Di Tian, Ph.D.

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EDUCATION

Postdoc, Hydro-climatology   9/2014 to 8/2016
Department of Civil and Environmental Engineering, Princeton University, Princeton, NJ

Ph.D., Agricultural & Biological Engineering (Hydrologic Science)   8/2014
Department of Agricultural and Biological Engineering, University of Florida, Gainesville, FL

M.S., Land Resources Management   7/2010
School of Land Science and Technology, China University of Geosciences, Beijing

B.E., Land Resources Management   7/2005
School of Land Science and Technology, China University of Geosciences, Beijing

RESEARCH INTERESTS

Terrestrial hydrology and climate observations/monitoring, forecasting, and projections; hydro-climate extremes (droughts, heat waves, and extreme precipitation) and impacts on food, water, and ecosystems; environmental data science and machine learning/deep learning.

PROFESSIONAL EXPERIENCE

8/2022-present	Associate Professor, Department of Crop, Soil, and Environmental Sciences and Earth System Science Program, Auburn University, Auburn, Alabama, USA
8/2016-8/2022	Assistant Professor, Department of Crop, Soil, and Environmental Sciences and Earth System Science Program, Auburn University, Auburn, Alabama, USA
9/2014-8/2016	Postdoctoral Research Associate, Department of Civil and Environmental Engineering, Princeton University, Princeton, New Jersey, USA
8/2010-8/2014	Graduate Research Assistant, Department of Agricultural and Biological Engineering, University of Florida, Gainesville, Florida, USA

AWARDS AND HONORS

2022	NSF CAREER Award
2020	Outstanding Publication Award. College of Agriculture, Auburn University.
2019	Dean's Research Award. College of Agriculture, Auburn University.
2019	Dean's Grantsmanship Award. College of Agriculture, Auburn University.
2018	Presidential Award of Interdisciplinary Research, Auburn University.
2016	New Faculty Scholar, Auburn University.
2010-2014	Graduate Alumni Award, University of Florida.

2011-now   Member, Tau Beta Pi, Engineering Honor Society.

2011-now   Member, Gamma Sigma Delta, Agricultural Honor Society.

PUBLICATIONS (*denotes student or postdoc advisees of Di Tian)

Commentary

1. **D. Tian**. 2024. Irrigation expansion in the face of war and climate change (invited commentary). *Nature Food*, https://doi.org/10.1038/s43016-024-01019-5

Peer-Reviewed Journal Papers (Published or Accepted)

2. *Kumar, S. and **Tian, D.**, 2024. Causal discovery analysis reveals global sources of predictability for regional flash droughts. *Water Resources Research*, 60(11), p.e2024WR038391.

3. *Wang, F., **D. Tian**. 2024. Multivariate bias correction and downscaling of climate models with trend-preserving deep learning. *Climate Dynamics*, https://doi.org/10.1007/s00382-024-07406-9

4. *Schillerberg, T., **D. Tian**. 2024. Global Assessment of Compound Climate Extremes and Exposures of Population, Agriculture, and Forest Lands Under Two Climate Scenarios. *Earth's Future*, 12(9), p.e2024EF004845.

5. *Rashid, T., **D. Tian**. 2024. Improved 30-m evapotranspiration estimates over 145 eddy covariance sites in the contiguous United States: The role of ECOSTRESS, harmonized Landsat Sentinel-2 imagery, climate reanalysis, and deep neural network postprocessing. *Water Resources Research*, 60(4), p.e2023WR036313.

6. *Lesinger, K., **D. Tian**, H. Wang. 2024. Subseasonal forecast skill of evaporative demand, soil moisture, and flash drought onset from two dynamic models over the contiguous United States. *Journal of Hydrometeorology*

7. Takhellambam, B.S., Srivastava, P., Lamba, J., Zhao, W., Kumar, H., **Tian, D**. and Molinari, R., 2023. Artificial neural network-empowered projected future rainfall intensity-duration-frequency curves under Changing climate. *Atmospheric Research*, p.107122.

8. *Schillerberg, T., **Tian, D.**, 2023. Changes in crop failures and their predictions with agroclimatic conditions: Analysis based on earth observations and machine learning over global croplands. *Agricultural and Forest Meteorology*, 340, p.109620.

9. *Wang, F., **D. Tian**, and M. Carroll. 2023. Customized Deep Learning for Precipitation Bias Correction and Downscaling. *Geoscientific Model Development*, 16, 535–556.

10. *Medina, H., **D. Tian**. 2023. Synergistic contributions of climate and management intensifications to maize yield trends from 1961 to 2017. *Environmental Research Letters*, 18, 024020.

11. Takhellambam, B.S., P. Srivastava, J. Lamba, R. McGehee, H. Kumar, **D. Tian**. 2023. Projected Mid-Century Rainfall Erosivity Under Climate Change Over the Southeastern United States, *Science of The Total Environment*, p. 161119.

12. Zhen, X., Huo, W., **Tian, D.**, Zhang, Q., Sanz-Saez, A., Chen, C.Y. and Batchelor, W.D., 2023. County level calibration strategy to evaluate peanut irrigation water use under different climate change scenarios. *European Journal of Agronomy*, 143, p.126693.

13. *Lesinger, K., **D. Tian**. 2022. Trends, Variability, and Drivers of Flash Droughts in the Contiguous United States. *Water Resources Research*, 58, e2022WR032186.

14. *Wang, F., **D. Tian**. 2022. On deep learning-based bias correction and downscaling of multiple climate models simulations. _Climate Dynamics_, 59, 3451-3468.

15. Takhellambam, B.S., Srivastava, P., Lamba, J., McGehee, R.P., Kumar, H. and **Tian, D.**, 2022. Temporal disaggregation of hourly precipitation under changing climate over the Southeast United States. _Scientific Data_, 9(1), pp.1-14.

16. Domeisen, D.I. and 39 coauthors including *H. Medina and **D. Tian**. 2022. Advances in the subseasonal prediction of extreme events: Relevant case studies across the globe. _Bulletin of the American Meteorological Society_, 103(6), E1473-E1501.

17. Ponpetch, K., B. Erko, T. Bekana, T. Kebede, **D. Tian**, Y. Yang, and S. Liang, 2021. Environmental Drivers and Potential Distribution of Schistosoma mansoni Endemic Areas in Ethiopia. _Microorganisms_, 9(10), p.2144.

18. *Wang, F., **D. Tian**, L. Lowe, L. Kalin, and J. Lehrter. 2021. Deep learning for daily precipitation and temperature downscaling. _Water Resources Research_, 57, e2020WR029308 (WRR top downloaded article in 2021).

19. *Li, Yanzhong, **D. Tian**, and *H. Medina. 2021. Multimodel Subseasonal Precipitation Forecasts over the Contiguous United States: Skill Assessment and Statistical Postprocessing. _Journal of Hydrometeorology_, 22(10), pp.2581-2600.

20. *Asadi, P., **D. Tian**. 2021. Estimating leaf wetness duration with machine learning and climate reanalysis data. _Agricultural and Forest Meteorology,_ 307, p.108548.

21. Tasnim, B., Fang, X., Hayworth, J.S. and **D. Tian**, 2021. Simulating Nutrients and Phytoplankton Dynamics in Lakes: Model Development and Applications. _Water_, 13(15), p.2088.

22. Saminathan, S., *H. Medina, S. Mitra, and **D. Tian**. 2021. Improving short to medium range GEFS precipitation forecast in India. _Journal of Hydrology_, 598, p.126431

23. *Li, Yizhuo, **D. Tian**, G. Feng, W. Yang, L. Feng. 2021. Climate change and cover crop effects on water use efficiency of a corn-soybean rotation system. _Agricultural Water Management_, 255, p.107042.

24. **Tian, D.**, X. He, P. Srivastava, and L. Kalin. 2021. A hybrid framework for forecasting monthly reservoir inflow based on machine learning techniques with dynamic climate forecasts, satellite-based data, and climate phenomenon information. _Stochastic Environmental Research and Risk Assessment_, pp.1-23.

25. *Medina, H., **D. Tian.**, and A. Abebe, 2021. On optimizing a MODIS-based framework for in-season corn yield forecast. _International Journal of Applied Earth Observation and Geoinformation_, 95, p.102258.

26. *Lesinger, K., **D. Tian**, C. Leisner, A. Sanz-Saez, 2020. Impact of Climate Change on Storage Conditions for Major Agricultural Commodities across the Contiguous United States. _Climatic Change_, 1-19.

27. *Schillerberg, T.A., **D. Tian**, 2020. Changes of crop failure risks in the United States associated with large-scale climate oscillations in the Atlantic and Pacific Oceans. _Environmental Research Letters_, 15(6), p.064035.

28. *Medina, H., **D. Tian**. 2020. Comparison of probabilistic post-processing approaches for improving NWP-based daily and weekly reference evapotranspiration forecasts. _Hydrology and Earth System Sciences,_ 24(2).

29. He X., L. Estes, M. Konar, **D. Tian**, D. Anghileri, K. Baylis, T. Evans, J. Sheffield. 2019. Integrated approaches to understanding and reducing drought impact on food security across scales. *Current Opinion in Environmental Sustainability*, 40, pp.43-54.

30. *Schillerberg, T., **D. Tian**, and R. Miao. 2019. Spatiotemporal patterns of maize and winter wheat yields in the United States: predictability and impact from climate oscillations. *Agricultural and Forest Meteorology*, 275 (2019): 208-222.

31. *Medina, H., **D. Tian**, F. Martin, and G. Chirico. 2019. Comparing GEFS, ECMWF, and post-processing methods for ensemble precipitation forecasts over Brazil. *Journal of Hydrometeorology*, 20(4), pp.773-790.

32. Li, Y., C. Liu, W. Yu, **D. Tian**, and P. Bai. 2019. Response of streamflow to environmental changes: A Budyko-type analysis based on 144 river basins over China. *Science of the Total Environment*, 664, 824-833

33. **Tian, D.**, M. Pan, and E. F. Wood. 2018. Assessment of a High-resolution Climate Model for Surface Water and Energy Flux Simulations over Global Land: An Inter-comparison with Reanalyses. *Journal of Hydrometeorology*, 19, 1115-1129.

34. *Medina, H., **D. Tian**, P. Srivastava, A. Pelosi, G. B. Chirico. 2018. Medium-range reference evapotranspiration forecasts for the contiguous United States based on multi-model numerical weather predictions. *Journal of Hydrology*, 562, pp.502-517.

35. Cammarano, D., and **D. Tian**. 2018. The effects of projected climate and climate extremes on a winter and summer crop in the southeast USA. *Agricultural and Forest Meteorology*, 248, pp.109-118.

36. **Tian, D.**, G. Xie, J. Tian, S. Tseng, C.K. Shum, J. Lee, S. Liang. 2017. Temporal variability and environmental driving factors of harmful algal blooms (HABs) in western Lake Erie, USA. *PLoS ONE* 12(6): e0179622.

37. **Tian, D.**, E. F. Wood, and X. Yuan. *2017*. CFSv2-based sub-seasonal precipitation and temperature forecast skill over the contiguous United States. *Hydrology and Earth System Science*, 21, 1477-1490.

38. **Tian, D.**, M. Pan, L. Jia, G. Vincci, and E. F. Wood. 2016. Assessing GFDL High-Resolution Climate Model Water and Energy Budgets from AMIP simulations over Africa. *Journal of Geophysical Research-Atmospheres*, 121, 8444–8459.

39. Estes, L. D., T. Searchinger, M. Spiegel, **D. Tian**, S. Sichinga, M. Mwale, L. Kehoe, T. Kuemmerle, A. Berven, N. Chaney, J. Sheffield, E. F. Wood, and K. K. Caylor. 2016. Reconciling agriculture, carbon and biodiversity in a savannah transformation frontier. *Philosophical Transactions of Royal Society B*, 371(1703).

40. **Tian, D.**, C. J. Martinez, and T. Asefa. 2016. Improving short-term urban water demand forecasts with reforecast analog ensembles. *Journal of Water Resources Planning and Management*, 10.1061/(ASCE)WR.1943-5452.0000632, 04016008.

41. **Tian, D.**, S. Asseng, C. J. Martinez, V. Misra D. Cammarano, and B. Ortiz. 2015. Does decadal climate variation influence wheat and maize production in the southeast USA? *Agricultural and Forest Meteorology*, 204, 1–9.

42. **Tian, D.,** C. J. Martinez, W. D. Graham, and S. Hwang. 2014. Statistical downscaling multi-model forecasts for seasonal precipitation and surface temperature over southeastern United States. *Journal of Climate,* 27, 8384–8411.

43. **Tian, D.** and C. J. Martinez. 2014. The GEFS-based daily reference evapotranspiration (ETo) forecast and its implication for water management in the southeastern United States. *Journal of Hydrometeorology,* 15, 1152–1165.

44. **Tian, D.,** C. J. Martinez, and W. D. Graham. 2014. Seasonal prediction of regional reference evapotranspiration (ET_o) based on Climate Forecast System version 2 (CFSv2). *Journal of Hydrometeorology,* 15, 1166–1188.

45. **Tian, D.** and C. J. Martinez. 2012. Comparison of two analog-based downscaling methods for regional reference evapotranspiration forecasts. *Journal of Hydrology*, 475(2012), 350-364.

46. **Tian, D.** and C. J. Martinez. 2012. Forecasting reference evapotranspiration using retrospective forecast analogs in the southeastern United States. *Journal of Hydrometeorology,* 13, 1874-1892.

47. **Tian, D.,** X. Li, and D. E. Weller. 2012. The responses of hydrological indicators to watershed characteristics. *Acta Ecologica Sinica*, 32(1):27-37 (in Chinese).

48. **Tian, D.**, X. Li, D. E. Weller, and Z. Bai. 2011. Impacts of land use and impervious surface on stream flow metrics in the Chesapeake Bay watershed. *Journal of Natural Resources*, 26(6): 1012-1020 (in Chinese).

49. Zhao, H, X. Li, X. Wang, and **D. Tian.** 2010. Grain size distribution of road-deposited sediment and its contribution to heavy metal pollution in urban runoff in Beijing, China. *Journal of Hazardous Materials*, 183: 203-210.

Manuscripts Submitted

50. *Lesinger, K., **D. Tian**. *Submitted*. Skillful subseasonal soil moisture drought forecasts with deep learning-dynamic Models

51. *Wang, F., **D. Tian**. *Submitted*. Assessing satellite-, radar-, and reanalysis-based hourly precipitation datasets over the contiguous United States

52. *Rashid, T., **D. Tian**. *Submitted*. A deep learning-based framework for generating 100-m ECOSTRESS-like land surface temperature estimates using multi-source remote sensing observations.

53. Shi, Y., S. Pan, Y. You, S. Prior, **D. Tian**, H. Yu, Q. Yu, H. Tian. *Submitted*. Harnessing climate-smart tillage for wheat production to mitigate increased sensitivity of greenhouse gas intensity in a dry-heat world.

54. Haas, H., L. Kalin, **D. Tian**, J. Lehrter. *Submitted*. Dynamic land-use/cover improves simulations of long-term watershed-scale streamflow and water quality trends

Book Chapters

*Schillerberg, T., **D. Tian.** 2023. Climate Impacts on Crop Productions. In: Zhang, Q., *Encyclopedia of Smart Agriculture Technologies*. Springer, Cham.

Conference Abstracts/Presentations

1. *Kumar, S., **D. Tian**. A Scalable Deep Learning Emulator for Soil Moisture and Flash Drought Monitoring. AGU Annual Meeting 2024, 9 - 13 December 2024 in Washington, D.C.

2. *Lesinger, K. **D. Tian**. Combining Deep Learning and Dynamic Models for Skillful Subseasonal Forecasts of Soil Moisture and Drought. AGU Annual Meeting 2024, 9 - 13 December 2024 in Washington, D.C.

3. *Rashid, T., **D. Tian**. Generating ECOSTRESS-like Land Surface Temperature Estimates Based on Multi-Source Remote Sensing and Super-Resolution Deep Learning. AGU Annual Meeting 2024, 9 - 13 December 2024 in Washington, D.C.

4. *Shretha, A., **D. Tian**, Brian Dzwonkowski. Understanding and Projecting Terrestrial Hydroclimate Impacts on River Discharge to the Coastal Ocean Using Explainable Deep Learning, AGU Annual Meeting 2024, 9 - 13 December 2024 in Washington, D.C.

5. *Wang, F., D. **Tian**. Assessing hourly precipitation datasets over the contiguous United States: An intercomparison of state-of-the-art reanalysis, satellite, and radar estimates. AGU Annual Meeting 2024, 9 - 13 December 2024 in Washington, D.C.

6. *Rashid, T. **D. Tian**. A Deep learning-based Framework for Generating ECOSTRESS-like Land Surface Temperature Estimates, AGU Water Science Conference 2024, Saint Paul, MN, 24-27 June 2024.

7. *Lesinger, K. and **Tian, D.**: Converging Deep Learning and Numerical Prediction for Skillful Subseasonal Soil Moisture and Flash Drought Forecasting, EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024.

8. **Tian, D.** and *Wang, F.: Trend-Preserving Deep Learning for Multivariate Bias Correction and Downscaling of Climate Models, EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024

9. *Lesinger, K, **D. Tian**, and H. Wang. Explainable Deep Learning Postprocessing for Improved Subseasonal Soil Moisture and Flash Drought Forecasts. NOAA's 48th Climate Diagnostics & Prediction Workshop, Tallahassee, Florida, USA, 26–29 March 2024

10. *Kumar, S., **D. Tian**. Discovering global sources of regional flash drought predictability using causal networks. NOAA's 48th Climate Diagnostics & Prediction Workshop, Tallahassee, Florida, USA, 26–29 March 2024

11. *Schillerberg, T., **D. Tian**. Projected Changes in Compound Climate Extremes and Exposures Under Future Climate Change Scenarios. AGU Fall Meeting 2023, San Francisco, CA 11-15 December 2023.

12. *Schillerberg, T., **Tian, D.**, 2023. Exposure Risks Intensify Due to Compound Climate Events in Future Climates. National Science Foundation NRT Annual Meeting. October, 2023. Tempe, AZ.

13. *Lesinger, K., **Tian, D.**, Wang, H., 2023. Flash Drought Trends and Variability within Observational Reanalysis. National Science Foundation NRT Annual Meeting. October, 2023. Tempe, AZ.

14. *Wang, F., **D. Tian**. Multivariate Bias Correction of Multiple Climate Model Outputs for Drought Assessment. AGU Fall Meeting 2023, San Francisco, CA 11-15 December 2023.

15. *Kumar, S., **D. Tian**. Detecting and quantifying sub-seasonal teleconnections of regional soil moisture flash droughts using causal networks. 2023 Alabama Water Resources Conference, September 6-8, 2023, in Orange Beach, Alabama

16. *Lesinger, K, **D. Tian**, and H. Wang. Subseasonal forecast skill of US flash droughts from 2000 to 2022 in global dynamic models. 2nd National Flash Drought Workshop, Boulder, CO, May 2 to May 4, 2023

17. *Kumar, S., **D. Tian**. Understanding sub-seasonal predictability of soil moisture flash drought in the southeastern US based on causal analysis of large-scale climate patterns. 2nd National Flash Drought Workshop, Boulder, CO, May 2 to May 4, 2023

18. *Lesinger. K, **D. Tian**, and H. Wang. Subseasonal forecast skill of US flash droughts from 2000 to 2022 in global dynamic models. 103rd AMS Annual Meeting, Denver, 8–12 January 2023

19. *Lesinger. K, **D. Tian**, and H. Wang. Subseasonal flash drought forecast skill over the contiguous United States. AGU Fall Meeting 2022, Chicago, IL and online, 12 - 16 December 2022.

20. *Wang, F., **D. Tian**, and M. Carroll. Customized Deep Learning for Precipitation Bias Correction and Downscaling. AGU Fall Meeting 2022, Chicago, IL and online, 12 - 16 December 2022.

21. *Lesinger, K., **D. Tian**, and H. Wang. Flash drought forecast skill in subseasonal prediction models over the contiguous United States. Southeast Climate Adaptation Science Symposium, September 19-21, 2022, Gulf Shores, Alabama.

22. Jang, J., **D. Tian**, and Q. He. Model-based Irrigation Control using Model Predictive Control and DSSAT Crop Simulator. 2022 American Control Conference, June 6, 2022, Atlanta, Georgia.

23. Tasnim, B., X. Fang, J. S. Hayworth, and **D. Tian**. Internal Nutrient Dynamics Simulation in Six Minnesota Lakes. 2022 World Environmental & Water Resources Congress, June 5-8, 2022, Atlanta, Georgia.

24. *Rashid, T., **D. Tian**. Improving ECOSTRESS-based Evapotranspiration Estimates Using Harmonized Landsat Sentinel-2 Imagery. EGU General Assembly 2022, May 23-27, 2022, Vienna, Austria

25. **Tian, D.** AI-driven environmental analytics for data-informed climate adaptation and resilience. Envisioning 2050 in the Southeast: AI-Driven Innovations in Agriculture, March 9-11, 2022. Auburn, Alabama.

26. *Rashid, T., **D. Tian**. Improving ECOSTRESS-based Evapotranspiration Estimates Using Harmonized Landsat Sentinel-2 Imagery and Deep Learning. Envisioning 2050 in the Southeast: AI-Driven Innovations in Agriculture, March 9-11, 2022, Auburn, Alabama.

27. *Lesinger, K., **Di Tian**. Variability and Trends of Flash Drought in the Continental United States. Envisioning 2050 in the Southeast: AI-Driven Innovations in Agriculture, March 9-11, 2022, Auburn, Alabama.

28. *Wang, F., **Di Tian**. On deep learning-based bias correction and downscaling of multiple climate models simulations. Envisioning 2050 in the Southeast: AI-Driven Innovations in Agriculture, March 9-11, 2022, Auburn, Alabama.

29. *Schillerberg, T., **D. Tian**. Global Agroclimate Trends and Crop Failures over Recent Decades. Envisioning 2050 in the Southeast: AI-Driven Innovations in Agriculture, March 9-11, 2022, Auburn, Alabama.

30. *Lesinger, K., **Di Tian**. Spatiotemporal Variability of Flash Drought in the Continental United States. 2021 AGU Fall Meeting, 13-17 December 2021, New Orleans, LA and online.

31. *Wang, F., **Di Tian**. Bias Correction of Multi-model GCMs Daily Temperature based on Deep Learning. 2021 AGU Fall Meeting, 13-17 December 2021, New Orleans, LA and online.

32. *Harris, M., **D. Tian**. Understanding Heat-Related Morbidity across the Rural-Urban Spectrum: A Comparison of Two States in the United States Sun Belt. 2021 AGU Fall Meeting, 13-17 December 2021, New Orleans, LA and online.

33. *Schillerberg, T., **D. Tian**. Global Crop Failure and Associated Changes in Agroclimate Conditions. 2021 AGU Fall Meeting, 13-17 December 2021, New Orleans, LA and online.

34. Henrique, H, L. Kalin, J. Lehrter, **D. Tian**, and L. Lowe, A watershed modeling framework to assess the impacts of environmental changes in the Mobile Bay, Alabama. 2021 AGU Fall Meeting, 13-17 December 2021, New Orleans, LA and online.

35. Karki, R., P. Srivastava, L. Kalin, and **D. Tian**. Application of SWAT-MODFLOW for evaluating the impacts of climate change on the surface- and groundwater resources of the lower Apalachicola Chattahoochee Flint River Basin, USA. 2021 AGU Fall Meeting, 13-17 December 2021, New Orleans, LA and online.

36. Zhen, X., W. Huo, **D. Tian**, Q. Zhang, A. Sanz-Saez, C. Chen, W. D. Batchelor. County-Level Calibration Strategy to Evaluate Peanut Irrigation Water Use Under Different Climate Change Scenarios. 2021 ASA, CSSA, SSSA International Annual Meeting, November 7-10, Salt Lake City, UT.

37. *Wang, F., **D. Tian**. On deep learning bias correction for GCMs daily temperature outputs. The 3rd NOAA Workshop on Leveraging AI in Environmental Sciences, September 13–17, 2021, Boulder, Colorado & Virtual

38. *Rashid, T., **D. Tian**. Predicting Field-scale Daily Evapotranspiration Using Multi-Source Spaceborne Remote Sensing Imagery and Deep Learning. Alabama Water Resources Conference, September 8-10, 2021, Gulf Shore, AL.

39. *Lesinger, K., **D. Tian**. Spatial temporal variability of flash drought in the continental United States. Alabama Water Resources Conference, September 8-10, 2021, Gulf Shore, AL.

40. Takhellambam, B.S., P. Srivastava, J. Lamba, R. McGehee, H. Kumar, **D. Tian**. Stochastic generation of 15-minute precipitation for water resource modeling under climate change over Southeastern United States. Alabama Water Resources Conference, September 8-10, 2021, Gulf Shore, AL.

41. *Schillerberg, T., **D. Tian**. Changes of agroclimatic conditions and associated crop failures over global crop lands. 2021 GSA Southeastern Section Meeting, 1–2 April 2021. Auburn, Alabama (online)

42. *Lesinger, K., **D. Tian**. Flash drought spatiotemporal variability in the continental United States and its prediction from Atlantic and Pacific sea surface temperatures. 2021 GSA Southeastern Section Meeting, 1–2 April 2021. Auburn, Alabama (online)

43. *Wang, F., **D. Tian**, L. Lowe, L. Kalin, J. Lehrter, and B. Dzwonkowski. Deep Learning for Daily Precipitation and Temperature Downscaling. 2020 AGU Fall Meeting, Dec. 1-17. Virtual.

44. *Schillerberg, T., **D. Tian**. Changes of agroclimate conditions and induced yield variability in the breadbaskets of the world. 2020 AGU Fall Meeting, Dec. 1-17. Virtual.

45. *Harris, M., **D. Tian**. The combined impact of heat-humidity extremes on mortality risks in major cities in the Sun Belt of the United States. 2020 AGU Fall Meeting, Dec. 1-17. Virtual.

46. **Tian, D.**, 2020. Developing an Analytical Framework Based on Earth System Observations Forecasts: Towards Data-Informed Climate-Smart Management for Agriculture and Water Resources. 2020 ASA-CSSA-SSSA Annual International Annual Meetings. Nov. 9-13. Virtual.

47. **Tian, D.**, P. Asadi*, H. Medina*, B. Ortiz, and I. Kesikka. A Climate Smart Framework for Forecasting Field-level Potential Evapotranspiration and Irrigation Requirement with Numerical

Weather Predictions and Satellite Remote Sensing. EGU General Assembly 2020, Online | 4–8 May 2020

48. *Medina, H., **Tian, D.**, 2020. A dynamic-statistical approach for probabilistic forecasting of daily soil moisture in the United States. 2020 EGU General Assembly. EGU General Assembly 2020, Online | 4–8 May 2020

49. *Asadi, P., **D. Tian**. Developing Improved Leaf Wetness Duration Models with Machine Learning and Climate Reanalysis Data. 2019 AGU Fall Meeting, Dec. 9-13, San Francisco, California

50. *Medina, H., **D. Tian**. Bayesian Crop Model Optimization for Corn Yield Forecasting Over the U.S. Corn Belt. 2019 AGU Fall Meeting, Dec. 9-13, San Francisco, California

51. *Lesinger, K., **D. Tian**, C. Leisner, A. Sanz-Saez, Impact of Climate Change on Storage conditions for Major Agricultural commodities in the United States. 2019 ASA-CSSA-SSSA Annual International Annual Meetings. Nov. 10-13. San Antonio, Texas.

52. *Li, Y., **D. Tian**, G. Feng, and L. Feng. Does cover crop mitigate climate-induced nitrogen loss from a Maize-soybean Cropping System? 2019 ASA-CSSA-SSSA Annual International Annual Meetings. Nov. 10-13. San Antonio, Texas.

53. **Tian, D**. A Prototype Framework of Climate Services for Decision Making. 2019 Faculty Research Symposium. Oct. 4. Auburn University, AL

54. **Tian, D**. Exploiting Earth System Big Data for Environmental and Agricultural Sustainability. 2019 Faculty Research Symposium. Oct. 4. Auburn University, AL

55. *Li, Y., **D. Tian**, G. Feng, and L. Feng. Does Cover Crop Mitigate Climate Extremes Impact on System Water Use Efficiency in a Maize-Soybean Cropping System? 2019 ASABE Annual International Meeting, July 7-10, Boston, Massachusetts

56. *Li, Y., **D. Tian**, G. Feng, and L. Feng. Assessing Effects of Cover Crop on Water Use in a Maize-Soybean Cropping System under Historical and Future Climate. Southern Cover Crop Conference 2019, July 16-17

57. **D. Tian**. Translating climate and remote sensing information into improved decision making in agriculture and water resources. 1st Workshop on Leveraging AI in the Exploitation of Satellite Earth Observations & Numerical Weather Prediction from April 23-25, 2019 in College Park, MD.

58. *Medina, H., **D. Tian**. Improving reference evapotranspiration forecasting with numerical weather predictions. Workshop on Leveraging AI in the Exploitation of Satellite Earth Observations & Numerical Weather Prediction from April 23-25, 2019 in College Park, MD.

59. *Schillerberg, T., **D. Tian**. Evaluating impacts from large-scale climate circulations on crop failure risks in the United States using a Bayesian approach. 2019 Auburn University Research Student Symposium, April 9, Auburn, Alabama

60. *Medina, H., **D. Tian**. Harnessing big data for in-season maize yield forecasting: a machine learning based framework. 2019 Auburn University Research Student Symposium, April 9, Auburn, Alabama

61. *Asadi, P., **D. Tian**. Improving estimation of leaf wetness duration using machine learning with climate reanalysis data. 2019 Auburn University Research Student Symposium, April 9, Auburn, Alabama

62. *Lesinger K., **D. Tian**, and C.P. Lesner. How will climate change influence storage conditions for major agricultural commodities in the United States? 2019 Auburn University Research Student

Symposium, April 9, Auburn, Alabama

63. *Li, Y., **D. Tian**, G. Feng, and L. Feng. Climate Extremes and Cover Crop Influence Yields and Water Balance of a Maize-Soybean Cropping System. 2019 Mississippi Water Resources Conference, April 2-3, Jackson, MS

64. *Li, Y., **D. Tian**, G. Feng, and L. Feng. Systematic Water Use Efficiency in Maize-Soybean Rotations: The Impact from Climate Change and Cover Crops. 2019 Mississippi Water Resources Conference, April 2-3, Jackson, MS

65. *Schillerberg, T., **D. Tian**. Assessing changes of crop failure risks in the United States: The Impact from Large-Scale Climate Circulations. 2018 AGU Annual Meeting, December 10-14, Washington D.C.

66. *Medina, H., **D. Tian**. Classification Mapping and Yield Forecasting of Maize Crop: The Influence of Machine Learning, Satellite Observations, and Land Surface Simulations. 2018 AGU Annual Meeting, December 10-14, Washington D.C.

67. *Valipour, M., **D. Tian**. Comparing soil moisture dynamics in climate reanalyses, land surface models, and remote sensing retrievals over the continental United States. 2018 AGU Annual Meeting, December 10-14, Washington D.C.

68. *Schillerberg, T., **D**. **Tian.** Linking large-scale climate variability with anomalies of summer and winter crop yields in the United States. 2018 ASA and CSSA Meeting, Nov. 4-7, Baltimore, MD.

69. *Medina, H., **D**. **Tian.** A data driven approach for crop yield forecasting based on remote sensing and climate information. 2018 ASA and CSSA Meeting, Nov. 4-7, Baltimore, MD.

70. **Tian, D.**, K. Bowen, and A. Hagan. Modeling Cotton Target Spot Risk Under Climate Change with Land Data Assimilation System. 2018 ASA and CSSA Meeting, Nov. 4-7, Baltimore, MD.

71. **Tian, D**. Developing climate-informed reservoir inflow forecasts using improved machine learning techniques. Alabama Water Resources Conference, September 6-7, 2018, Gulf Shore, AL.

72. *Medina, H., **D. Tian**. Statistical post-processing of reference evapotranspiration forecasts based on multi-model ensemble numerical weather predictions. Alabama Water Resources Conference, September 6-7, 2018, Gulf Shore, AL.

73. *Valipour, M., **D. Tian**. Comparative assessment of multiple soil moisture estimates over the contiguous United States. Alabama Water Resources Conference, September 6-7, 2018, Gulf Shore, AL.

74. *Schillerberg, T., **D. Tian**, and R. Miao. The influence of climate variability on maize and winter wheat in the United States. Graduate Women in Science: 97th Annual National Conference. June 15-16, 2018, Iowa City, Iowa.

75. *Schillerberg, T. and **Di Tian**. Linking large-scale climate variability with anomalies of summer and winter crop yields in the rainfed United States. This is Research: Student Symposium 2018, March 26th, Auburn University, Auburn, AL

76. *Medina, H. and **Di Tian**. Forecasting corn yields using remote sensing data and subseasonal weather forecasts. This is Research: Student Symposium 2018, March 26th, Auburn University, Auburn, AL

77. *Duan, Y. and **Di Tian**. Sub-seasonal hydrologic forecasts based on WRF-hydro model and Sub-X climate forecast in the ACT Basin. This is Research: Student Symposium 2018, March 26th, Auburn University, Auburn, AL

78. **Tian, D.**, *H. Medina, *Y. Duan, and *T. Schillerberg. A data-driven framework of agroclimate monitoring and forecasting for decision-making. Big Data Driven Agriculture Workshop: Advances, Challenges, and Opportunities, 25–28 February 2018, Arlington, VA

79. *Medina, H., **D. Tian.** Machine learning techniques for predicting corn yields using MODIS data and subseasonal climate forecasts. Big Data Driven Agriculture Workshop: Advances, Challenges, and Opportunities, 25–28 February 2018, Arlington, VA

80. *Schillerberg, T., **D. Tian**, and R. Miao. Linking large-scale climate variability with anomalies of summer and winter crop yields in the rainfed United States. 2018 Global Change and FEW Symposium. 9 February 2018, Auburn University, Auburn, AL

81. **Tian, D.**, *H. Medina, *Y. Duan, and T. *Schillerberg. A Foundational Framework of Climate-driven Information System and Service for Global Sustainability. 2018 Global Change and FEW Symposium. 9 February 2018, Auburn University, Auburn, AL

82. *Duan, Y., *Medina, H., and **D. Tian**. Developing Reservoir Seasonal Inflow Forecasts based on Dynamic Climate Forecasts and Large-Scale Climate Information. 98th AMS Annual Meeting, 7–11 January 2018, Austin, TX

83. **D. Tian** and Davide Cammarano. How changes of climate extremes affect summer and winter crop yields and water productivity in the southeast USA. AGU Fall Meeting, 11–15 December 2017, New Orleans, LA

84. *Medina, H. and **D. Tian**. Comparison of multiple statistical post-processing methods for TIGGE-based reference evapotranspiration forecasts. AGU Fall Meeting, 11–15 December 2017, New Orleans, LA

85. **Tian, D.** and Davide Cammarano. Projected Climate Extremes and Their Impacts on Summer and Winter Crop Yields in the Southeast United States. 2017 ASA-CSSA-SSSA Annual Meeting, October 22-25, 2017. Tampa, Florida

86. *Medina, H. and **D. Tian**. Probabilistic Forecasts of Daily Reference Evapotranspiration for the Continental U.S. Based on Numerical Weather Predictions. 2017 ASA-CSSA-SSSA Annual Meeting, October 22-25, 2017. Tampa, Florida

87. *Medina, H. and **D. Tian**. Medium-range forecasting of reference evapotranspiration in the continental US using numerical weather predictions. 2017 Alabama Water Resources Conference & Symposium, September 6-8, 2017. Orange Beach, Alabama

88. **Tian, D**. Translating hydro-climate forecasting into improved decision making in agriculture and water resources. The 1st CHESS Workshop on Coupled Human-Earth System Solutions for Global Sustainability, August 13-14, 2017, Auburn University, Alabama, USA

89. **Tian, D.,** M. Pan, L. Jia, G. Vincci, and E. F. Wood. Understanding Water and Energy Fluxes over Global Land in the GFDL High-resolution Climate Model Simulations. ASABE 2017 Annual International Meeting. July 16-19, 2017. Spokane, Washington.

90. **Tian, D.** and E. F. Wood. Assessment of Seasonal Drought Forecasts in Dynamic Climate Models over Sub-Saharan Africa. ASABE 2017 Annual International Meeting. July 16-19, 2017. Spokane, Washington.

91. *Medina, H. and **D. Tian**. Forecasting medium-range reference evapotranspiration for the continental U.S. using the TIGGE multi-model ensembles. This is Research: Student Symposium. April 13, 2017. Auburn, AL.

92. *Duan, Y. and **D. Tian**. Enhancing Lake Inflow Forecasts in the Alabama-Coosa-Tallapoosa (ACT) River Basin using the North American Multi-Model Ensemble. This is Research: Student Symposium. April 13, 2017. Auburn, AL.

93. **Tian, D.** and E. F. Wood. Skill of CFSv2 sub-seasonal forecast for precipitation and temperature extremes over contiguous United States. Weather & Climate Decision Tools for Farmers, Ranchers, and Land Managers. Dec 5-7, 2016, Gainesville, FL.

94. Zeng, Z., **D. Tian**, L. Estes, T. Evans, E. Wood, and K. Caylor. Can we forecast farmers' yields? The relationships between rainfall variability, farmers' expectations, and actual yields in a tropical dryland. 2016 AGU Fall Meeting. Dec 12-16, 2016, San Francisco, CA.

95. **Tian, D.**, E. F. Wood, G. Vincci, J. Koch, Liwei Jia, and Ming Pan. Surface Water and Energy Budgets for Sub-Saharan Africa in GFDL Coupled Climate Model. 2015 AGU Fall Meeting. Dec 14-18, 2015, San Francisco, CA.

96. L. D. Estes, **Tian, D.**, J. Sheffield, K. Caylor, T. Evans, and E. F. Wood. Impacts of intra-seasonal agricultural decision-making and forecast information on maize production in Zambia. 2015 AGU Fall Meeting. 2015 AGU Fall Meeting. Dec 14-18, 2015, San Francisco, CA.

97. Liang, S., **D. Tian**, G. Xie, J. Tian, K. Tseng, C.K. Shum, and J. Lee. Temporal Variability and Environmental Drivers of Harmful Algal Blooms (HABs) in Western Lake Erie. 2014 AGU Fall Meeting. Dec 15-19, 2014, San Francisco, CA.

98. Tian, J., **D. Tian**, S. Liang. Primary environmental drivers and temporal variability of harmful algal blooms (HABs) in western Lake Erie. University of Florida 2014 EPI Research Day. Feb 20, 2014, Gainesville, FL.

99. **Tian, D.**, C. J. Martinez, and T. Asefa, Improving municipal water demand forecast using retrospective forecast of a global numerical weather prediction model. 4th UF Water Institute Symposium, Feb 11-12, 2014, Gainesville, FL.

100. **Tian, D.**, C. J. Martinez, and T. Asefa, Forecasting municipal water demand based on the Global Ensemble Forecast System. 28th Conference on Hydrology – 2014 AMS Annual Meeting, Feb 2-6, 2014, Atlanta, GA.

101. **Tian, D.**, C. J. Martinez, and T. Asefa, Improving water demand forecasts using retrospective forecast analogs in the Tampa Bay region. 2013 AGU Fall Meeting. Dec 9-13, 2013, San Francisco, CA.

102. **Tian, D.**, C. J. Martinez, and W. D. Graham, Improving seasonal predictions of regional-scale precipitation and temperature using global-scale multimodel climate forecasts. AWRA 2013 Annual Water Resources Conference. Nov 4-7, 2013, Portland, OR.

103. C. J. Martinez, **D. Tian**, W. D. Graham, and S. Hwang. Statistical downscaling of seasonal climate forecasts of the National Multi-Model Ensemble in the southeastern United States. ASABE 2013 Annual International Meeting, July 21-24, 2013, Kansas City, Missouri.

104. **Tian, D.**, C. J. Martinez, and W. D. Graham, Assessing the seasonal skill of the National Multi-Model Ensemble. Florida Water and Climate Alliance Workshop 9, June 26, 2013, Orlando, FL.

105. **Tian, D.**, C. J. Martinez, and W. D. Graham, Seasonal prediction of reference evapotranspiration based on Climate Forecast System version 2. Southeast Climate Consortium Program Review Meeting, May 15-17, 2013, Savannah, GA.

106. **Tian, D.**, C. J. Martinez, and W. D. Graham. Seasonal prediction of reference evapotranspiration based on Climate Forecast System version 2. Sustaining Economies and Natural Resources in a Changing World: Key Role of Land Grant Universities, April 2-3, 2013, Gainesville, FL.

107. **Tian, D.** and C. J. Martinez. Downscaling medium-range reference evapotranspiration forecasts in the southeastern United States. AWRA 2012 Annual Water Resources Conference, Nov 12-15, 2012, Jacksonville, FL.

108. **Tian, D.** and C. J. Martinez. A comparison of two analog-based methods for regional reference evapotranspiration forecasts. ASABE 2012 Annual International Meeting, July 29-Aug 1, 2012, Dallas, TX.

109. **Tian, D.** and C. J. Martinez. A comparison of two analog-based methods for downscaling regional reference evapotranspiration forecasts. NOAA's 10th annual Climate Prediction Applications Science Workshop, Mar 13-15, 2012, Miami, FL.

110. **Tian, D.** and C. J. Martinez. Evaluation of reference evapotranspiration forecast analogs in the southeastern United States. The 3rd UF Water Institute Symposium, Feb 15-16, 2012, Gainesville, FL.

111. **Tian, D.** and C. J. Martinez. Forecasting regional reference evapotranspiration using Global Forecast System reforecasts. Florida Climate Institute Annual Event, Nov 14-15, 2011, Gainesville, FL.

112. **Tian, D.** and C. J. Martinez. Forecasting regional reference evapotranspiration using reforecast analogs. Southeast Climate Consortium 2011 Fall Planning Meeting, Nov 2-4, 2011, Tallahassee, FL.

113. **Tian, D.** and C. J. Martinez. Forecasting regional reference evapotranspiration using Global Forecast System reforecasts. NOAA's 36th annual Climate Diagnostics and Prediction Workshop, Oct 3-6, 2011, Fort Worth, TX.

RESEARCH GRANTS AND FUNDING

Funded Competitive Grants ($8,677,511)

1. **PI**, Developing long-term high-resolution precipitation dataset using deep learning with multi-source Earth system data, NOAA Climate Program Office Earth System Science and Modeling Research in Support of the Disaster, Period: 9/2023-8/2025, Total Budget: $313,420

2. **PI**, Estimation of evapotranspiration based on multi-source data fusion and deep learning, AAES, Period: 10/2023-9/2025, Total Budget: $50,000

3. **PI**, CAS-Climate: CAREER: Analytical Methods for Understanding and Predicting Agricultural Flash Droughts in a Changing Climate, NSF Hydrologic Science Program and Climate & Large-Scale Dynamics Program, Period: 5/2022-4/2027, Total Budget: $574,706

4. **Co-PI** (PI B. Dzwonkowski), Using shelf monitoring to assess multi-stressor impacts on dissolved oxygen dynamics and hypoxia in a changing coastal climate, ALCoE through the US Department of Treasury, Period: 9/1/2021-8/31/2024, Total Budget: $500,000

5. **PI**, A study of agricultural flash drought using machine learning, AAES, Period: 9/1/2021-8/31/2023, Total Budget: $50,000

6. **Co-PI** (PI J. Lehrter), Building Resilience for Oysters, Blue Crabs, and Spotted Seatrout to

Environmental Trends and Variability in the Gulf of Mexico, <u>NOAA RESTORE Program</u>, Period: 9/2019-8/2024, Total Budget: $2,887,250

7. **Co-PI** (PI K. McNeal), NRT: Addressing resiliency to climate related hazards and disasters through data informed decision making, <u>NSF Research Traineeship Program</u>, Period: 9/2019-8/2024, Total Budget: $3,000,000

8. **Science PI**, Application of Machine Learning to High-Resolution Earth System Model Data, <u>NASA EPSCoR R3 Program</u>, Period: 9/2021-12/2022, Total Budget: $80,000

9. **PI**, FACT: A Data-Driven Framework of Climate-Smart Analytics for Irrigation Management, <u>USDA-NIFA Foundational and Applied Science Program</u>, Period: 9/2019-8/2022, Total Budget: $500,000

10. **PI**, Estimating near real-time plant water needs based on satellite, observations and numerical weather predictions, <u>AAES</u>, Period: 9/2019-8/2021, Total Budget: $50,000

11. **Co-PI** (PI N. Potnis), Exploring plant-microbiome-environment interactions towards tailoring plant disease management, <u>FFAR New Innovator Award</u>, Period: 9/2019-8/2022, $300,000

12. **Co-PI** (PI Courtney Leisner), Assessing the impact of climate change on blueberry chilling hours and freeze tolerance in the southeast region, <u>AAES</u>, Period: 9/2019-8/2021, Total Budget: $50,000

13. **PI**, A Prototype Framework of Climate Services for Decision Making, <u>AU Presidential Awards for Interdisciplinary Research</u>, Period: 7/2018-6/2020, Total Budget: $150,000

14. **PI**, A Weather-informed Cotton Target Spot Disease Prediction Using Data-driven Approaches, <u>AAES</u>, Period: 5/2018-4/2020, Total Budget: $50,000

15. **PI**, Understanding Agroclimate Forecasting for Decision making: A Prototype for the Southeast USA, <u>AU Intramural Grant Program</u>, Period: 5/2017-6/2019, Total Budget: $40,000

16. **Co-PI** (PI F. O'Donnell), A multi-disciplinary analysis of the vulnerability and resilience of coastal communities to climate-related hazards, <u>AU Intramural Grant Program</u>, Period: 5/2017-6/2019, Total Budget: $33,635

17. **PI**, Towards Actionable Hydrological Forecasts for Drought Management, <u>AAES</u>, Period: 10/2017-9/3019, Total Budget: $50,000

18. **PI**, Enhancing Seasonal Hydrological Forecasts in the Alabama-Coosa-Tallapoosa (ACT) River Basin using the North American Multi-Model Ensemble, Period: 3/2017-2/2018, <u>AWRRI through USGS</u>, $25,000

<u>External Support</u>

19. **PI**, Developing long-term high-resolution precipitation dataset using deep learning with multi-source Earth system data, <u>Accelerated ACCESS allocation (renewable)</u>, 11/19/2024-11/18/2025, Computing allocation: $15,818

20. **PI**, Process-informed deep learning bias correction of climate simulations for drought assessment, <u>Discover ACCESS allocation (renewable)</u>, 4/20/2023-4/19/2024, Computing allocation: $8,020

21. **PI**, Analytical Methods for Understanding and Predicting Agricultural Flash Droughts in a Changing Climate, <u>NCAR HPC university small allocation (renewable)</u>, 5/1/2022-4/30/2027, Initial allocation: 605,000 Core-hours with NCAR data access and CMIP analysis platform

22. **Co-PI** (PI Lisa Lowe), Modeling connections between ecosystem condition and ecosystem services to increase resilience of environmental systems in the northern Gulf of Mexico, <u>NSF XSEDE HEC & ECSS Resources</u>, 4/28/2021-4/27/2022, Computing allocation: $348,087

23. **PI**, Effect of Environment on Cotton Cultivar Development, <u>Cotton Inc.</u>, Period: 1/2018-12/2019, Total Budget: $20,000
24. **PI**, Analytical Approaches for Understanding and Predicting Flash Drought and Heat Wave, <u>NSF XSEDE Resources</u>, Period: 10/2020-10/2021, Computing allocation: $3,500

<u>Pending Competitive Grants</u>

25. **PI**, Addressing Climate Non-stationarity for Improved Soil Moisture-based Agricultural Drought Assessment, <u>NOAA Climate Program Office Understanding and Assessing drought in a Changing Climate (NIDIS),</u> Period: 9/2025-8/2027, Total Budget: $500,000
26. **PI**, DSFAS: A climate-smart platform for evapotranspiration data-informed irrigation and drought monitoring, <u>USDA-NIFA AFRI Foundational and Applied Science Program</u>, Period: 7/2025-6/2029, Total Budget: $650,000

COURSES TAUGHT

- CSES7800, Deep Learning for Environmental Sciences, Auburn University
- CSES5800/6800, Climate, Water, and Life, Auburn University
- CSES6960, Special Problems: Deep Learning in Earth System Science, Auburn University
- CSES 7600 Agroclimatology, Auburn University
- CSES 5010/6010 Analysis of Plant, Soil, and Animal Data, Auburn University,
- ESSI 8200, Earth System Science Seminar, Auburn University
- CSES3960/CSES5930 Special Problems on Climate Analytics, Auburn University.
- Guest Lecture, Honors Book Club class, Auburn University
- Guest Lecture, BSEN5250/6250 Deterministic Modeling for Biosystems, Auburn University
- Guest Lecture, ENVI1010 Introduction to Environmental Science, Auburn University
- Guest Lecture, EESI8100 Earth Systems Observations and Analysis
- Guest Lecture, Omics in Agriculture, Auburn University
- Guest Lecture, Introduction to Geospatial Technologies, Auburn University
- Teaching Assistant, ABE6254 Simulation of Agricultural Watershed System, University of Florida

ADVISING STUDENTS AND SCHOLARS

<u>Major Advisor</u>

Graduated:

- Hanoi Medina, PhD program in Crop, Soil, and Environmental Sciences (2020), Auburn University, currently a Data Scientist at Nobel Corporation, Texas, Houston.
- Tayler Schillerberg, Ph.D. program in Earth System Science (2024). M.S. program in Crop, Soil, and Environmental Sciences (2019). Currently a physical scientist at the USDA climate hubs.
- Kyle Lesinger, P.D. program in Earth System Science (2024). M.S. program in Crop, Soil, and Environmental Sciences (2020). Currently a research scientist with the Earth System Science Center at UAH and NASA IMPACT.

Ongoing:

- Linqiang Ge, Ph.D. program in Earth System Science, 2020-present.

- Taufiq Rashid, Ph.D. program in Crop, Soil, and Environmental Sciences, 2021-present
- Sudhanshu Kumar, Ph.D. program in Earth System Science, 2022-present
- Ajeeta Shrestha, M.S. program in Crop, Soil, and Environmental Sciences, 2024-present

Committee Member

Graduated:
- Danielle Tadych, M.S. program in Crop, Soil, and Environmental Sciences (2020).
- Guilherme Morata, M.S. program in Crop, Soil, and Environmental Sciences (2020).
- Ritesh Karki, Ph.D. program in Biosystems Engineering, 2020.
- Bushra Tasnim, M.S. program in Civil and Environmental Engineering, 2020.
- Destiny Brokaw, M.S. program in Entomology and Plant Pathology, 2022
- Takhellambam Bijoychandra Singh, Ph.D. program in Biosystems Engineering, 2023.
- Ji Sung Jang, Ph.D. program in Chemical Engieering, 2024
- Henrique Haas, Ph.D. program in Earth System Science, 2024

Ongoing:
- Hua Yan, Ph.D. program in Earth System Science, 2023-present
- Montasir Maruf, Ph.D. program in Earth System Science, 2021-present
- Lucas Ramon Teixeira, Ph.D. program in Crop, Soil, and Environmental Sciences, 2022-present

University Reader

- Zhibao Bian, Ph.D. in Earth System Science (2022)
- Zhuonan Wang, Ph.D. in Earth System Science (2021)
- Yuanzhi Yao, Ph.D. in Earth Systems Science (2019)

Mentoring Postdoctoral Research Fellow, Visiting Scholars/Students, and Undergraduates

- Fang Wang, Research fellow (1/2020-present)
- Hanoi Medina, Research fellow (6/2020-10/2020), now a data scientist at Noble Corporation, Houston, TX
- Marie Harris, Undergraduate researcher (Fall 2020 and 2021)
- Yanzhong Li, Visiting Scholar from Nanjing University of Information Science and Technology (3/2019-2/2020)
- Yizhuo Li, Visiting Student from China Agricultural University (10/2018-9/2019)
- Parisa Asadi, Graduate Research Assistant (1/2019-2/2020), now a data scientist at ZEISS group, Fairfield, CA.

PROFESSIONAL SERVICES AND AFFILIATIONS

Journal Editor Services

- Topic Editor, *Earth System Science Data*, 2023-present
- Topic Editor, *Geoscientific Model Development (EGU)*, 2023-present
- Associate Editor, *Journal of Applied Meteorology and Climatology (AMS)*, 2017-2018

Grant Review Service

- 2024: Ad-hoc reviewer for NSF; Ad-hoc reviewer for AAES; Ad-hoc reviewer for Auburn University; Ad-hoc reviewer for Nazarbayev University
- 2023: Panel reviewer for NASA; Ad-hoc Reviewer for NASA; Ad-hoc Reviewer for NSF
- 2022: Panel reviewer for NSF; Ad-hoc Reviewer for NSF; Panel reviewer for NASA
- 2020: Panel reviewer for USDA/NIFA; Panel reviewer for AAES; Ad-hoc Reviewer for NSF; Panel reviewer for Auburn University
- 2019: Ad-hoc Reviewer for NASA; Panel reviewer for Auburn University
- 2018: Panel reviewer for NSF
- 2017: Panel reviewer for USDA/NIFA; Ad-hoc Reviewer for the Kentucky Science and Engineering Foundation Research & Development
- 2016: Ad-hoc Reviewer for the Illinois Water Resources Center

Manuscript Review Services (Past 3 years)

Agricultural and Forest Meteorology; Atmospheric Research; Artificial intelligence for the Earth Systems; Climate Dynamics; Climatic Change; Hydrology and Earth System Sciences; Earth System Dynamics; Environmental Research Letters; Earth's Future; Geoscientific Model Development; Journal of Hydrometeorology; Journal of Geophysical Research-Atmospheres; Nature Communications; Nature Energy; Nature Food; Natural Hazards and Earth System Sciences; PNAS Nexus; Water Resources Research, Weather and Forecasting

Conference Services

- Session organizer "AI for climate resiliency and adaptations", Envisioning 2050 in the Southeast: AI-Driven Innovations in Agriculture Conference, 2022
- Chair and primary convener, Session "Harnessing earth system data for understanding and predicting climate extremes in agriculture and urban systems", American Geophysical Union Fall Meeting, 2021
- Co-organizer (with primary organizer Dr. Xia Kang at Virginia Tech) for the Symposium "Artificial Intelligence in Soil and Environmental Sciences", ASA, CSSA, SSSA International Annual Meeting 2021
- Chair and primary convener, Session "Utility of earth and socio-environmental observations, forecasts, and models to improve drought resilience through data-informed decision making", American Geophysical Union Fall Meeting, 2020
- International Program Committee, 2019 IEEE International Workshop on Meteorology for Agriculture and Forestry, Naples, Italy

Department, University, and Outreach Services

- Graduate program officer, Earth System Science program, College of Agriculture, Auburn University, 2023-present
- Environmental science program committee, Department of Crop Soil and Environmental Sciences, Auburn University, 2018-2023
- Graduate program committee, Department of Crop Soil and Environmental Sciences, Auburn

University, 2023-present
- Award committee, Department of Crop Soil and Environmental Sciences, Auburn University, 2023-present
- Department of Crop Soil and Environmental Sciences, Auburn University, 2018-present
- Faculty search committee, College of Forestry and Wildlife Sciences, Auburn University, 2023
- Faculty search committee, Department of Crop, Soil, and Environmental Sciences, Auburn University, 2023
- Lessons on climate and drought for the Alabama 4-H program (Kyle Lesinger and Tayler Schillerberg advised by Dr. Di Tian).

Professional Affiliation and Certificate

- MIT Applied Data Science Professional Certificate
- Member, American Geophysical Union (AGU)
- Member, European Geosciences Union (EGU)
- Member, American Meteorological Society (AMS)
- Member, Soil Science Society of America (SSSA)
- Full member (invited), Sigma Xi