climate, Hydrologic, and Agricultural System/2022 AGU Fall Meeting, Chicago, IL **(Oral)**
- **Jiang, Y., Zhou, L., Raghavendra, A., Roundy, P. E., and Hua, W.** 2022: Increasing Influence of Indian Ocean Dipole on Precipitation over Central Equatorial Africa. 35th Conference on Climate Variability and Change/102nd AMS Annual Meeting, Houston, TX **(Oral- virtual)**
- **Jiang, Y., Zhou, L., Raghavendra, A.** 2020: Recent Trends in Central African Fires and Possible Drivers. 100th AMS Annual Meeting, Boston, MA **(Oral)**
- **Jiang, Y., Zhou, L., Raghavendra, A.** 2019: Observational Trends in Burned Area and Driving Forces over Central Africa. Graduate Climate Conference, Woods Hole, MA **(Poster)**
- **Jiang, Y., Zhou, L., Raghavendra, A. and Hua, W.** 2018: Widespread Increase of Boreal Summer Dry Season Length Observed over the Congo Rainforest in the Last Three Decade. Chapman Conference on Hydrological Research in the Congo Basin, Washington, DC **(Poster)**
- **Jiang, Y., Zhou, L., Raghavendra, A. and Hua, W.** 2018: Observed Trends of Dry Season Length over the Congo Basin. WCRP Grand Challenge on Clouds, Circulation and Climate Sensitivity: 2nd Meeting on Monsoons and Tropical Rain Belts, Trieste, Italy **(Poster)**
- **Jiang, Y., Zhou, L., Raghavendra, A. and Hua, W.** 2017: Increase in Dry Season Length over the Congo. 31st Conference on Climate Variability and Change/98th AMS Annual Meeting, Austin, TX **(Poster)**

## GRANTS, AWARDS & SCHOLARSHIPS

<b>The Convergence Research (CORE) Fellow</b> , the NSF Convergence Accelerator	2024
<b>NCAR Early Career Scientist Assembly Visitor Fund</b>	2024
<b>MIT Civil and Environmental Engineering (CEE) Rising Stars</b>	2023
<b>Travel Grant</b> , Ohio State University	2018
<b>Travel Grant</b> , Climate and Large-Scale Dynamics Program of NSF	2018
<b>National Scholarship</b> , Sun Yet-Sen University (Highest award for Chinese undergraduate students)	2014, 2015
<b>First Price Scholar</b> , Sun Yet-Sen University	2013, 2014, 2015
<b>Zhongtao Environmental Scholarship</b> , Sun Yet-Sen University	2013
<b>NASA ROSE Ecohydrology Program</b> (Co-I, not funded)	2025

## MEDIA OUTREACH

Selected coverage from local and national media outlets on published research

- UAlbany News, “Decreasing Wildfires Observed Over Central Africa”, 09/24/2020
- Pys.org, “Decreasing Wildfires Observed Over Central Africa”, 09/16/2020
- Eos, “Congo Rainforest Endures a Longer Dry Season”, 07/25/2019
- NASA Earth Observatory, “A Longer Dry Season in the Congo Rainforest”, 07/03/2019
- UAlbany News, “Longer Summer Dry Season Observed in Congo Rainforest”, 07/02/2019

## TEACHING & MENTORING

### Teaching Assistant

DAES, UAlbany, SUNY 01/2018-05/2020

- 2020 Spring, Climate Laboratory (Python & Jupyter Notebook Tutor), Professor: Brian Rose
- 2019 Fall, Atmospheric Physics (graduate level), Professor: Liming Zhou
- 2018 Fall & 2019 Spring, Remote Sensing (both graduate & undergraduate levels), Professor: Liming Zhou
- 2018 Spring, Introduction to Climate Change, Professor: Christopher D. Thorncroft

Department of Atmospheric Science, Sun Yat-Sen University 08/2015-09/2015

- Experiment of Atmospheric Observation, Professor: Guangdong Lan

### Mentor

**Research project mentor**, Climatedata Academy: Computational Tools for Climate Science (virtual) 07/2023, 2024

**Graduate student mentor**, First-year graduate student mentor program, UAlbany 09/2017-08/2019

## PROFESSIONAL & COMMUNITY SERVICES

### Service to Scientific Community

**Guest Editor**, Special Issue “Exploring Emerging Climatic Changes and Responses in Plant Sciences Using Remote Sensing”, *Plants*, MDPI (IF: 4.4) 2023-2024

**Review Editor**, *Frontiers in Climate* (IF: 3.3) 2023-present

**Reviewer** (14 journals & 1 book) for Climate Dynamics, Communications Earth & Environment, Environmental Research: Climate, Environmental Research Communications, Environmental Research Letters, Frontiers in Climate, Global Change Biology, Geophysical Research Letters, International Journal of Climatology, Journal of Climate, Plants, Remote Sensing, Scientific Reports, Sensors, AGU Books

<b>Co-convener</b> , Bridging Data to Decisions: Earth Observation and Modeling for Informed Water Security Strategies, AGU	<b>12/2024</b>
<b>Chair and Co-convener</b> , Water Scarcity and Water Security in a Changing World, AGU	<b>12/2023</b>
<b>Liaison</b> , AGU Outstanding Student Presentation Awards Program	<b>12/2023, 2024</b>
<b>Judge</b> , AGU Outstanding Student Presentation Awards Program	<b>12/2022, 2023, 2024</b>
<b>Rapporteur</b> , 2019 AMS Summer Community Meeting	<b>08/2019</b>
<b>Judge</b> , AMS Undergraduate Student Poster Session	<b>01/2018</b>

## University Service

<b>Volunteer</b> , SCOPE outreach program: Pier Tour Guide, UCSD	<b>10/2023-present</b>
<b>Grant Reviewer</b> , UAlbany Graduate Student Association Research Grant	<b>07/2019-12/2021</b>
<b>Co-Leader</b> , DAES Seminar Program Committee, UAlbany	<b>09/2018-08/2019</b>
<b>Volunteer</b> , Annual Earth Day, UAlbany	<b>04/2017,04/2019</b>
<b>Volunteer</b> , MiSi Science Festival, Schenectady, NY	<b>10/2018</b>
<b>Leader</b> , World Meteorology Day Lab Visit, Sun Yet-Sen University	<b>03/2015</b>

## Professional Affiliations

American Meteorological Society  
American Geophysical Union

## TECHNICAL SKILLS

<b>Programming</b>	Python: data analysis (NumPy, Pandas, Seaborn, Matplotlib), GIS & geospatial analysis (GDAL), machine learning (Scikit-learn), cloud computing & APIs (PyDrive, Google Colaboratory); MATLAB; FORTRAN; CDO; Bash
<b>Data</b>	CHIRPS, CMAP, CMIP5, GLEAM, GPCC, GPCP, GNIP (Global Network of Isotopes in Precipitation), Reanalysis (ERA-Interim, ERA5, MERRA, MERRA2), Remote Sensing (GIMMS, MODIS, TES/AIRS, NOAA GridSat, TRMM), <i>in situ</i> meteorological observations (Africa)
<b>Models</b>	ICTP Regional Climate Model (RegCM4.9.3-CLM4.5), NCAR Community Earth System Model (CESM1.2.1)
<b>Systems &amp; Tools</b>	High Perform Computing Environment (slurm), Jupyter Notebook, Google Earth Engine, Windows, Linux, MacOS, Microsoft Office Suite, HTML/CSS
<b>Languages</b>	English, Mandarin (native), Japanese (JLPT N2), French (beginner), Spanish (beginner)

## WORKSHOP & SUMMER SCHOOL

<b>Foundational Teaching Workshop</b> , UCSD	<b>01/2024-02/2024</b>
<b>NASA JPL Summer School</b> on <i>Satellite Observational and Climate Models</i> , virtual	<b>08/2020</b>
<b>Unidata Python Workshop</b> , UAlbany	<b>05/2018</b>
<b>International Centre of Theoretical Physical Summer School</b> on <i>Theory, Mechanisms and Hierarchical Modeling</i> , Trieste, Italy	<b>06/2018-07/2018</b>
<b>Peking University Summer School</b> on <i>Climate, Weather, and Pollution and Health Consequence</i> , Beijing, China	<b>07/2017-08/2018</b>
<b>Plymouth University Field Course &amp; Campaign</b> on <i>River Water Quality</i> , Plymouth, UK	<b>03/2014-04/2014</b>