

Xuebin Yang, Ph.D.

Postdoctoral Fellow ▪ Syracuse University
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Education

- Ph.D. **Geography**, The University of Texas at Austin, **December 2017**
Dissertation: *Research on Texas savannas: fractional woody cover mapping, potential woody cover modelling, and woody plant encroachment analysis* (advisor: Dr. Kelley Crews)
- M.S. **Cartology and GIS**, Peking University, **July 2011**
Thesis: *The validation of MODIS Albedo Product* (advisor: Dr. Qiming Qin)
- B.S. **Geographic Information System**, Wuhan University, **July 2008**

Research Experience

- August 2022 - Present **Postdoctoral Fellow** (advisor: Dr. Ethan Coffel)
Department of Geography and the Environment, Syracuse University
- Assess the resilience of crop production to heat stress in the United States, and examine the feedback of crop production on local climate
 - Explore response of corn developmental phases to climate change
- September 2020 - August 2022 **Postdoctoral Fellow** (advisor: Dr. Xiangming Xiao)
Department of Microbiology and Plant Biology, The University of Oklahoma
- Map forest and evergreen forest in the southern Great Plains with integration of optical and radar remote sensing data
 - Track evergreen forest encroachment in the southern Great Plains, and analyze its spatiotemporal variability in relation to changing precipitation and fire regimes
 - Quantify the response of water and carbon cycles to evergreen forest encroachment in the southern Great Plains
- May 2019 - September 2020 **Postdoctoral Fellow** (advisor: Dr. Jesse Poland)
Department of Plant Pathology, Kansas State University
- Take growing season time-series hyperspectral images of wheat experiment field with Nano-Hyperspec VNIR (400-1000 nm)
 - Explore the spectral correlation between wheat genotype replications, in order to find the best timing in the growing season for wheat yield prediction
- January 2018 - December 2018 **Postdoctoral Fellow** (advisor: Dr. Peter Kedron)
Department of Geography, Oklahoma State University
- Model the response of potential woody cover in Texas savanna to climate change in the 21st century with CMIP5 models
 - Analyze the stability of MODIS tree cover product in relation to climate variability

Summer 2014

Internship (advisor: Dr. Jiafu Mao)

Oak Ridge National Laboratory

- Collect publicly published global biomass/carbon stock data
- Perform comparison to our research group's product

Peer-reviewed Publications (* denotes corresponding author)

17. **Yang X***, Xiao X, Zhang C, Celis J. Changes in water and carbon fluxes in the USA southern Great Plains grassland due to evergreen forest encroachment. *Canadian Journal of Remote Sensing*. Accepted. doi: 10.1080/07038992.2024.2333976
16. Zhang, C, Xiao, X, Wang, X, Qin, Y, Doughty, R, **Yang, X**, Dong, J. Mapping wetlands in Northeast China by using knowledge-based algorithms and microwave (PALSAR-2, Sentinel-1), optical (Sentinel-2, Landsat), and thermal (MODIS) images. *Journal of Environmental Management*. 2024 Jan. doi: 10.1016/j.jenvman.2023.119618
15. **Yang X***, Crews KA, Meyer T. Do limits exist on potential woody cover of Brazilian savanna? *Ecological Indicators*. 2023 Jun. doi:10.1016/j.ecolind.2023.110220
14. Zhang C, Xiao X*, Zhao L, Qin Y, Doughty R, Wang X, Dong J, **Yang X**. Mapping Eucalyptus plantation in Guangxi, China by using knowledge-based algorithms and PALSAR-2, Sentinel-2, and Landsat images in 2020. *International Journal of Applied Earth Observation and Geoinformation*. 2023 Jun. doi:10.1016/j.jag.2023.103348
13. **Yang X***, Xiao X, Zhang C. Spatiotemporal variability and key factors of evergreen forest encroachment in the southern Great Plains. *Journal of Environmental Management*. 2023 Mar. doi:10.1016/j.jenvman.2022.117012
12. Wang J, Xiao X*, Qin Y, Dong J, Zhang G, **Yang X**, Wu X, Biradar C, Hu Y. Annual forest maps in the contiguous United States during 2015–2017 from analyses of PALSAR-2 and Landsat images. *Earth System Science Data Discussions*. 2023 Feb. doi:10.5194/essd-2022-339
11. **Yang X***, Wang X, Evers B, Cui Y, Poland J. Spectral correlation between wheat genotype replications over the visible and near-infrared spectrum. *Remote Sensing Letters*. 2022 Dec. doi:10.1080/2150704X.2022.2138619
10. Geng X, Li B, Pan X, Wei Z, **Yang X**, Liao K, Cui Y*. Generating Hourly Continuous Evapotranspiration Using Fengyun-2F Geostationary Satellite Data. *Earth and Space Science*. 2022 Mar. doi:10.1029/2021EA002090
9. **Yang X***, Xiao X, Qin Y, Wang J, Neal K. Mapping forest in the southern Great Plains with ALOS-2 PALSAR-2 and Landsat 7/8 data. *International Journal of Applied Earth Observation and Geoinformation*. 2021 Dec. doi:10.1016/j.jag.2021.102578
8. **Yang X***, Crews KA, Kedron P. Response of potential woody cover of Texas savanna to climate change in the 21st century. *Ecological Modelling*. 2020 Sep. doi:10.1016/j.ecolmodel.2020.109177

7. **Yang X***, Crews KA. The role of precipitation and woody cover deficit in juniper encroachment in Texas savanna. *Journal of Arid Environments*. 2020 Sep. doi:10.1016/j.jaridenv.2020.104196
6. Cui Y*, **Yang X**, Chen X, Fan W, Zeng C, Xiong W, Hong Y. A two-step fusion framework for quality improvement of a remotely sensed soil moisture product: A case study for the ECV product over the Tibetan Plateau. *Journal of Hydrology*. 2020 Aug. doi:10.1016/j.jhydrol.2020.124993
5. **Yang X***, Crews K, Frazier AE, Kedron P. Appropriate spatial scale for potential woody cover observation in Texas savanna. *Landscape Ecology*. 2020 Jan. doi:10.1007/s10980-019-00933-5
4. **Yang X***. Woody plant cover estimation in Texas savanna from MODIS products. *Earth Interactions*. 2019 Nov. doi:10.1175/EI-D-19-0005.1
3. **Yang X***, Crews K. Applicability analysis of MODIS tree cover product in Texas savanna. *International Journal of Applied Earth Observation and Geoinformation*. 2019 Sep. doi:10.1016/j.jag.2019.05.003
2. **Yang X***, Crews KA. Fractional woody cover mapping of Texas savanna at Landsat scale. *Land*. 2019 Jan. doi:10.3390/land8010009
1. **Yang X***, Crews KA, Yan B. Analysis of the pattern of potential woody cover in Texas savanna. *International Journal of Applied Earth Observation and Geoinformation*. 2016 Oct. doi:10.1016/j.jag.2016.07.021

Manuscripts In Progress

1. **Yang X***, Coffel E. Evapotranspiration modulates the impact of heat stress on corn yield. *Environmental Research Letters*. (in major revision after peer review)

Grants and Awards

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| 2016 | NSF Doctoral Dissertation Research Improvement Grant: <i>Variation of the role of driving factors in savanna encroachment</i> (overall rating: good) |
| 2015 | Robert E. Veselka Endowed Fellowship |
| 2012 | GeoEye Foundation IKONOS imagery grant (successful) |

Teaching Experience

Co-instructor at the University of Oklahoma

- Spring 2022 Environmental Remote Sensing (graduate course)
 - Teach the processing of optical and radar data in Google Earth Engine
 - Teach approaches of land cover mapping in Google Earth Engine

Lab lecturer at the University of Texas at Austin

- Spring 2017 Environmental GIS
- Fall 2016 Environmental GIS
- Spring 2016 Land Use/Land Cover Change Practicum
- Fall 2015 Natural Environment
- Spring 2015 Advanced GIS
- Fall 2014 Environmental GIS
- Spring 2013 Natural Environment

Skills

- Programming: R, Python, JavaScript
- Instrument: Nano-Hyperspec VNIR, Spectroradiometer (FieldSpec3)
- Cloud-based platform: Google Earth Engine
- Software: SpectralView, ArcGIS, eCognition, Fragstats, ENVI, Erdas Imagine

Professional Conference Presentations

- Evapotranspiration modulates the impact of heat stress on corn yield. *Annual Meeting of Ecological Society of America*. August 2023. Portland, OR.
- Tracing the encroachment of evergreen forest in the southern Great Plains between 1985 and 2015. *IALE-North American Annual Meeting*. April, 2022. Virtual.
- Mapping forest in southern Great Plains with PALSAR-2 and Landsat 8 data. *Annual Meeting of the American Association of Geographers*. April 2021. Virtual.
- Identification of high-yielding wheat genotypes with UAV-based hyperspectral imagery. *American Geophysical Union Fall Meeting*. December 2019. San Francisco, CA.

- Response of potential woody cover of savanna ecosystems to climate change. *Annual Meeting of the American Association of Geographers*. April 2018. New Orleans, LA.
- Fractional woody cover mapping of Texas savannas at Landsat scale. *Annual Meeting of the American Association of Geographers*. April 2017. Boston, MA.
- A Landsat continuous field of woody plant cover for savanna biome. *Annual Meeting of the American Association of Geographers*. April 2016. San Francisco, CA.
- The maximum realizable woody cover in central Texas savanna: an application of non-linear quantile regression. *Annual Meeting of the American Association of Geographers*. April 2015. Chicago, IL.
- Woody plant encroachment monitoring: an approach combining object-based image analysis and decision tree analysis. *Annual Meeting of the American Association of Geographers*. April 2014. Tampa, FL.
- Object- vs. pixel-based classification of IKONOS imagery: land cover change in Okavango Delta, Botswana between 2003 and 2011. *Annual Meeting of the American Association of Geographers*. April 2013. Los Angeles, CA.
- The validation of MODIS Albedo Product. *Annual Meeting of the American Association of Geographers*. February 2012. New York, NY.