

## Jia Yang

Assistant Professor

Department of Natural Resource Ecology and Management, Oklahoma State University

### Work Address

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### Research Interest

Ecological modeling; Fire Ecology; Impacts of Climate Change and disturbances on Land Ecosystems; Natural Resource Conservation; GIS and Remote Sensing Applications in Natural Resources

### Research Skills

- Model development: developing and improving land ecosystem models (the Dynamic Land Ecosystem Model, DLEM); using weather/climate models (WRF and CESM); high-performance computing for climate model and land surface model simulation on NCAR Yellowstone machine
- Remote sensing and GIS: Proficient in ArcGIS, Python GIS programming, IDL, NCL, and other programs in processing and analyzing spatial data
- Large dataset analysis: MODIS, LANDSAT, Sentinel, LiDAR, AVHRR, climate datasets (CMIP6) and Land ecosystem model inter-comparison datasets (MstMIP, ISI-MIP, and Trendy).
- Prescribed burning and fire management in woodland and grassland ecosystems.
- Programming: Proficient in Python, Fortran, R, C++, NCAR Command Language (NCL)

### Education

- Ph.D. in Forest Ecology (2010 - 2015), School of Forestry and Wildlife Sciences, Auburn University, Auburn, AL, US. Dissertation: "Global fire activities and their impacts on the terrestrial carbon budget in context of multiple environmental changes", Major Professor: Dr. Hanqin Tian
- B.S. in Agricultural Meteorology (2003 - 2007), College of Resources and Environmental Sciences, China Agricultural University, Beijing, China

### Current Employment

Assistant Professor, Department of Natural Resource Ecology and Management, Oklahoma State University (1/2022 - present)

### Past Employment

- Assistant Professor, Department of Forestry, Mississippi State University (8/2018 – 12/2021)
- Research Fellow II, School of Forestry and Wildlife Sciences, Auburn University (11/2015 – 8/2018)

- Postdoctoral Research Scientist, School of Forestry and wildlife Sciences, Auburn University (8/2015 – 10/2015)
- Graduate Research Assistant, School of Forestry and wildlife Sciences, Auburn University (8/2010 – 8/2015)
- Visiting Scholar and Research Assistant: School of Forestry and wildlife Sciences, Auburn University (8/2009 – 7/2010)
- Graduate Research Assistant, Institute of Atmospheric Physics, Chinese Academy of Sciences (8/2007 – 8/2009)

### Research Experience

- **Fire impacts on ecosystems** (2010 - present): Investigate the impact of wildfire on forest productivity. Examine regional and global fire regimes and their impacts on the land ecosystems by using the remote sensing and land ecosystem modeling.
- **Terrestrial ecosystem model development and improvement** (2009 – present): Improve model representations of fire, vegetation dynamics, soil carbon decomposition, agriculture, photosynthesis, evapotranspiration, and soil moisture and soil temperature on the platform of the Dynamic Land Ecosystem Model (DLEM).
- **Model inter-comparison projection and data analysis** (2010 – 2018): The major contributor of the DLEM simulations for Multi-Scale Synthesis and Terrestrial Model Intercomparison Project (MstMIP, 2010-2012), Inter-Sector Impact Model Intercomparison Project (ISIMIP, 2015 - present), and Dynamic Global Vegetation Model project (GCP-Trendy, 2016 - present).
- **Remotely-sensed ecosystem dynamics** (2010 - present): Explore the dynamics of ecosystem structure and functioning in response to environmental changes and climate extremes by using LiDAR signal, SIF, vegetation greenness.
- **Impacts of forest restoration on regional forest and water resources** (2018 - present): Reconstruct the century-long deforestation and reforestation patterns and evaluate their impacts on forest and water resources in the Mississippi Alluvial Valley.
- **Impacts of land use change on regional climate** (2007 - 2009): Investigate the impacts of land use change in Monsoon Asia on regional climate by applying a regional climate model.
- **Water, carbon, and nitrogen exports from Mississippi River** (2013 - present): Study the water, carbon, and nitrogen exports from Mississippi River under the impacts of climate change, land use change and management, and CO<sub>2</sub> concentration increase.

### Teaching Experience

- Instructor, GIS for Natural Resources Management, Mississippi State University (Spring semesters in 2019, 2020, and 2021)
- Instructor, Remote Sensing Applications, Mississippi State University (Spring semesters in 2019, 2020, and 2021)
- Instructor, Spatial Technologies in Natural Resources Management, Mississippi State University (Fall semesters in 2019, 2020, and 2021)
- Teaching Assistant, GIS Application in Natural Resources, Auburn University (Fall semesters in 2015, 2017, and 2018)
- Teaching Assistant, Forest Fire Management, Auburn University (Spring semester, 2013)
- Guest Lecturer, GIS Application in Natural Resources, Auburn University (Fall semester, 2016)
- Guest Lecturer, Advanced Ecosystem Modeling, Auburn University (Fall semester, 2016)

### Reviewer for Following Professional journals

Global Change Biology, Global Ecology and Biogeography, Nature Scientific Report, Global Biogeochemical Cycles, Journal of Advances in Modeling Earth Systems, ISPRS Journal of Photogrammetry and Remote Sensing, Environmental Research Letters, Biogeosciences, Agricultural and Forest Meteorology, Environmental Pollution, Journal of Geophysical Research, Climatic Change, Advances in Atmospheric Sciences, Geography and Sustainability, Journal of Hydrology, Journal of the American Water Resources Association, Frontiers of Environmental Science and Engineering, Ecosystem Health and Sustainability, The scientific World Journal

Editorship for the following Professional journals

- Editor board member for “**Science of Remote Sensing**” since 2020
- Special issue editor for “Remote Sensing Applications in Agricultural Ecosystem” in “**Remote Sensing**” in 2020 and 2021
- Special issue Editor for “Sustainability with Changing Climate and Extremes” in “**Sustainability**” in 2021

Proposal Reviewer

NSF, SWISS-SNSF

Professional Organization Membership

- American Geophysical Union (AGU) since 2012
- Sino Ecologists Association Overseas (Sino Eco) since 2013

Research Grant

1. PI, Project Title: “Understanding the long-term coastal marsh loss and gain in Alabama and Mississippi”, Mississippi-Alabama Sea Grant Program (\$9,908), 7/1/2021 – 6/30/2022
2. Co-I, Project Title: “Demonstration of Silvicultural Systems, Forest Monitoring, and Wildlife Assessment Protocol for Restoring Bottomland Hardwood Communities (AR & MS)”, National Fish and Wildlife Foundation (NFWF, \$355,000), 1/1/2022 – 12/31/2024
3. PI, Project Title: “Assessing the Roles of Afforestation on Groundwater Resource Availability in the Mississippi Embayment, (USDA Forest Service, \$29,000), 10/1/2021 – 9/30/2023
4. Co-I, Project Title: “Climate Change Mitigation Assessment of Conservation Reserve Program Practices with Trees (USDA, \$2.8 M), 11/1/2021 – 10/31/2026

Peer-reviewed Publications (68 published, total citation: 2908, h-index: 30, Google scholar, by January 10, 2022)

2021

1. Ouyang, Y., Jin, W., Leininger, T., Feng, G., **Yang, J.** (2021) “Impacts of afforestation on groundwater resource: A case study for Upper Yazoo River watershed, Mississippi, USA” *Hydrological Sciences Journal*, 66(3)
2. Liu, Y., Liu, Y., Fu, J., Yang, C., Dong, X., Tian, H., Tao, B., **Yang, J.**, Wang, Y., Zou, Y., and Ke, Z. (2021) Projection of future wildfire emissions in the western United States under climate change: contributions from changes in wildfire, fuel loading, and fuel moisture, *International Journal of Wildland Fire*. <https://doi.org/10.1071/WF20190>

3. Hale, C. Granger, J., Paulson, A., Ramirez-Reyes, C., Ma, Q., **Yang, J.** (2021) “Modeling Habitat Suitability for *Stewartia ovata* Across the Southeastern United States” *Castanea* 86 (2)
4. Shi, H., Tian, H., **Yang, J.**, Pan, S., Fu, B., Lange, S., Reyer, C. (2021) “Terrestrial biodiversity threatened by increasing global aridity velocity under high level warming”, *Proceedings of the National Academy of Sciences*, 118(36)
5. Shi, H., Tian, H., Pan, N., Reyer, C.P., Ciais, P., Chang, J., Forrest, M., Frieler, K., Fu, B., Gädeke, A., Hickler, T., Ito, A., Ostberg, S., Pan, S., Stevanovic, M., **Yang, J.** (2021). Saturation of global terrestrial carbon sink under a high warming scenario. *Global Biogeochemical Cycles*, 35(10), p.e2020GB006800.
6. Pan, L., Xia, H., **Yang, J.**, Niu, W., Wang, R., Song, H., Guo, Y., Qin, Y. (2021) “Mapping cropping intensity in Huaihe basin using phenology algorithm, all Sentinel-2 and Landsat images in Google Earth Engine” *International Journal of Applied Earth Observation and Geoinformation*, 102
7. Xu, R., Tian, H., Pan, N., Thompson, R.L., Canadell, J.G., Davidson, E.A., Nevison, C., Winiwarter, W., Shi, H., Pan, S., Chang, J., Ciais, P., Dangal, S.R.S., Ito, A., Jackson, R.B., Joos, F., Laurerwald, R., Lienert, S., Maavara, T., Millet, D.B., Raymond, P.A., Regnier, P., Tubiello, F.N., Vuichard, N., Wells, K.C., Wilson, C., **Yang, J.**, Yao, Y., Zaehle, S., and Zhou, F. (2021). Magnitude and uncertainty of nitrous oxide emissions from North America based on bottom-up and top-down approaches: Informing future research and national inventories. *Geophysical Research Letters*, p.e2021GL095264.

2020

8. **Yang, J.**, Tao, B., Shi, H., Ouyang, Y., Pan, S., Ren, W., Lu, C. (2020), Integration of Remote Sensing, County-level Census, and Machine Learning for Century-long Regional Cropland data Reconstruction, *International Journal of Applied Earth Observation and Geoinformation*, 91
9. Pan, S., \***Yang, J.**, Tian, H., Shi, H., Chang, J., Ciais, P., Francois, L., Frieler, K., Fu, B., Thomas Hickler, T., Ito, A., Nishina, K., Ostberg, S., Reyer, C., Schaphoff, S., teinkamp, J., Zhao, F. (2020), Responses of terrestrial carbon fluxes to temperature and precipitation: carbon extreme versus climate extreme, *Journal of Geophysical Research: Biogeosciences*, 10.1029/2019JG005252 (\*Co-first author)
10. Tian, H., Xu, R., Canadell, J.G., Thompson, R.L., Winiwarter, W., Suntharalingam, P., Davidson, E.A., Ciais, P., Jackson, R.B, Janssens-Maenhout, G., Prather, M.J., Regnier, P., Pan, N., Pan, S., Peters, G.P., Shi, H., Tubiello, F.N., Zaehle, S., Zhou, F., Arneeth, A., Battaglia, G., Berthet, S., Bopp, L., Bouwman, A.F., Buitenhuis, E.T., Chang, J., Chipperfield, M.P., Dangal, S.R.S., Dlugokencky, E., Elkins, J.W., Eyre, B.D., Fu, B., Hall, B., Ito, A., Joos, F., Krummel, P.B., Landolfi, A., Laruelle, G.G., Lauerwald, R., Li, W., Lienert, S., Maavara, T., MacLeod, M., Millet, D.B., Olin, S., Patra, P.K., Prinn, R.G., Raymond, P.A., Ruiz, D.J., van der Werf, G.R., Vuichard, N., Wang, J., Weiss, R.F., Wells, K.C., Wilson, C., **Yang J.**, Yao Y. (2020) A comprehensive quantification of global nitrous oxide sources and sinks. *Nature*, 586(7828), pp.248-256.
11. Wang, Z., Tian, H., **Yang, J.**, Shi, H., Pan, S., Yao, Y., Banger, K. and Yang, Q., (2020) Coupling of Phosphorus Processes With Carbon and Nitrogen Cycles in the Dynamic Land Ecosystem Model: Model Structure, Parameterization, and Evaluation in Tropical Forests. *Journal of Advances in Modeling Earth Systems*, 12(10), p.e2020MS002123.

12. Zhang, J., Tian, H., Shi, H., Zhang, J., Wang, X., Pan, S. and **Yang, J.**, (2020), Increased greenhouse gas emissions intensity of major croplands in China: Implications for food security and climate change mitigation. *Global Change Biology*, 26(11), pp.6116-6133.
13. Yue, X., Liao, H., Wang, H., Zhang, T., Unger, N., Sitch, S., Feng, Z., **Yang, J.** (2020), Pathway dependence of ecosystem responses in China to 1.5°C global warming, *Atmospheric Chemistry and Physics*, 20, 2353–2366
14. Zou, Y., Wang, Y., Qian, Y., Tian, H., **Yang, J.**, Alvarado, E. (2020), Using CESM-RESFire to understand climate-fire-ecosystem interactions and Implications for Decadal Climate Variability, *Atmospheric Chemistry and Physics*, 20
15. Ren, W., Banger, K., Tao, B., Yang, J., Huang, Y., Tian, H. (2020), Global pattern and change of cropland soil organic carbon during 1901-2010: Roles of climate, atmospheric chemistry, land use and management, *Geography and Sustainability*, doi: <https://doi.org/10.1016/j.geosus.2020.03.001>
16. Tao, B., Yang, Y., **Yang, J.**, Smith, R., Fox, J., Ruane, A. C., ... & Ren, W. (2020). Recent Shrinkage and Fragmentation of Bluegrass Landscape in Kentucky. *Remote Sensing*, 12(11), 1815.
17. Tian, H., Xu, R., Pan, S., Yao, Y., Bian, Z., Cai, W.J., Hopkinson, C.S., Justic, D., Lohrenz, S., Lu, C. Ren, W., **Yang, J.** (2020) Long-Term Trajectory of Nitrogen Loading and Delivery From Mississippi River Basin to the Gulf of Mexico. *Global Biogeochemical Cycles*, 34(5), p.e2019GB006475.

2019

18. **Yang, J.**, Ren, W., Ouyang, Y., Feng, G., Tao, B., Granger, J.J. and Poudel, K.P., (2019). Projection of 21st century irrigation water requirement across the Lower Mississippi Alluvial Valley. *Agricultural Water Management*, 217, pp.60-72.
19. Xu, R., Tian, H., Pan, S., Prior, S., Feng, Y., Batchelor, W., Chen, J., and **Yang, J.**, (2019) Global ammonia emissions from synthetic nitrogen fertilizer applications in agricultural systems: empirical and process-based estimates and uncertainty. *Global Change Biology*. 25(1), pp.314-326
20. Tian, H., **Yang, J.**, Xu, R., Lu, C., Canadell, J., Davidson, E., Jackson, R., Arneeth, A., Chang, J., Ciais, P., Gerber, S., Ito, A., Joos, F., Lienert, S., Messina, P., Olin, S., Pan, S., Peng, C., Saikawa, E., Thompson, R., Vuichard, N., Winiwarer, W., Zaehle, S., Zhang, B., (2019). Global soil nitrous oxide emissions since the pre-industrial era estimated by an ensemble of Terrestrial Biosphere Models: Magnitude, attribution and uncertainty. *Global Change Biology*, 25(2), pp.640-659.
21. Zou, Y., Wang, Y., Ke, Z., Tian, H., **Yang, J.** and Liu, Y., (2019). Development of a REgion-Specific Ecosystem Feedback Fire (RESFire) Model in the Community Earth System Model. *Journal of Advances in Modeling Earth Systems*, 11(2), pp.417-445.
22. Dangal, S.R., Tian, H., Xu, R., Chang, J., Canadell, J.G., Ciais, P., Pan, S., **Yang, J.** and Zhang, B., (2019). Global Nitrous Oxide Emissions from Pasturelands and Rangelands: Magnitude, Spatiotemporal Patterns, and Attribution. *Global Biogeochemical Cycles*, 33(2), pp.200-222.
23. Lu, C., Tian, H., Zhang, J., Yu, Z., Pan, S., Dangal, S., Zhang, B., **Yang, J.**, Pederson, N. and Hessel, A., (2019). Severe Long-Lasting Drought Accelerated Carbon Depletion in the Mongolian Plateau. *Geophysical Research Letters*, 46(10), pp.5303-5312.

24. Xia, H., Zhao, J., Qin, Y., **Yang, J.**, Cui, Y., Song, H., Ma, L., Jin, N. and Meng, Q., (2019). Changes in Water Surface Area during 1989–2017 in the Huai River Basin using Landsat Data and Google Earth Engine. *Remote Sensing*, 11(15), p.1824.

2018

25. **Yang, J.**, Tian, H., Pan, S., Chen, G., Zhang, B. and Dangal, S., 2018. Amazon drought and forest response: Largely reduced forest photosynthesis but slightly increased canopy greenness during the extreme drought of 2015/2016. *Global change biology*, 24(5), pp.1919-1934.
26. Bastos, A., Friedlingstein, P., Sitch, S., Chen, C., Mialon, A., Wigneron, J., Arora, V., Briggs, P., Canadell, J., Ciais, P., Chevallier, F., Cheng, L., Delire, C., Haverd, V., Jain, A., Joos, F., Kato, E., Lienert, S., Lombardozzi, D., Melton, J., Myneni, R., Nabel, J., Pongratz, J., Poulter, B., Rödenbeck, C., Séférian, R., Tian, H., van Eck, C., Viovy, N., Vuichard, N., Walker, A., Wiltshire, A., **Yang, J.**, Zaehle, S., Zeng, N., Zhu, D., 2018. Impact of the 2015/2016 El Niño on the terrestrial carbon cycle constrained by bottom-up and top-down approaches. *Philosophical Transactions of the Royal Society B*, 373
27. Tian, H., Lu, C., Pan, S., **Yang, J.**, Miao, R., Ren, W., Yu, Q., Fu, B., Jin, F.F., Lu, Y. and Melillo, J., 2018. Optimizing resource use efficiencies in the food–energy–water nexus for sustainable agriculture: from conceptual model to decision support system. *Current Opinion in Environmental Sustainability*, 33, pp.104-113.
28. Pan, S., Chen, G., Ren, W., Dangal, S.R., Banger, K., **Yang, J.**, Tao, B. and Tian, H., 2018. Responses of global terrestrial water use efficiency to climate change and rising atmospheric CO<sub>2</sub> concentration in the twenty-first century. *International Journal of Digital Earth*, 11(6), pp.558-582.
29. García, A., Frieler, K., Reyer, C., Ciais, P., Chang, J., Ito, A., Nishina, K., François, L., Henrot, A., Hickler, T., Steinkamp, J., Rafique, R., Zhao, F., Ostberg, S., Schaphoff, S., Tian, H., Pan, S., **Yang, J.**, Morfopoulos, C., and Betts, R. 2018. Evaluating changes of biomass in global vegetation models: the role of turnover fluctuations and ENSO events. *Environmental Research Letters*, 13(7)
30. Tian, H., **Yang, J.**, Lu, C., Xu, R., Canadell, J.G., Jackson, R., Arneth, A., Chang, J., Chen, G., Ciais, P., Gerber, S., etc. 2018. The global N<sub>2</sub>O Model Intercomparison Project (NMIP): Objectives, Simulation Protocol and Expected Products. *Bulletin of the American Meteorological Society*, 99(6), pp.1231-1251.
31. Xu, R.T., Pan, S.F., Chen, J., Chen, G.S., **Yang, J.**, Dangal, S.R.S., Shepard, J.P. and Tian, H.Q., (2018). Half-Century Ammonia Emissions from Agricultural Systems in Southern Asia: Magnitude, Spatiotemporal Patterns, and Implications for Human Health. *GeoHealth*, 2(1), pp.40-53.
32. Zhang, J., Tian, H., **Yang, J.** and Pan, S., (2018) Improving Representation of Crop Growth and Yield in the Dynamic Land Ecosystem Model and its Application to China. *Journal of Advances in Modeling Earth Systems*, 10, 1680-1707.

2017



33. **Yang, J.**, Pan, S., Dangal, S., Zhang, B., Wang, S., Tian, H. (2017) Continental-scale quantification of post-fire vegetation greenness recovery in temperate and boreal North America. *Remote Sensing of Environment*, 199, 277-290
34. Zhang, J., **Yang, J.**, An, P., Ren, W., Pan, Z., Dong, Z., Han, G., Pan, Y., Pan, S., Tian, H. (2017) Enhancing agricultural drought induced by climate change and agricultural practices: Observational and experimental evidence from the semiarid area of northern China. *Agricultural and Forest Meteorology*, 243, 74-83
35. Dangal, S.R., Tian, H., Lu, C., Ren, W., Pan, S., **Yang, J.**, Di Cosmo, N. and Hessel, A., 2017. Integrating herbivore population dynamics into a global land biosphere model: Plugging animals into the earth system. *Journal of Advances in Modeling Earth Systems*, 9(8), pp.2920-2945.
36. Dangal, S., Tian, H., Zhang, B., Pan, S., Lu, C., **Yang, J.** (2017) Methane emission from global livestock sector during 1890-2014: magnitude, trends, and spatio-temporal patterns. *Global Change Biology*. DOI: 10.1111/gcb.13709
37. Chen, M., Rafique, R., Asrar, G., Bond-Lamberty, B., Ciais, P., Reyer, C., Ostberg, S., Zhao, F., Chang, J., Ito, A., **Yang, J.**, Zeng, N., Kalnay, E., West, T., Leng, G., Francois, L., Munhoven, G., Henrot, A., Tian, H., Pan, S., Nishina, K., Viovy, N., Morfopoulos, C., Betts, R., Schaphoff, S., Steinkamp, J., Hickler, T. (2017) Regional Contribution to Variability and Trends of Global Gross Primary Productivity. *Environmental Research Letters*, 12(10), p.105005.
38. Ito, A. Nishina, K. Reyer, C. François, L., Henrot, A., Munhoven, G., Jacquemin, I., Tian, H., **Yang, J.**, Pan, S., Morfopoulos, C., Betts, R., Hickler, T., Steinkamp, J., Ostberg, S., Schaphoff, S., Ciais, P., Chang, J., Rafique, R., Zeng, N., Zhao F. (2017) Photosynthetic productivity and its efficiencies in ISIMIP2a biome models: benchmarking for impact assessment studies. *Environmental Research Letters*, 12(8).
39. Fang, Y., Michalak, A., Schwalm, C., Huntzinger, D., Berry, J., Ciais, P., Piao, S., Poulter, B., Fisher, J., Cook, R., Hayes, D., Huang, M., Ito, A., Jain, A., Lei, H., Lu, C., Mao, J., Parazoo, N., Peng, S., Ricciuto, D., Shi, X., Tao, B., Tian, H., Wang, W., Wei, Y., **Yang, J.** (2017) Global land carbon sink response to temperature and precipitation varies with ENSO phase. *Environmental Research Letters*, 12(6)
40. Chang, J., Ciais, P., Wang, X., Piao, S., Asrar, G., Betts, R., Chevallier, F., Dury, M., François, L., Frieler, K., Cantú Ros, Henrot, A., Hickler, T., Ito, A., Morfopoulos, C., Munhoven, G., Nishina, K., Ostberg, S., Pan, S., Peng, S., Rafique, R., Reyer, C., Rödenbeck, C., Schaphoff, S., Steinkamp, J., Tian, H., Viovy, N., **Yang, J.**, Zeng, N., Zhao, F. (2017) Benchmarking of the ISI-MIP2 biome models. *Environmental Research Letters*, 12(4)
41. Zhang, B., Tian, H., Lu, C., Dangal, S., **Yang, J.**, Pan, S. (2017) Manure nitrogen production and application in cropland and rangeland during 1860–2014: A 5-minute gridded global data set for Earth system modeling, *Earth System Science Data*, 9, 667-678
42. Pan, S., Chen, G., Ren, W., Dangal, S., Banger, K., **Yang, J.**, Tao, B., Tian, H. (2017) Responses of global terrestrial water use efficiency to climate change and rising atmospheric CO<sub>2</sub> concentration in the twenty-first century. *International Journal of Digital Earth*, 1-25
43. Xu, R., Tian, H., Lu, C., Pan, S., Chen, J., **Yang, J.**, Zhang, B. (2017) Estimation of pre-industrial nitrous oxide emissions from the land biosphere, *Climate of the Past*, 13

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2016

44. Tian, H., Lu, C., Ciais, P., Michalak, A., Canadell, J., Saikawa, E., Huntzinger, D., Gurney, K., Sitch, S., Zhang, B., **Yang, J.**, Bousquet, P., Bruhwiler, L., Chen, G., Dlugokencky, E., Friedlingstein, P., Melillo, J., Pan, S., Poulter, B., Prinn, R., Saunois, M., Schwalm, C., Wofsy, S. (2016) The terrestrial biosphere as a net source of greenhouse gases to the atmosphere. *Nature*, 531(7593), 225-228.
45. Tian, H., Ren, W., Tao, B., Sun, G., Chappelka, A., Wang, X., Pan, S., **Yang, J.**, Liu, J., Felzer, B., Melillo, J., Reilly, J. (2016) Climate extremes and ozone pollution: a growing threat to China's food security. *Ecosystem Health and Sustainability*. doi: 10.1002/ehs2.1203
46. Zhang, B., Tian, H., Ren, W., Tao, B., Lu, C., **Yang, J.**, Banger, K., Pan, S. (2016) Methane Emissions from global rice fields: Magnitude, spatio-temporal patterns and environmental controls, *Global Biogeochemical Cycles*, 30(9), 1246-1263
47. Ren, W., Tian, H., Cai, W., Lohrenz, S., Hopkinson, C., Huang, W., **Yang, J.**, Tao, B., Pan, S., He, R. (2016) Century-long increasing trend and variability of dissolved organic carbon export from the Mississippi River basin driven by natural and anthropogenic forcing, *Global Biogeochemical Cycles*, 30(9), 1288-1299
48. Ito, A., Inatomi, M., Huntzinger, D., Schwalm, C., Michalak, A., Cook, R., King, A., Mao, J., Wei, Y., Post, W., Wang, W., Arain, M., Huang, S., Hayes, D., Ricciuto, D., Shi, X., Huang, H., Lei, H., Tian, H., Lu, C., **Yang, J.**, Tao, B., Jain, A., Poulter, B., Peng, S., Ciais, P., Fisher, J., Parazoo, N., Schaefer, K., Peng, C., Zeng N., Zhao, F. (2016) Decadal trends in the seasonal-cycle amplitude of terrestrial CO<sub>2</sub> exchange resulting from the ensemble of terrestrial biosphere models. *Tellus B*, 68 (1), 28968

2015

49. **Yang, J.**, Tian, H., Tao, B., Ren, W., Lu, C., Pan, S., Wang, Y., Liu, Y. (2015) Century-scale patterns and trends of global pyrogenic carbon emissions and fire influences on terrestrial carbon balance. *Global Biogeochemical Cycles*, 29(9), 1549-1566
50. **Yang, J.**, Tian, H., Tao, B., Ren, W., Pan, S., Liu, Y., Wang, Y. (2015) A growing importance of large fires in conterminous United States during 1984–2012. *Journal of Geophysical Research: Biogeosciences*, , 120(12), 2625-2640
51. Tian, H., Lu, C., **Yang, J.**, Banger, K., Huntzinger, D., Schwalm, C., Michalak, A., Cook, R., Ciais, P., Hayes, D., Huang, M., Ito, A., Jain, A., Lei, H., Mao, J., Pan, S., Post, W., Peng, S., Poulter, B., Ren, W., Ricciuto, D., Schaefer, K., Shi, X., Tao, B., Wang W., Wei, Y., Yang, Q., Zhang, B., Zeng, N. (2015) Global patterns and controls of soil organic carbon dynamics as simulated by multiple terrestrial biosphere models: Current status and future directions. *Global Biogeochemical Cycles*, 29(6), 775-792
52. Tian, H., Ren, W., **Yang, J.**, Tao, B., Cai, W., Lohrenz, S., Hopkinson, C., Liu, M., Yang, Q., Lu, C., Zhang, B., Banger, K., Pan, S., He, R., Xue, Z. (2015) Climate extremes dominating seasonal and interannual variations in carbon export from the Mississippi River Basin. *Global Biogeochemical Cycles*, 19(9), 1333-1347



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53. Yang, Q., Tian, H., Friedrichs, M., Liu, M., Li, X., **Yang, J.** (2015) Hydrological Responses to Climate and Land-Use Changes along the North American East Coast: A 110-Year Historical Reconstruction. *JAWRA Journal of the American Water Resources Association*, 51, 47-67.
54. Yang, Q., Tian, H., Li, X., Tao, B., Ren, W., Chen, G., Lu, C., **Yang, J.**, Pan, S., Banger, K., Zhang, B. (2015) Spatiotemporal patterns of evapotranspiration along the North American east coast as influenced by multiple environmental changes. *Ecohydrology*, 8, 714-725.
55. Zhang, J., Ren, W., An, P., Pan, Z., Wang, L., Dong, Z., He, D., **Yang, J.**, Pan, S., Tian, H. (2015) Responses of Crop Water Use Efficiency to Climate Change and Agronomic Measures in the Semiarid Area of Northern China. *PLoS ONE*, 10, e0137409.
56. Banger, K., Tian, H., Tao, B., Lu, C., Ren, W., **Yang, J.** (2015) Magnitude, Spatiotemporal Patterns, and Controls for Soil Organic Carbon Stocks in India during 1901–2010. *Soil Science Society of America Journal*, 79, 864-875.
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#### Selected Conference Presentation/Posters

- Zhou, X and **Yang, J.** (2020) Mapping Flooding Regimes in the Lower Mississippi Alluvial Valley during 2001-2018 using Satellite Remote Sensing, ESA annual meeting, online
- Shi and Co-authors including Yang (2020). Greenhouse Gas Emissions from Land Use Change in the Contiguous United States during 1900 – 2019. Virtual Poster presentation at AGU Fall Meeting.
- **Yang, J.**, H. Tian et al. (2017) Fire-induced forest mortality in the pan boreal region. American Geophysical Union fall meeting, New Orleans, LA (Oral presentation)
- **Yang, J.**, H. Tian, B. Tao, et al. (2015) Drought and Wildfire Impacts on Carbon and Water Cycles in Terrestrial Ecosystems. American Geophysical Union fall meeting, San Francisco, CA (Oral presentation)
- **Yang, J.**, H. Tian, B. Tao, et al. (2014) Global Biomass burning and its impacts on terrestrial carbon Fluxes from 1901 to 2010. American Geophysical Union fall meeting, San Francisco, CA (Poster presentation)
- Ren, W., H. Tian, **J. Yang** et al. (2013) Crop productivity and nitrogen and carbon losses from agroecosystems of the Mississippi River Basin in response to climate and land use change during 1901-2010. 98th Ecological Society of America (ESA) Annual Meeting, Minneapolis, MN (Poster presentation)

- **Yang, J.**, H. Tian, B. Tao, et al. (2012) Global Wildfire Emissions and Fuel Load as Controlled by Multiple Environmental Changes in the 20th Century. American Geophysical Union fall meeting, San Francisco, CA (Poster presentation)
- **Yang, J.**, H. Tian, B. Tao, et al. (2011) Predict wildfires in terrestrial ecosystems of the United States during 2011-2099. Forest Ecology and Management Conference: Exploring the Mega-Fire Reality, Tallahassee, FL (Poster presentation)