Curriculum vitae

Jinyun Tang

1 Cyclotron Road, M/S 74R316C, Berkeley, CA 94720
Office Phone: 510-486-5792
Fax: 510-486-7070
E-Mail: jinyuntang@lbl.gov

Education

Ph.D.	Atmospheric Sciences, Purdue University, 2011
M.A.	Atmospheric Sciences, Nanjing University, P. R. China, 2006
B.S.	Atmospheric Sciences, Nanjing University, P. R. China, 2003

Professional Appointments/Employment

Staff Scientist, Lawrence Berkeley National Laboratory	2020 – now
Research Scientist, Lawrence Berkeley National Laboratory	2013 – 2020
Postdoc Fellow, Lawrence Berkeley National Laboratory	2011 – 2013

Editorial services

Associated editor, Vadose Zone Journal, 2019-

Editorial board of the MDPI journal "climate", 2019-

Honors and Awards

DOE ACME Outstanding Contribution Award for Earth System Model Development	2016
Honorable Mention for the Gene E. Likens Award	2014
Bilsland Dissertation Fellowship	2010 – 2011
NASA Earth System Science (ESS) Fellowship	2007 – 2010
PCCRC fellowship	2006 – 2007

Publications

Peer Reviewed Publications

1. Tang, J.Y. and W.J. Riley (2020), On the modeling paradigm of plant root nutrient acquisition, Plant and Soil.

2. Burrows, S. M., et al. (2020), The DOE E3SM v1.1 Biogeochemistry Configuration: Description and Simulated Ecosystem-Climate Responses to Historical Changes in Forcing, J Adv Model Earth Sy, 12(9), doi:ARTN e2019MS001766 10.1029/2019MS001766.
3. **Tang, J. Y**., and W. J. Riley (2020), Linear two-pool models are insufficient to infer soil organic matter decomposition temperature sensitivity from incubations, Biogeochemistry, 149(3), 251-261, doi:10.1007/s10533-020-00678-3.
4. Peng, B., et al. (2020), Towards a multiscale crop modelling framework for climate change adaptation assessment, Nat Plants, 6(4), 338-348, doi:10.1038/s41477-020-0625-3.
5. Riley, W. J., C. Sierra, **J. Y. Tang**, N. J. Bouskill, Q. Zhu, and R. Abramoff (2020), Next generation soil biogeochemistry model representations: A proposed community open source model farm (BeTR-S) in *Multi-scale Biogeochemical Processes in Soil Ecosystems: Critical Reactions and Resilience to Climate Changes*, edited by Y. Yang, M. Keiluweit, N. Senesi and B. Xing.
6. Tang, J. Y., and W. J. Riley (2019), Competitor and substrate sizes and diffusion together define enzymatic depolymerization and microbial substrate uptake rates, *Soil Biol Biochem*, *139*, doi:ARTN 107624 10.1016/j.soilbio.2019.107624.
7. Dwivedi, D., **J. Y. Tang**, N. Bouskill, K. Georgiou, S. S. Chacon, and W. J. Riley (2019), Abiotic and Biotic Controls on Soil Organo-Mineral Interactions: Developing Model Structures to Analyze Why Soil Organic Matter Persists, *Rev Mineral Geochem*, *85*, 329-348, doi:10.2138/rmg.2019.85.11.
8. Cai, X. T., W. J. Riley, Q. Zhu, **J. Y. Tang**, Z. Z. Zeng, G. Bisht, and J. T. Randerson (2019), Improving Representation of Deforestation Effects on Evapotranspiration in the E3SM Land Model, *J Adv Model Earth Sy*, *11*(8), 2412-2427, doi:10.1029/2018ms001551.
9. Golaz, J. C., et al. (2019), The DOE E3SM Coupled Model Version 1: Overview and Evaluation at Standard Resolution, *J Adv Model Earth Sy*, *11*(7), 2089-2129, doi:10.1029/2018ms001603.
10. Lawrence, D. M., et al. (2019), The Community Land Model Version 5: Description of new features, benchmarking, and impact of forcing uncertainty, *J* Adv Model Earth Sy, 11(12), 4245-4287, doi:10.1029/2018ms001583.
11. Zhu, Q., W. J. Riley, **J. Y. Tang**, N. Collier, F. M. Hoffman, X. J. Yang, and G. Bisht (2019), Representing nitrogen, phosphorus, and carbon interactions in the E3SM land model: development and dlobal benchmarking, J Adv Model Earth Sy, 11(7), 2238-2258, doi:10.1029/2018ms001571.
12. Wang, F. S., G. H. Ni, W. J. Riley, **J. Y. Tang**, D. J. Zhu, and T. Sun (2019), Evaluation of the WRF lake module (v1.0) and its improvements at a deep reservoir, Geosci Model Dev, 12(5), 2119-2138, doi:10.5194/gmd-12-2119-2019.
13. Abramoff, R. Z., M. S. Torn, K. Georgiou, **J. Y. Tang**, and W. J. Riley (2019), Soil organic matter temperature sensitivity cannot be directly inferred from spatial gradients, Global Biogeochem Cy, 33(6), 761-776, doi:10.1029/2018gb006001.
14. **Tang, J. Y**., and W. J. Riley (2019), A theory of effective microbial substrate affinity parameters in variably saturated soils and an example application to aerobic soil heterotrophic respiration, J Geophys Res-Biogeo, 124(4), 918-940, doi:10.1029/2018jg004779.
15. Riley, W. J., Q. Zhu, and **J. Y. Tang** (2018), Weaker land-climate feedbacks from nutrient uptake during photosynthesis-inactive periods, Nat Clim Change, 8(11), 1002-1006, doi:10.1038/s41558-018-0325-4.
16. Gao, M., H. Y. Li, D. Liu, **J.Y. Tang**, X. Chen, X. Chen, G. Bloschl, and L. R. Leung (2018), Identifying the dominant controls on macropore flow velocity in soils: A meta-analysis, J Hydrol, 567, 590-604, doi:10.1016/j.jhydrol.2018.10.044.

17. Sulman, B. N., et al. (2018), Multiple models and experiments underscore large uncertainty in soil carbon dynamics, Biogeochemistry, 141(2), 109-123, doi:10.1007/s10533-018-0509-z.
18. Covino, T., H. E. Golden, H. Y. Li, and **J. Y. Tang** (2018), Aquatic Carbon-Nutrient Dynamics as Emergent Properties of Hydrological, Biogeochemical, and Ecological Interactions: Scientific Advances, Water Resour Res, 54(10), 7138-7142, doi:10.1029/2018wr023588.
19. **Tang, J. Y**., and W. J. Riley (2018), Predicted Land Carbon Dynamics Are Strongly Dependent on the Numerical Coupling of Nitrogen Mobilizing and Immobilizing Processes: A Demonstration with the E3SM Land Model, Earth Interact, 22(11), doi:ARTN 11 10.1175/EI-D-17-0023.s1.
20. **Tang, J. Y**., and W. J. Riley (2017), SUPECA kinetics for scaling redox reactions in networks of mixed substrates and consumers and an example application to aerobic soil respiration, Geosci Model Dev, 10(9), 3277-3295, doi:10.5194/gmd-10-3277-2017.
21. Dwivedi, D., W. J. Riley, M. S. Torn, N. Spycher, F. Maggi, and **J. Y. Tang** (2017), Mineral properties, microbes, transport, and plant-input profiles control vertical distribution and age of soil carbon stocks, Soil Biol Biochem, 107, 244-259, doi:10.1016/j.soilbio.2016.12.019.
22. Zhu, Q., W. J. Riley, and **J. Y. Tang** (2017), A new theory of plant-microbe nutrient competition resolves inconsistencies between observations and model predictions, Ecol Appl, 27(3), 875-886, doi:10.1002/eap.1490.
23. Le Roux, X., et al. (2016), Predicting the Responses of Soil Nitrite-Oxidizers to Multi-Factorial Global Change: A Trait-Based Approach, Front Microbiol, 7, doi:ARTN 628 10.3389/fmicb.2016.00628.
24. **Tang, J. Y**., and W. J. Riley (2016), Technical Note: A generic law-of-the-minimum flux limiter for simulating substrate limitation in biogeochemical models, Biogeosciences, 13(3), 723-735, doi:10.5194/bg-13-723-2016.
25. Zhu, Q., W. J. Riley, **J.Y. Tang**, and C. D. Koven (2016), Multiple soil nutrient competition between plants, microbes, and mineral surfaces: model development, parameterization, and example applications in several tropical forests, Biogeosciences, 13(1), 341-363, doi:10.5194/bg-13-341-2016.
26. **Tang, J. Y**. (2015), On the relationships between the Michaelis-Menten kinetics, reverse Michaelis-Menten kinetics, equilibrium chemistry approximation kinetics, and quadratic kinetics, Geosci Model Dev, 8(12), 3823-3835, doi:10.5194/gmd-8-3823-2015.
27. **Tang, J. Y**., W. J. Riley, and J. Niu (2015), Incorporating root hydraulic redistribution in CLM4.5: Effects on predicted site and global evapotranspiration, soil moisture, and water storage, J Adv Model Earth Sy, 7(4), 1828-1848, doi:10.1002/2015ms000484.
28. **Tang, J. Y**., and W. J. Riley (2015), Weaker soil carbon-climate feedbacks resulting from microbial and abiotic interactions, Nat Clim Change, 5(1), 56-60, doi:10.1038/Nclimate2438.
29. Bouskill, N. J., W. J. Riley, and **J. Y. Tang** (2014), Meta-analysis of high-latitude nitrogen-addition and warming studies implies ecological mechanisms overlooked by land models, Biogeosciences, 11(23), 6969-6983, doi:10.5194/bg-11-6969-2014.
30. **Tang, J. Y**., and W. J. Riley (2014), Technical Note: Simple formulations and solutions of the dual-phase diffusive transport for biogeochemical modeling, Biogeosciences, 11(14), 3721-3728, doi:10.5194/bg-11-3721-2014.
31. Riley, W. J., F. Maggi, M. Kleber, M. S. Torn, **J. Y. Tang**, D. Dwivedi, and N. Guerry (2014), Long residence times of rapidly decomposable soil organic matter: application of a multi-phase, multi-component, and vertically resolved model (BAMS1) to soil carbon dynamics, Geosci Model Dev, 7(4), 1335-1355, doi:10.5194/gmd-7-1335-2014.
32. **Tang, J. Y**., and W. J. Riley (2013), A total quasi-steady-state formulation of substrate uptake kinetics in complex networks and an example application to microbial litter decomposition,

Biogeosciences, 10(12), 8329-8351, doi:10.5194/bg-10-8329-2013. (**Awarded honorable mention for the Gene E. Likens award by the Ecological Society of America**)

33. Koven, C. D., W. J. Riley, Z. M. Subin, **J. Y. Tang**, M. S. Torn, W. D. Collins, G. B. Bonan, D. M. Lawrence, and S. C. Swenson (2013), The effect of vertically resolved soil biogeochemistry and alternate soil C and N models on C dynamics of CLM4, Biogeosciences, 10(11), 7109-7131, doi:10.5194/bg-10-7109-2013.
34. Zhuang, Q. L., M. Chen, K. Xu, **J. Y. Tang**, E. Saikawa, Y. Y. Lu, J. M. Melillo, R. G. Prinn, and A. D. McGuire (2013), Response of global soil consumption of atmospheric methane to changes in atmospheric climate and nitrogen deposition, Global Biogeochem Cy, 27(3), 650-663, doi:10.1002/gbc.20057.
35. **Tang, J. Y**., and W. J. Riley (2013), Impacts of a new bare-soil evaporation formulation on site, regional, and global surface energy and water budgets in CLM4, J Adv Model Earth Sy, 5(3), 558-571, doi:10.1002/jame.20034.
36. **Tang, J. Y**., and W. J. Riley (2013), A new top boundary condition for modeling surface diffusive exchange of a generic volatile tracer: theoretical analysis and application to soil evaporation, Hydrol Earth Syst Sc, 17(2), 873-893, doi:10.5194/hess-17-873-2013.
37. **Tang, J. Y**., W. J. Riley, C. D. Koven, and Z. M. Subin (2013), CLM4-BeTR, a generic biogeochemical transport and reaction module for CLM4: model development, evaluation, and application, Geosci Model Dev, 6(1), 127-140, doi:10.5194/gmd-6-127-2013.
38. Bouskill N., **Tang J. Y**., Riley W. J., and Brodie E. L.: Trait-based representation of biological nitrification: Model development, testing, and predicted community composition. Front. Microbio. 3:364. doi: 10.3389/fmicb.2012.00364, 2012.
39. **Tang, J.Y.**, and Q. Zhuang (2011), Technical Note: Propagating correlations in atmospheric inversions using different Kalman update smoothers, Atmos Chem Phys, 11(3), 921-929, doi:10.5194/acp-11-921-2011.
40. **Tang, J.Y.**, Q. Zhuang, R. D. Shannon, and J. R. White (2010), Quantifying wetland methane emissions with process-based models of different complexities, Biogeosciences, 7(11), 3817-3837, doi:10.5194/bg-7-3817-2010.
41. **Tang, J. Y**., and Q. L. Zhuang (2011), Modeling soil thermal and hydrological dynamics and changes of growing season in Alaskan terrestrial ecosystems, Climatic Change, 107(3-4), 481-510, doi:10.1007/s10584-010-9988-1.
42. **Tang, J. Y**., and Q. L. Zhuang (2009), A global sensitivity analysis and Bayesian inference framework for improving the parameter estimation and prediction of a process-based Terrestrial Ecosystem Model, J Geophys Res-Atmos, 114, doi:Artn D15303 10.1029/2009jd011724.
43. **Tang, J. Y**., and Q. L. Zhuang (2008), Equifinality in parameterization of process-based biogeochemistry models: A significant uncertainty source to the estimation of regional carbon dynamics, J Geophys Res-Biogeo, 113(G4), doi:Artn G04010 10.1029/2008jg000757.
44. Wang, Y., N. H. Cai, and **J. Y. Tang** (2008), A two-wave scheme for orographic gravity wave drag parameterization, Acta Meteorol Sin, 22(2), 152-161.
45. **Tang, J. Y**., J. Tang, and Y. Wang (2007), Analytical investigation on 3D non-Boussinesq mountain wave drag for wind profiles with vertical variations, Appl Math Mech-Engl, 28(3), 317-325, doi:DOI 10.1007/s10483-007-0305-z.

Projects & Grants

Funded

1. Systems for Monitoring and Analytics for Renewable Transportation Fuels from Agricultural Resources and Management, LBNL PI, with project PI. Kaiyu Guan from UIUC, DOE ARPA-E SMARTFARM program, 2020-2024
2. Lawrence Livermore National Laboratory Science Focus Area, Microbes persist: Systems biology of the soil microbiome, Co-investigator, PI, J.Pett-Ridge, DOE-OBER, 2018-2022.
3. Understanding litter input controls on soil organic matter turnover and formation are essential for improving carbon-climate feedback predictions for Arctic Tundra System, DOE-TES, DE-FOA-0000749, Co-I with Matthew Wallenstein, Rich Conant, M. Francesca Cotrufo, Eldor Paul and Bill Riley, funded, 150K out of 1500K for 2013-2015.
4. ESD Early Career Development Grant, PI, 40K, 2014.
5. Improving a process-based biogeochemistry model using an atmospheric transport chemistry model and in-situ and remotely sensed terrestrial and atmospheric data, PI, 84K, 2007-2011.

Other currently affiliated projects

1. The Next Generation Ecosystem Experiment-Arctic, PI, Stan Wullschleger. Role: task leader
2. Energy Exascale Earth system model, PI, David Bader. Role: task leader
3. Quantifying feedbacks and uncertainties of biogeochemical processes in earth system models, PI, Forrest Hoffman. Role: task leader

Invited talks

1. **Tang J.Y.:** Biogeochemical scaling in earth system land models, Earth Sciences Department, Tsinghua University, August, 2019.
2. **Tang J.Y.:** Thinking the soil carbon cycle in a mathematical physics way, The 11th International Symposium on Environmental Geochemistry (ISEG), Beijing University, Aug., 2019.
3. **Tang J.Y**. and Riley W. J.: Modeling the hysteretic moisture and temperature responses of soil carbon decomposition resulting from organo-mineral interactions, AGU, Fall annual meeting, New Orleans, 2017.
4. **Tang J.Y**.: Scaling the substrate limitation in soil biogeochemical systems, NRES department seminar, Sep, 2017.
5. **Tang J**.Y., Riley W.J., and Zhu Q.: Towards a robust representation of nutrient control of the land carbon cycle: Formulation and numeric, NCAR land working group meeting, Feb, 2017
6. **Tang J.Y.:** Seeking for a robust land biogeochemical modeling, Pacific Northwest National Laboratory, July 2016.
7. **Tang J.Y.:** Biogeochemical scaling using the Equilibrium Chemistry Approximation: theory and applications, BioEpic seminar series, Lawrence Berkeley National Laboratory, June, 2016
8. **Tang J.Y.** and Riley W.J.: Huge divergence in land-atmosphere carbon exchange resulting from ambiguous numerical coupling between carbon and nitrogen dynamics, ACME all hands meeting, June, 2016**.**
9. **Tang J. Y.**: Mathematical scaling of biotic and abiotic interactions in biogeochemical modeling for climate-biogeochemistry interactions**,** China University of Geosciences, China, October 2015.

10. **Tang J.Y.:** Carbon and nitrogen coupling in land surface models, Nanjing University, China, October 2015.
11. **Tang J. Y.**: Tracking ET bias in CLM4.X models, Nanjing University, China, June, 2015.
12. **Tang J. Y.** and Riley W.J.: Another Inconvenient Truth: Evidence That Q_{10} Is Not a Static Parameter. SSSA Fall meeting, Long Beach Island, November 2014.
13. **Tang J. Y.** and Riley W.J.: The emergent temperature sensitivity of decomposition from interactions between microbes, substrates, and the soil environment, AGU Fall meeting, SF, Dec. 2013.
14. **Tang J. Y.,** Riley W.J., Bouskill N., and Brodie E.: Let the microbes explicitly carry out the reactions: a new paradigm to the modeling of soil carbon-nutrient dynamics, AGU Fall meeting, SF, Dec. 2013.
15. **Tang J. Y.,** Riley W. J., Koven C. D., and Subin Z. M.: A reactive transport module of land biogeochemistry in the Community Land Model: Description, evaluation, and application, SSSA, Tampa, November 2013.
16. **Tang J. Y.**, Bouskill N. J., Riley W. J., and Brodie E. L.: Incorporating enzyme and microbial dynamics into the global land model CLM4: Plans, progress and preliminary results, Colorado State University, Fort Collins CO, May, 2012.
17. **Tang J. Y.,** Riley W. J., Subin Z., Koven C. D., and Torn M.: Biogeochemical transport and reaction modeling for CLM4: developing the CLM4-BeTR, University of Alaska, August 2011.

Conference Activity/Participation (part of 2014-2019)

1. **Tang J.Y.:** Predicting the Moisture Dependence of Soil Heterotrophic Respiration Using First Principles**,** SSSA, San Antonio, 2019.
2. **Tang J.Y.** and Riley W.J.: Non-robust numerical implementations impact global carbon and water cycle simulations: a demonstration with two ESM land models, AGU Fall meeting, San Francisco, CA, December 12-16, 2016.
3. **Tang J.Y**.: Three examples of poor land model performances resulting from asynchronous coupling of tightly coupled processes, PDC 16 workshop, Pacific Northwest National Laboratory, September, 2016.
4. **Tang J.Y.** and Riley W. J.: Implementation ambiguity: The fifth element long lost in uncertainty budgets for land biogeochemical modeling, AGU Fall meeting, San Francisco, CA, December 14-18, 2015.
5. Abramoff R.Z., **Tang J.Y.**, Georgiou K. et al.: Modelling the effect of substrate stoichiometry on microbial use efficiency and soil C cycling, AGU Fall meeting, San Francisco, CA, December 14-18, 2015.
6. Zhu X., **Tang J.Y.**, Riley W.J. et al.: Explicit representation of microbes, enzymes, mineral surfaces, and isotopic tracers helps explain soil organic carbon decomposition and priming, AGU Fall meeting, San Francisco, CA, December 14-18, 2015.
7. Zhu Q., Riley W.J., **Tang J.Y.**, and Koven C.D.: Soil nutrient competition in earth system models: an important but underappreciated driver of plant responses to nutrient fertilization, AGU Fall meeting, San Francisco, CA, December 14-18, 2015.
8. Bouskill N. J., Riley W. J., Cheng Y., and **Tang J.Y.:** A microbial model of nitrous oxide production that differentiates nitrification and denitrification production across spatial and temporal scales, AGU Fall meeting, San Francisco, CA, December 15-19, 2015.
9. Georgiou K., **Tang J. Y.**, Riley W. J., and Torn M. S.: Characterizing feedback control mechanisms in nonlinear microbial models of soil organic matter decomposition by stability analysis, AGU Fall meeting, San Francisco, CA, December 15-19, 2014.

10. Riley, W. J. and **Tang J. Y.**: Interactions between mineral surfaces, substrates, enzymes, and microbes result in hysteretic temperature sensitivities and microbial carbon use efficiencies and weaker predicted carbon-climate feedbacks, AGU Fall meeting, San Francisco, CA, December 15-19, 2014
11. Zhu Q., Riley W. J., Chambers J. Q., and **Tang J. Y.:** Modeling plant, microorganisms, and mineral surface competition for soil nitrogen and phosphorus: Competition representations and ecological significance, AGU Fall meeting, San Francisco, CA, December 15-19, 2014.
12. Riley W. J., **Tang J. Y.,** and Dwivedi D., Torn M. S., Maggi F., and Kleber M.: Emergent SOM dynamics considering interactions between microbial physiology, microbial competition, mineral interactions, vertical transport, and temperature, AGU Fall meeting, San Francisco, CA, December 15-19, 2014
13. Zhu X., **Tang J. Y.**, Riley W. J., Wallenstein M. D., Cotrufo M. F., Machmuller M. B., and Lynch L.: Evaluation of a thermodynamically based soil microbial decomposition model based on a 13C tracer study in arctic tundra soils, AGU Fall meeting, San Francisco, CA, December 15-19, 2014.
14. **Tang J. Y.,** and Riley W. J.: Explicit representation of microbe-mineral interactions improves soil carbon cycle modeling, Biosciences strategic implementation retreat, Berkeley, CA, October 28-29, 2014.
15. **Tang J. Y.,** and Riley W. J.: Predicting the emergent response of soil carbon decomposition to temperature change using a model of microbes, mineral surfaces and thermodynamics, SOM-6 workshop, Kiawah island, SC, October 5-9, 2014.
16. Bouskill N. J., Cheng Y., **Tang J. Y.,** and Riley W.J.: A biogeographically emergent model of nitrogen fixation: Coupling nitrogen availability to organic matter cycling, SOM-6 workshop, Kiawah island, SC, October 5-9, 2014.
17. Riley W. J., and **Tang J. Y.**: Mechanistic treatment of soil organic matter and litter dynamics in the global land model CLM4.5, SOM-6 workshop, Kiawah Island, SC, October 5-9, 2014.
18. Riley W. J., Torn M. S., **Tang J. Y.**, Dwivedi D., Maggi F. M., and Kleber M.: Mineral interactions, microbial processes, and transport explain long residence times of rapidly decomposable deep soil organic matter, Complex Soil Systems Conference, Berkeley, CA, 2014.
19. **Tang J. Y.,** and Riley W. J.: A zero-sum-game-based model for litter decomposition dynamics, Complex Soil Systems Conference, Berkeley, CA, 2014.
20. Bouskill N. J., Le Roux X., and **Tang J. Y.**: Predicting soil bacterial responses to multi-factor global change with trait-based modeling, Complex Soil Systems Conference, Berkeley, CA, 2014.
21. Cheng Y., Riley W. J., **Tang J. Y.,** and Bouskill N. J.: A trait-based model for understanding rates, patterns, and ecological consequences of microbial nitrogen fixation in high-latitude terrestrial ecosystems, Complex Soil Systems Conference, Berkeley, CA, 2014.
22. Riley W. J., and **Tang J. Y.**: Impacts of root hydraulic redistribution on global evapotranspiration in a climate-scale land model, 99th ESA Annual Meeting, Sacramento, CA, August 10-15, 2014.
23. Riley W. J., Torn M. S., **Tang J. Y.**, Dwivedi D., Maggi F., and Kleber M.: Long residence times of rapidly decomposable soil organic matter: A mechanistic modeling study, Goldschmidt, June 8-13, 2014.
24. **Tang J. Y.,** and Riley W. J.: Thermodynamically regulated interactions between microbial community dynamics and abiotic minerals control the emergent temperature response of soil organic matter decomposition, Climate Modeling Principal Investigator Meeting, Potomac, MD, May 12-14, 2014.
25. Brodie E.L., King E., **Tang J. Y.**, Karaoz U., Molins S., Riley W. J., and Bouskill N. J.: Genome informed trait-based models for improved prediction of microbial dynamics and biogeochemical rates, 99th ESA Annual Meeting, Sacromento, CA, August 10-15, 2014.

26. Riley W. J., Torn M. S., **Tang J. Y.**, Dwivedi D., Maggi F., and Kleber M.: Long residence times of rapidly decomposable soil organic matter: A mechanistic modeling study, Goldschmidt, Sacramento, CA, 2014.
27. King E., Karaoz U., Cheng Y., **Tang J. Y.**, Riley W. J., Bouskill N. J., and Brodie E. L.: Trait-based approaches to modeling the microbial biogeochemistry from terrestrial to aquatic ecosystems, Sacromento, CA, 2014.
28. Riley W. J., **Tang J. Y.**, Bisht G., Koven C. D., Ghimire B., and Pau G.: Integrating fine-scale microbial dynamics, transport, and abiotic interactions into the global land model CLM4.5, 27th ACS National Meeting and Exposition, Dallas, Texas, March, 2014.

Teaching Experience

- Guest lecture for EAS 591 W & AGRY 598A, Purdue University 2011
- TA for undergraduate fluid mechanics, Nanjing University 2005

Professional Service

Proposal Reviewer/Panel Member

European Research Council, Department of Energy, NASA, Kansas University NSF EPSCOR, Swiss National Science Foundation

Journal Reviewer

Climate, Global Change Biology, Journal of the Royal Society Interface, Ecology and Evolution, Tellus B, JAMES, Biogeosciences, Environmental Modeling & Software, Remote Sensing of Environment, Geoscientific model development, Environmental Earth Sciences, JGR-Biogeoscience, J of Ecology, J of Ecosystems, Vadose Zone Journal, Surveys in Geophysics, Science of the Total Environment, J. of Remote Sensing, Nature Climate change.

Workshop/Conference Sessions

Session Chair, with Peng B., Guan K. and Jin Z., Sustainable agriculture and climate change, AGU Fall Meeting 2020

Session Chair, with Gustaf Hugelius, ILAMB2016, Soil Carbon and Nutrient Biogeochemistry 2016

Session Chair, with P. S. Nico, N. J. Hess, Soil organic matter dynamics: Novel techniques, big data and functional models III 2014

Session Chair, with N. Bouskill, W.J. Riley and E. Brodie, B038. Integrating microbial processes into ecosystem models of carbon and nitrogen cycling, AGU Fall Meeting 2012

Advisees

Postdocs

Xudong Zhu, Qing Zhu, Rose Abramoff, Zelalem Mekonnen, Xitian Cai (co-advised with W.J. Riley), Yiwei Cheng (co-advised with N.J. Bouskill), Yang Qu (co-advised with Kaiyu Guan at UIUC), Gianna Marschmann (LBL, co-advise with Eoin Brodie), Lv Zhou (LBL, co-advise with Bill Riley), Wang Zhou (co-advisered with Guan K. at UIUC)

Students

Mingyang Sheng (Tsinghua University), Fushan Wang (Tsinghua University), Qiang Wang (Nanjing University), Ziqi Qin (UIUC with Guan K.), Ziyi Qin (UIUC with Guan K).

Affiliations/Memberships

- American Geophysical Union 2006 - Now
- Soil Science Society of America 2013 – Now
- Ecological Society of America 2014 - Now

Collaborators and Co-editors (in the last 5 years)

Rose Abramoff, Laboratoire des Sciences du Climat et de l'Environnement; Ronald Amundson, UC Berkeley; Jillian Banfield, UC Berkeley; James Bever, Kansas University; Ben Bond-Lamberty, Pacific Northwest National Laboratory; Katherin Calvin, Pacific Northwest National Laboratory; Min Chen, Pacific Northwest National Laboratory; Xingyuan Chen, Pacific Northwest National Laboratory; Weile Chen, University of Texas Austin; Yonas K. Demissie, Washington State University; Hailiang Dong, Miami University; Devin Drown, U of Alaska; Robert Grant, University of Alberta; Kaiyu Guan, University Illinois Urbana-Champaign; Forrest Hoffman, Oak Ridge National Laboratory; Zhenong Jin, Minesota State University; Ari Jumpponen, Kansas State University; Markus Kleber, Oregon State University; Kevin D. Kroeger, USGS; David Lawrence, NCAR; Ruby Leung, Pacific Northwest National Laboratory; Sonny Lee, Kansas State University; Hongyi Li, Houston University; Yaning Liu, UC Denver College; Federico Maggi, University of Sydney; Umakant Mishra, Argonne National Laboratory; Susan Natali, WHRC; Guo-Yue Niu, Unviersity of Arizona; Bin Peng, University Illinois Urbana-Champaign; Brendan Rogers, WHRC; Scott Russ, USDA; Ursel Schutte, U of Alaska; Mingjie Shi, JPL: Xiaoying Shi, Oakridge National Laboratory; Ben Sulman, Oak Ridge National Laboratory; Kang Sun, University of Buffalo; Jianwu Tang, Marine Biology Laboratory; Peter Thornton, Oak ridge national Laboratory; Xiaojuan Yang, Oak Ridge National Laboratory; Jeffrey White, Indiana University; Xubin Zeng, University of Arizona.