

Dr. Joshua B. Fisher

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CURRENT POSITION

- **Scientist**, NASA Jet Propulsion Laboratory (JPL), California Institute of Technology (Caltech)
- **Associate Project Scientist (II)**, Joint Institute for Regional Earth System Science and Engineering (JIFRESSE), University of California, Los Angeles (UCLA)

EDUCATION

- **Post-Doctoral Research Associate, University of Oxford, UK** (2006 – 2008)
Environmental Change Institute, School of Geography & Environment
I. Global modelling of atmosphere-vegetation-soil interactions; II. Nutrient dynamics in cloudforests and rainforests in the Peruvian Andes
Supervisor: Yadvinder S. Malhi
- **Ph.D., University of California, Berkeley, USA** (2001 – 2006)
Department of Environmental Science, Policy & Management
I. The land-atmosphere water flux across plant, ecosystem, global and social scales; II. GIS and spatial analysis for environmental justice and wildlife
Dissertation co-chairs: Dennis Baldocchi & Greg Biging; Committee members: Todd Dawson & Louise Fortmann
- **B.S., University of California, Berkeley, USA** (1997 – 2001)
College of Natural Resources: Environmental Sciences
Evapotranspiration methods compared on a Sierra Nevada forest ecosystem
Thesis advisor: Ye Qi

GRANTS/PROJECTS

- **NASA Earth Ventures Instruments II** (2014 – current)
ECOSystem Spaceborne Thermal Radiometer Experiment on Space Station (ECOSTRESS) Mission; 30M/6y
Science Lead
- **NASA Terrestrial Ecology (TE)** (2015 – current)
A Model-Data Integration Framework (MoDIF) for ABoVE Phase I Research: Simulation, Scaling and Benchmarking for Key Indicators of Arctic-Boreal Ecosystem Dynamics; 1.0M/3y
Principal Investigator, Science Team Member
Working Group Lead, Modeling Framework
- **NASA Climate Indicators and Data Products for Future National Climate Assessments (INCA)** (2016 – current)
Managing Vegetation Water Stress Under a Changing Climate; 0.8M/3y
Principal Investigator
- **NASA Terrestrial Hydrology Program (THP)** (2012 – current)
Bridging the Gap Between MODIS and FLUXNET: Validation of New High Spatial Resolution Satellite-based Estimates of Evapotranspiration Using FLUXNET Observations; 0.5M/3y
Co-Investigator
- **NASA Carbon Cycle Science (CARBON)** (2014 – current)
Multi-scale Synthesis and Terrestrial Model Intercomparison Project (MsTMIP) Phase II; 1.6M/3y
Co-Investigator
- **NASA SERVIR (SERVIR)** (2012 – current)
East Africa Drought and Agricultural Productivity Assessment and Prediction System; 1.0M/4y
Co-Investigator
- **NASA Earth Science Decadal Survey** (2010 – current)

Soil Moisture Active Passive (SMAP) Mission

Algorithm Development Team Member

- **NASA Venture-class Airborne Earth Observation Science Mission** (2010 – current)

Carbon in Arctic Reservoirs Vulnerability Experiment (CARVE); 27.9M/5y

Scientist

- **DOE BER Terrestrial Ecosystem Science (TES)** (2012 – current)

Nutrient Cycle Impacts on Forest Ecosystem Carbon Cycling: Improved Prediction of Climate Feedbacks from Coupled C-Nutrient Dynamics from Ecosystem to Regional Scales; 1M/3y

Principal Investigator

- **NSF Geography & Spatial Science (GSS)** (2014 – current)

Collaborative Research: Links Between Long-Term Soil Carbon Storage and Canopy Properties in Tropical Wet Forests; 178K/3y

Co-Investigator

- **JPL Strategic University Research Partnership (SURP)** (2014 – current)

Integrating SMAP Soil Moisture and OCO-2 Fluorescence into UCLA's SSiB Land Surface Model to Test Tropical Dry Season Productivity Impacts; 200K/2y

Principal Investigator

- **JPL Strategic Initiative Research & Technology Development (RTD)** (2014 – current)

Autonomous Small UAVs for In-situ Observation of Ecosystem Properties from Leaf to Canopy; 1.3M/3y

Co-Investigator

- **JPL Strategic Initiative Research & Technology Development (RTD)** (2013 – current)

Carbon & Ecosystems; 2M/3y

Co-Investigator

- **JPL Topic Area Research & Technology Development (RTD)** (2012 – 2014)

The Regional Hydrological Extremes Assessment System (RHEAS); 250K/2.25y

Principal Investigator

- **NSF Ecosystem Science** (2012 – 2014)

A Belowground Framework for Predicting How Plant-Microbe Interactions Couple Carbon and Nutrient Economies of Forests; 400K/2y

Co-Investigator

- **NASA Carbon Monitoring System (CMS)** (2012 – 2014)

Reduction in Bottom-Up Land Surface CO₂ Flux Uncertainty in NASA's Carbon Monitoring System Flux Project Through Systematic Multi-Model Evaluation and Infrastructure Development; 0.5M/1.5y

Co-Investigator, Science Team Member

Coordinator, Capability Risk Working Group

- **NASA Earth System Data Records (ESDR) Uncertainty Analysis** (2011 – 2014)

Estimating, Validating and Conveying Measurement Differences Between Land Surface Temperature and Emissivity Products From NASA's EOS Sensors; 1.2M/3y

Co-Investigator

- **NASA Atmospheric CO₂ Observations from Space (ACOS)** (2010 – 2014)

Estimation and Attribution of Global CO₂ Surface Fluxes Using Satellite Observations of CO₂ and CO from TES, GOSAT, and MOPITT; 1.4M/3y

Co-Investigator

- **JPL Strategic Initiative Research & Technology Development** (2010 – 2014)

A Multi-disciplinary Evaluation of Earth System Models with Satellite Observations; 4.7M/3y

Co-Investigator

- **NASA Arctic Boreal Vulnerability Experiment (ABOVE)** (2013 – 2014)

Science Definition Team (SDT) Member

- **NASA Carbon Monitoring System Pilot Study** (2010 – 2012)

Surface Carbon Fluxes; 1.7M/2.5y

Co-Investigator

• **JPL Topic Area Research & Technology Development (RTD) (2010)**

Climate Model Physics

Scientist

PUBLICATIONS

- **Fisher, J.B.**, Sikka, M., Huntzinger, D.N., Schwalm, C., Liu, J., in review. 3-hourly temporal downscaling of monthly global terrestrial biosphere model net ecosystem exchange. Submitted to: *Biogeosciences*.
- Badgley, G., **Fisher, J.B.**, Kahn, B.H., Malhi, Y., in review. The Sheltering Sky: persistent cloud cover sustains Central African tropical rainforests. Submitted to: *Nature Plants*.
- Verma, M., **Fisher, J.B.**, Mallick, K., Ryu, Y., Kobayashi, H., Guillaume, A., Moore, G., Ramakrishnan, L., Hendrix, V., Wolf, S., Sikka, M., Kiely, G., Wohlfahrt, G., Gielen, B., Rouspard, O., Toscano, P., Arain, M.A., in review. Global daily surface net-radiation at 5 km from MODIS. Submitted to: *Remote Sensing of Environment*.
- Vergopolan, N., **Fisher, J.B.**, in review. The impact of deforestation on the hydrological cycle in Amazonia as observed from remote sensing. Submitted to: *International Journal of Remote Sensing*.
- Lawal, S., **Fisher, J.B.**, in review. Climate variability and carbon flux in Southern African semi-arid ecosystems. Submitted to: *Journal of Arid Environments*.
- Fang, K., Shen, C., **Fisher, J.B.**, Niu, J., in review. Improving Budyko-curve-based estimates of long-term water partitioning using hydrologic signatures from GRACE. Submitted to: *Water Resources Research*.
- Stampoulis, D., Andreadis, K.M., Granger, S.L., **Fisher, J.B.**, Turk, J.F., Behrangi, A., Das, N.D., Ines, A.V., in review. Assessing the hydrologic vulnerability and adaptive capacity at regional scales from space. Submitted to: *Remote Sensing of Environment*.
- Guillevic, P., Olioso, A., Hook, S.J., **Fisher, J.B.**, Lagouarde, J.-P., in review. Impact of the satellite revisit time on evapotranspiration uncertainty – A sensitivity study using AmeriFlux data. Submitted to: *Remote Sensing of Environment*.
- Thomas, R.T., Prentice, I.C., Graven, H., **Fisher, J.B.**, Huang, M., Huntzinger, D.N., Ito, A., Jacobson, A., Jain, A., Mao, J., Michalak, A., Peng, S., Poulter, B., Ricciuto, D.M., Shi, X., Schwalm, C., Tian, H., Zeng, N., 2016. CO₂ and greening observations indicate increasing light use efficiency in northern terrestrial ecosystems. Submitted to: *Geophysical Research Letters*.
- Jeong, S.-J., Schimel, D., Frankenberg, C., Drewry, D., **Fisher, J.B.**, Verma, M., Berry, J.A., Lee, J.-E., Joiner, J., Guanter, L., in review. Seasonal decoupling between vegetation greenness and function over northern high latitude forests. Submitted to: *Environmental Research Letters*.
- Lee, J.-E., Saatchi, S., Hollinger, D., Parazoo, N., **Fisher, J.B.**, in review. Soil moisture control of maximum growing season carbon fluxes across AirMOSS study sites over North America. Submitted to: *Agricultural and Forest Meteorology*.
- Yao, Y., Liang, S., Li, X., Liu, S., Chen, J., Jia, K., Zhang, X., **Fisher, J.B.**, Mu, Q., Pan, M., Liu, M., Jiang, B., Grünwald, T., Bernhofer, C., Rouspard, O., in review. Improving global terrestrial evapotranspiration estimation using support vector machine by merging three satellite-based algorithms and eddy covariance observations. Submitted to: *Journal of Hydrometeorology*.
- Fang, Y., Michalak, A.M., Schwalm, C., Huntzinger, D., Berry J.A., Ciais, P., Piao, S., Poulter, B., **Fisher, J.B.**, Cook, R.B., Hayes, D., Huang, M., Ito, A., Lei, H., Mao, J., Parazoo, N., Shi, X., Tao, B., Wang, W., Wei, Y., Yang, J., in review. Global land carbon sink response to temperature and precipitation varies with ENSO phase. Submitted to: *Nature Climate Change*.
- Shao, J., Zhou, X., Luo, Y., Zhang, G., Yan, W., Li, J., Li, B., Dan, L., **Fisher, J.B.**, Gao, Z., He, Y., Huntzinger, D., Jain, A.K., Mao, J., Meng, J., Michalak, A.M., Parazoo, N.C., Peng, C., Poulter, B., Schwalm, C.R., Shi, X., Sun, R., Tao, F., Tian, H., Wei, Y., Zeng, N., Zhu, Q., Zhu, W., in review. Uncertainty analysis of terrestrial net primary productivity and net biome productivity in China during 1901-2005. Submitted to: *Journal of Geophysical Research – Biogeosciences*.

- Huntzinger, D.N., Michalak, A.M., Schwalm, C., Ciais, P., King, A.W., Fang, Y., Schaefer, K., Wei, Y., Cook, R.B., **Fisher, J.B.**, Hayes, D., Huang, M., Ito, A., Jain, A.K., Lei, H., Lu, C., Maignan, F., Mao, J., Parazoo, N., Peng, S., Poulter, B., Ricciuto, D., Shi, X., Tian, H., Wang, W., Zeng, N., Zhao, F., in review. Understanding the global land carbon sink: beyond climate and CO₂ sensitivity. Submitted to: *Nature*.
- Schwalm, C.R., Anderegg, W.R.L., Biondi, F., Koch, G., Litvak, M., Ogle, K., Shaw, J.D., Wolf, A., Huntzinger, D.N., Michalak, A.M., Schaefer, K., **Fisher, J.B.**, Cook, R., Wei, Y., Fang, Y., Jain, A., Hayes, D., Huang, M., Tian, H., in review. Global patterns of drought recover. Submitted to: *Nature*.
- **Fisher, J.B.**, Sweeney, S., Brzostek, E.R., Evans, T.P., Johnson, D.J., Myers, J.A., Bourg, N.A., Wolf, A.T., Howe, R.W., Phillips, R.P., in press. Tree–mycorrhizal associations detected remotely from canopy spectral properties. *Global Change Biology*.
- Wolf, S., Keenan, T.F., **Fisher, J.B.**, Baldocchi, D.D., Desai, A.R., Richardson, A.D., Scott, R.L., Law, B.E., Litvak, M.E., Brunsell, N.A., Peters, W., van der Laan-Luijkx, I.T., in press. Warm spring reduced carbon cycle impact of the 2012 US summer drought. *Proceedings of the National Academy of Sciences, USA*.
- Lee, J.-H., Biging, G.S., **Fisher, J.B.**, in press. An individual tree-based automated registration of aerial images to LiDAR data in a forested area. *Photogrammetric Engineering and Remote Sensing*.
- Yuan, W., Chen, Y., Xia, J., **Fisher, J.B.**, Dong, W., Zhang, X., Liang, S., Ye, A., Cai, W., Feng, J., in press. Using Bayesian model averaging to estimate terrestrial evapotranspiration in China. *Journal of Hydrology*.
- Shi, M., **Fisher, J.B.**, Brzostek, E.R., Phillips, R.P., 2016. Carbon cost of plant nitrogen acquisition: global carbon cycle impact from an improved plant nitrogen cycle in the Community Land Model. *Global Change Biology* 22(3): 1299-1314.
- Cai, X., Yang, Z.-L., **Fisher, J.B.**, Zhang, X., Barlage, M., Chen, F., 2016. Integration of nitrogen dynamics into the Noah-MP land model v1.1 for climate and environmental predictions. *Geoscientific Model Development* 9: 1-15.
- Michel, D., Jimenez, C., Miralles, D.G., Jung, M., Hirschi, M., Ershadi, A., Martens, B., McCabe, M.F., **Fisher, J.B.**, Mu, Q., Seneviratne, S.I., Wood, E.F., Fernandez-Prieto, D., 2016. The WACMOS-ET project – Part 1: tower-scale evaluation of four remote sensing-based evapotranspiration algorithms. *Hydrology and Earth System Sciences* 20: 803-822.
- Miralles, D.G., Jimenez, C., Jung, M., Michel, D., Ershadi, A., McCabe, M.F., Hirschi, M., Martens, B., Dolman, A.J., **Fisher, J.B.**, Mu, Q., Seneviratne, S.I., Wood, E.F., Fernandez-Prieto, D., 2016. The WACMOS-ET project – Part 2: evaluation of global terrestrial evaporation data sets. *Hydrology and Earth System Sciences* 20: 823-842.
- Ali, A., Xu, C., Rogers, A., Fisher, R., Wullschleger, S., McDowell, N., Massoud, E., Vrugt, J., Muss, J., **Fisher, J.B.**, Reich, P., Wilson, C., 2016. A global scale mechanistic model of the photosynthetic capacity (LUNA V1.0). *Geoscientific Model Development* 9: 587-606.
- Ito, A., Inatomi, M., Huntzinger, D.N., Schwalm, C., Michalak, A.M., Cook, R., King, A.W., Mao, J., Wei, Y., Post, W.M., Wang, W., Arain, M.A., Hayes, D.J., Ricciuto, D.M., Shi, X., Huang, M., Lei, H., Tian, H., Lu, C., Yang, J., Tao, B., Jain, A., Poulter, B., Peng, S., Ciais, P., **Fisher, J.B.**, Parazoo, N., Schaefer, K., Peng, C., Zeng, N., Zhao, F., 2016. Decadal trends in the seasonal-cycle amplitude of terrestrial CO₂ exchange: an analysis of Multi-scale Terrestrial Model Intercomparison Project ensemble of terrestrial biosphere models. *Tellus B* 68(28968): 1-20.
- Houborg, R., **Fisher, J.B.**, Skidmore, A.K., 2015. Advances in remote sensing of vegetation function and traits. *International Journal of Applied Observation and Geoinformation* 43: 1-6.
- Badgley, G., **Fisher, J.B.**, Jiménez, C., Tu, K.P., Vinukollu, R., 2015. On uncertainty in global terrestrial evapotranspiration estimates from choice of input forcing datasets. *Journal of Hydrometeorology* 16(4): 1449-1455.
- Schimel, D., Stephens, B.B., **Fisher, J.B.**, 2015. Effect of increasing CO₂ on the terrestrial carbon cycle. *Proceedings of the National Academy of Sciences, USA* 112(2): 436-441.
- Schimel, D., Pavlick, R., **Fisher, J.B.**, Asner, G., Saatchi, S., Miller, C., Frankenberg, C.,

Hibbard, K., Cox, P., 2015. Observing terrestrial ecosystems and the carbon cycle from space. *Global Change Biology* 21(5): 1762-1776.

• Schwalm, C.R., Huntzinger, D.N., **Fisher, J.B.**, Michalak, A.M., Bowman, K., Ciais, P., Cook, R., El-Masri, B., Hayes, D., Huang, M., Ito, A., Jacobson, A., Jain, A., King, A.W., Lei, H., Liu, J., Lu, C., Mao, J., Peng, S., Poulter, B., Ricciuto, D., Schaefer, K., Shi, X., Tao, B., Tian, H., Wang, W., Wei, Y., Yang, J., Zeng, N., 2015. Toward “optimal” integration of terrestrial biosphere models. *Geophysical Research Letters* 42(11): 4418-4428.

• Mao, J., Fu, W., Shi, X., Ricciuto, D., **Fisher, J.B.**, Dickinson, R., Wei, Y., Shem, W., Piao, S., Wang, K., Schwalm, C., Tian, H., Mu, M., Arain, A., Ciais, P., Cook, R., Dai, Y., Hayes, D., Hoffman, F., Huang, M., Huang, S., Huntzinger, D., Ito, A., Jain, A., King, A., Lei, H., Lu, C., Michalak, A., Parazoo, N., Peng, C., Peng, S., Poulter, B., Schaefer, K., Jafarov, E., Thornton, P., Wang, W., Zeng, N., Zhenzhong, Z., Fang, Z., Zhu, Q., Zhu, Z., 2015. Disentangling climatic and anthropogenic controls on global terrestrial evapotranspiration trends. *Environmental Research Letters* 10: 094008.

• Yao, Y., Liang, S., Li, X., Chen, J., Wang, K., Jia, K., Cheng, J., Jiang, B., **Fisher, J.B.**, Mu, Q., Grünwald, T., Bernhofer, C., Rouspard, O., 2015. A satellite-based hybrid algorithm to determine the Priestley-Taylor parameter for global terrestrial latent heat flux estimation across multiple biomes. *Remote Sensing of Environment* 165: 216-233.

• **Fisher, J.B.**, Huntzinger, D.N., Schwalm, C.R., Sitch, S., 2014. Modeling the terrestrial biosphere. *Annual Review of Environment and Resources* 39: 91-123.

• **Fisher, J.B.**, Sikka, M., Oechel, W.C., Huntzinger, D.N., Melton, J.R., Koven, C.D., Ahlström, A., Arain, M.A., Baker, I., Chen, J.M., Ciais, P., Davidson, C., Dietze, M., El-Masri, B., Hayes, D., Huntingford, C., Jain, A.K., Levy, P.E., Lomas, M.R., Poulter, B., Price, D., Sahoo, A.K., Schaefer, K., Tian, H., Tomelleri, E., Verbeeck, H., Viovy, Wania, R., N., Zeng, N., Miller, C.E., 2014. Carbon cycle uncertainty in the Alaskan Arctic. *Biogeosciences* 11(15): 4271-4288.

• Brzostek, E.R., **Fisher, J.B.**, Phillips, R.P., 2014. Modeling the carbon cost of plant nitrogen acquisition: mycorrhizal trade-offs and multi-path resistance uptake improve predictions of retranslocation. *Journal of Geophysical Research – Biogeosciences* 119(8): 1684-1697.

• Armanios, D., **Fisher, J.B.**, 2014. Measuring water availability with limited ground data: An entirely remote sensing-based hydrologic budget model of the Rufiji Basin, Tanzania using TRMM, GRACE, MODIS, SRB and AIRS. *Hydrological Processes* 28(3): 853-867.

• Parazoo, N.C., Bowman, K., **Fisher, J.B.**, Frankenberg, C., Jones, D.B.A., Cescatti, A., Pérez-Priego, Ó, Wohlfahrt, G., Montagnani, L., 2014. Terrestrial gross primary production inferred from satellite fluorescence and vegetation models. *Global Change Biology* 20(10): 3103-3121.

• Behrangi, A., Andreadis, K., **Fisher, J.B.**, Turk, F.J., Granger, S., Painter, T., Das, N., 2014. Satellite-based precipitation estimation and its application for streamflow prediction over mountainous western US basins. *Journal of Applied Meteorology and Climatology* 53: 2823-2842.

• Behrangi, A., Wong, S., Mallick, K., **Fisher, J.B.**, 2014. On the net surface water exchange rate estimated from remote sensing observation and reanalysis. *International Journal of Remote Sensing* 35(6): 2170-2185.

• Chen, Y., Xia, J., Liang, S., Feng, J., **Fisher, J.B.**, Li, X., Li, X., Liu, S., Ma, Z., Miyata, A., Mu, Q., Sun, L., Tang, J., Wang, K., Wen, J., Xue, Y., Yu, G., Zha, T., Zhang, L., Zhang, Q., Zhao, T., Zhao, L., Zhou, G., Yuan, W., 2014. Comparison of satellite-based evapotranspiration models over terrestrial ecosystems in China. *Remote Sensing of Environment* 140: 279-293.

• Yao, Y., Liang, S., Li, X., Hong, Y., **Fisher, J.B.**, Zhang, N., Chen, J., Cheng, J., Zhao, S., Zhang, X., Jiang, B., Sun, L., Jia, K., Wang, K., Chen, Y., Mu, Q., Feng, F., 2014. Bayesian multimodel estimation of global terrestrial latent heat flux from eddy covariance, meteorological, and satellite observations. *Journal of Geophysical Research* 119(8): 4521-4545.

• Deng, F., Jones, D.B.A., Henze, D.K., Bousseres, N., Bowman, K.W., **Fisher, J.B.**, Nassar, R., O'Dell, C., Wunch, D., Wennberg, P.O., Kort, E.A., Wofsy, S.C., Blumkenstock, T., Deutscher, N.M., Griffith, D., Hase, F., Heikkinen, P., Sherlock, V., Strong, K., Sussmann, R., Warneke, T., 2014. Inferring regional sources and sinks of atmospheric CO₂ from GOSAT

XCO₂ data. *Atmospheric Chemistry and Physics* 14: 3703-3727.

- Christoffersen, B.O., Restrepo-Coupe, N., Arain, M.A., Baker, I.T., Cestaro, B.P., Ciais, P., **Fisher, J.B.**, et al., 2014. Mechanisms of water supply and vegetation demand govern the seasonality and magnitude of evapotranspiration in Amazonia and Cerrado. *Agricultural and Forest Meteorology* 191: 33-50.
- Clark, K.E., Torres, M.A., West, A.J., Hilton, R.G., New, M., Horwath, A.B., **Fisher, J.B.**, Rapp, J.M., Robles Caceres, A., Malhi, Y., 2014. The hydrological regime of a forested tropical Andean valley. *Hydrology and Earth System Sciences* 18: 5377-5397.
- Traore, A.K., Ciais, P., Vuichard, N., McBean, N., Dardel, C., Poulter, B., Piao, S., **Fisher, J.B.**, Viovy, N., Jung, M., Myneni, R., 2014. 1982-2010 trends of African Light Use Efficiency and inherent Water Use Efficiency: sensitivity to climate and atmospheric CO₂ concentrations. *Remote Sensing* 6: 8923-8944.
- Traore, A.K., Ciais, P., Vuichard, N., Poulter, B., Viovy, N., Guimberteau, M., Jung, M., Myneni, R., **Fisher, J.B.**, 2014. Evaluation of the ORCHIDEE ecosystem model over Africa against 25 years of satellite-based water and carbon measurements. *Journal of Geophysical Research—Biogeosciences* 119(8): 1554-1575.
- Girardin, C.A.J., Silva-Espejo, J.E., Doughty, C.E., Huaraca Huasco, W., Metcalfe, D.B., Durand-Baca, L., Marthews, T.R., Aragão, L.E.O.C., Farfán-Rios, W., García-Cabrera, K., Halladay, K., **Fisher, J.B.**, Galiano-Cabrera, D.F., Huaraca-Quispe, L.P., Alzamora-Taype, I., Eguiluz-Mora, L., Salinas-Revilla, N., Silman, M.R., Meir, P., Malhi, Y., 2014. Productivity and carbon allocation in a tropical montane cloud forest in the Peruvian Andes. *Plant Ecology & Diversity* 7(1-2): 107-123.
- Malhi, Y., Farfán Amézquita, F., Doughty, C.E., Silva-Espejo, J.E., Girardin, C.A.J., Metcalfe, D.B., Aragão, L.E.O.C., Huaraca-Quispe, L.P., Alzamora-Taype, I., Eguiluz-Mora, L., Marthews, T.R., Halladay, K., Quesada, C.A., Robertson, A.L., **Fisher, J.B.**, Zaragoza-Castells, J., Rojas-Villagra, C.M., Pelaez-Tapia, Y., Salinas, N., Meir, P., Phillips, O.L., 2014. The productivity, metabolism and carbon cycle of two lowland tropical forest plots in south-western Amazonia, Peru. *Plant Ecology & Diversity* 7(1-2): 85-105.
- **Fisher, J.B.**, Sikka, M., Sitch, S., Ciais, P., Poulter, B., Galbraith, D., Lee, J.-E., Huntingford, C., Viovy, N., Zeng, N., Ahlström, A., Levy, P.E., Lomas, M.R., Frankenberg, C., Saatchi S., Malhi, Y., 2013. African tropical rainforest net CO₂ fluxes in the 20th century. *Philosophical Transactions of the Royal Society B – Biological Sciences* 368(1625): doi:10.1098/rstb.2012.0376.
- **Fisher, J.B.**, Malhi, Y., Torres, I.C., Metcalfe, D.B., van de Weg, M., Meir, P., Espejo, J.E.S., Huaraca, W., 2013. Nutrient limitation in rainforests and cloud forests along a 3000 m elevation gradient in the Peruvian Andes. *Oecologia* 172(3): 889-902.
- Mallick, K., Jarvis, A., **Fisher, J.B.**, Tu, K.P., Boegh, E., Niyogi, D., 2013. Latent heat flux and canopy conductance based on Penman-Monteith, Priestley-Taylor equation, and Bouchet's complementary hypothesis. *Journal of Hydrometeorology* 14: 419-442.
- Vinya, R., Malhi, Y., **Fisher, J.B.**, Brown, N., Brodrigg, T., Aragão, L.E., 2013. Xylem cavitation vulnerability influences tree species' habitat preference in miombo woodlands. *Oecologia* 173: 711-720.
- Schwalm, C.R., Huntzinger, D.N., Michalak, A.M., **Fisher, J.B.**, Kimball, J.S., Mueller, B., Zhang, K., Zhang, Y., 2013. Sensitivity of inferred climate model skill to choice of benchmarking datasets and evaluation decisions. *Environmental Research Letters* 8: 024028.
- Mallick, K., Jarvis, A.J., Boegh, E., **Fisher, J.B.**, Drewry, D.T., Tu, K.P., Hook, S.J., Hulley, G., Ardö, J., Beringer, J., Arain, A., Niyogi, D., 2013. A Surface Temperature Initiated Closure (STIC) for surface energy balance fluxes. *Remote Sensing of Environment* 141: 243-261.
- Lee, J.-H., Biging, G.S., Radke, J.D., **Fisher, J.B.**, 2013. An improved topographic mapping technique from airborne LiDAR: application in a forested hillside. *International Journal of Remote Sensing* 34(20): 7293-7311.
- Parazoo, N.C., Bowman, K., Frankenberg, C., Lee, J.-E., **Fisher, J.B.**, Worden, J., Jones, D.B.A., Berry, J., Collatz, G.J., Baker, I.T., Jung, M., Liu, J., Osterman, G., O'Dell, C., Sparks, A., Butz, A., Guerlet, S., Yoshida, Y., Chen, H., Gerbig, C., 2013. Interpreting seasonal

changes in the carbon balance of southern Amazonia using measurements of XCO₂ and chlorophyll fluorescence from GOSAT. *Geophysical Research Letters* 40(11): 2829-2833.

• Yao, Y., Liang, S., Cheng, J., Liu, S., **Fisher, J.B.**, Jia, K., Zhao, X., Zhou, G., Zhou, G., Li, Y., Zhao, S., 2013. MODIS-driven estimation of terrestrial latent heat flux in China based on a modified Priestley-Taylor algorithm. *Agricultural and Forest Meteorology* 171-172: 187-202.

• McCabe, M., Miralles, D., Jimenez, C., Ershadi, A., **Fisher, J.**, Mu, Z., Liang, M., Mueller, B., Sheffield, J., Seneviratne, S., Wood, E., 2013. Global-scale estimation of land surface heat fluxes from space: product assessment and intercomparison. In: *Remote Sensing of Energy Fluxes and Soil Moisture Content*, Ed. Petropoulos, G.P. CRC Press, Taylor & Francis Group. 538 pp.

• Kelley, D., Prentice, I.C., Harrison, S., Wang, H., Simard, M., **Fisher, J.B.**, Willis, K., 2013. A comprehensive benchmarking system for evaluating global vegetation models. *Biogeosciences* 10: 3313-3340.

• Lee, J.-E., Frankenberg, C., van der Tol, C., Berry, J.A., Guanter, L., Boyce, C.K., **Fisher, J.B.**, Morrow, E., Worden, J., Asefi, S., Badgley, G., Saatchi, S., 2013. Forest productivity and water stress in Amazonia: observations from GOSAT chlorophyll fluorescence. *Philosophical Transactions of the Royal Society B – Biological Sciences* 280: 20130171.

• Mueller, B., Hirschi, M., Jimenez, C., Ciais, P., Dirmeyer, P.A., Dolman, A.J., **Fisher, J.B.**, Jung, M., Ludwig, F., Maignan, F., Miralles, D.G., McCabe, M.F., Reichstein, M., Sheffield, J., Wang, K., Wood, E.F., Zhang, Y., Seneviratne, S.I., 2013. Benchmark products for land evapotranspiration: LandFlux-EVAL multi-dataset synthesis. *Hydrology and Earth System Sciences* 17: 3707-3720.

• de Gonçalves, L.G.G., Borak, J.S., Costa, M.H., Saleska, S.R., Baker, I., Restrepo-Coupe, N., Muza, M.N., Poulter, B., Verbeeck, H., **Fisher, J.B.**, Arain, M.A., Arkin, P., Cestaro, B.P., Christoffersen, B., Galbraith, D., Guan, X., van den Hurk, B.J.J.M., Ichii, K., Acicoli Imbuzeiro, H.M., Jain, A.K., Levine, N., Lu, C., Miguez-Macho, G., Roberti, D.R., Sahoo, A., Sakaguchi, K., Schaefer, K., Shi, M., Shuttleworth, W.J., Tian, H., Yang, Z.-L., Zeng, X., 2013. Overview of the Large-Scale Biosphere-Atmosphere Experiment in Amazônia Data Model Intercomparison Project (LBA-DMIP). *Agricultural and Forest Meteorology* 182-183: 111-127.

• Magagi, R., Berg, A., Goïta, K., Belair, S., Jackson, T., Toth, B., Walker, A., McNairn, H., O'Neill, P., Moghaddam, M., Gherboudj, I., Colliander, A., Cosh, M., Belanger, J., Burgin, M., **Fisher, J.B.**, et al., 2013. Canadian Experiment for Soil Moisture in 2010 (CanEX-SM10): Overview and preliminary results. *IEEE Transactions on Geoscience and Remote Sensing* 51(1): 347-363.

• von Randow, C., Zeri, M., Restrepo-Coupe, N., Muza, M.N., de Goncalves, L.G.G., Costa, M.H., Araujo, A.C., Manzi, A.O., da Rocha, H.R., Saleska, S.R., Arain, M.A., Baker, I.T., Cestaro, B.P., Christoffersen, B., Ciais, P., **Fisher, J.B.**, Galbraith, D., Guan, X., van der Hurk, B., Ichii, K., Imbuzeiro, H., Jain, A., Levine, N., Miguez-Macho, G., Poulter, B., Roberti, D.R., Sahoo, A., Schaefer, K., Shi, M., Tian, H., Verbeeck, H., Yang, Z.-L., 2013. Inter-annual variability of carbon and water fluxes in Amazonian forest, Cerrado and pasture sites, as simulated by terrestrial biosphere models. *Agricultural and Forest Meteorology* 182-183(15): 145-155.

• **Fisher, J.B.**, Badgley, G., Blyth, E., 2012. Global nutrient limitation in terrestrial vegetation. *Global Biogeochemical Cycles* 26, GB3007, doi:10.1029/2011GB004252.

• Moore, S., **Fisher, J.B.**, 2012. Challenges and opportunities in GRACE-based groundwater storage assessment and management: an example from Yemen. *Water Resources Management* 26: 1425-1453.

• Morel, A., **Fisher, J.B.**, Malhi, Y., 2012. Evaluating the potential to monitor aboveground biomass in forest and oil palm in Sabah, Malaysia, for 2000-2008 with Landsat ETM+ and ALOS-PALSAR. *International Journal of Remote Sensing* 33(11): 3614-3639.

• Polhamus, A.M., **Fisher, J.B.**, Tu, K.P., 2012. What controls the error structure in evapotranspiration models? *Agricultural and Forest Meteorology* 169: 12-24.

• Boroon, M.H.R., **Fisher, J.B.**, 2012. Linking groundwater quality and quantity: an assessment of satellite-based groundwater storage anomalies from GRACE against ground measurements

of contaminants in California. *Journal of Environmental Science and Engineering B* 1: 1271-1284.

- Vinya, R., Malhi, Y., Brown, N., **Fisher, J.B.**, 2012. Functional coordination between branch hydraulic properties and leaf functional traits in miombo woodlands: Implications for water stress management and species habitat preference. *Acta Physiologiae Plantarum* 34(5): 1701-1710.
- Papale, D., Agarwal, D.A., Baldocchi, D., Cook, R.B., **Fisher, J.B.**, van Ingen, C., 2012. Database maintenance, data sharing policy, collaboration. In: Aubinet, M., Vesala, T., Papale, D. (eds) *Eddy Covariance: A Practical Guide to Measurement and Data Analysis*, pp. 299-424, Springer, New York.
- Lee, J.-E., Lintner, B.R., Neelin, J.D., Jiang, X., Boyce, C.K., **Fisher, J.B.**, Perron, J.T., Kubar, T.L., Pierrehumbert, R.T., Lee, J., Worden, J., 2012. Reduction of tropical land region precipitation variability via transpiration. *Geophysical Research Letters* 39: L19704, doi:10.1029/2012gl053417.
- Luo, Y.Q., Randerson, J., Abramowitz, G., Bacour, C., Blyth, E., Carvalhais, N., Ciais, P., Dalmonech, D., **Fisher, J.**, Fisher, R., Friedlingstein, P., Hibbard, K., Hoffman, F., Huntzinger, D., Jones, C.D., Koven, C., Lawrence, D., Li, D.J., Mahecha, M., Niu, S.L., Norby, R., Piao, S.L., Qi, X., Peylin, P., Prentice, I.C., Riley, W., Reichstein, M., Schwalm, C., Wang, Y.-P., Xia, J.Y., Zaehle, S., Zhou, X.H., 2012. A framework of benchmarking land models. *Biogeosciences* 9: 3857-3874.
- Marthews, T.R., Malhi, Y., Girardin, C.A.J., Silva Espejo, J.E., Aragão, L.E.O.C., Metcalfe, D.B., Rapp, J.M., Mercado, L.M., Fisher, R.A., Galbraith, D.R., **Fisher, J.B.**, Salinas-Revilla, N., Friend, A.D., Restrepo-Coupe, N., 2012. Simulating forest productivity along a neotropical elevational transect: temperature variation and carbon use efficiency. *Global Change Biology* 18(9): 2882-2898.
- **Fisher, J.B.**, Whittaker, R., Malhi, Y., 2011. ET Come Home: Potential evapotranspiration in geographical ecology. *Global Ecology and Biogeography* 20: 1-18.
- Frankenberg, C., **Fisher, J.B.**, Worden, J., Badgley, G., Saatchi, S.S., Lee, J.-E., Toon, G.C., Butz, A., Jung, M., Kuze, A., Yokota, T., 2011. New global observations of the terrestrial carbon cycle from GOSAT: Patterns of plant fluorescence with gross primary productivity. *Geophysical Research Letters* 38: L17706, doi:10.1029/2011GL048738.
- Attua, E.M., **Fisher, J.B.**, 2011. Historical and future land cover change in a municipality of Ghana. *Earth Interactions* 15(9): 1-26.
- Krishnamurthy, P.K., **Fisher, J.B.**, Johnson, C., 2011. Mainstreaming local perceptions of hurricane risk into policymaking: A case study of community-based vulnerability GIS in Mexico. *Global Environmental Change* 21: 143-153.
- Simard, M., Pinto, N., **Fisher, J.B.**, Baccini, A., 2011. Mapping forest canopy height globally with spaceborne LiDAR. *Journal of Geophysical Research* 116: G04021, doi:10.1029/2011JG001708. (Research Spotlight in *Eos*)
- Osti, M., Coad, L., **Fisher, J.B.**, Bomhard, B., Hutton, J.M., 2011. Oil and gas development and the World Heritage network and wider protected area network in sub-Saharan Africa. *Biodiversity & Conservation* 20(9): 1863-1877.
- Vinukollu, R.K., Wood, E.F., Ferguson, C.R., **Fisher, J.B.**, 2011. Global estimates of evapotranspiration for climate studies using multi-sensor remote sensing data: Evaluation of three process-based approaches. *Remote Sensing of Environment* 115: 801-823.
- Thomas, M.V., Malhi, Y., Fenn, K.M., **Fisher, J.B.**, Morecroft, M.D., Lloyd, C.R., Taylor, M.E., McNeil, D.D., 2011. Carbon dioxide fluxes over an ancient broadleaved deciduous woodland in southern England. *Biogeosciences* 8: 1595-1613.
- Zelazowski, P., Malhi, Y., Huntingford, C., Sitch, S., **Fisher, J.B.**, 2011. Changes in the potential distribution of humid tropical forests on a warmer planet. *Philosophical Transactions of the Royal Society A – Mathematical, Physical & Engineering Sciences* 369: 137-160.
- Macdonald, E.A., Collins, M., Clayton, L.M., Malhi, Y., **Fisher, J.B.**, Milner-Gulland, E.J., Macdonald, D.W., 2011. Wildlife Conservation and Reduced Emissions from Deforestation in a case study of Nantu Wildlife Reserve, Sulawesi: 1. The effectiveness of forest protection - many

measures, one goal. *Environmental Science & Policy* 14(6): 697-708.

- Mueller, B., Seneviratne, S.I., Jiménez, C., Corti, T., Hirschi, M., Balsamo, G., Ciais, P., Dirmeyer, P., **Fisher, J.B.**, Guo, Z., Jung, M., Maignan, F., McCabe, M.F., Reichle, R., Reichstein, M., Rodell, M., Sheffield, J., Teuling, A.J., Wang, K., Wood, E.F., Zhang, Y., 2011. Evaluation of global observations-based evapotranspiration datasets and IPCC AR4 simulations. *Geophysical Research Letters* 38: L06402, doi:10.1029/2010GL046230.
- Jiménez, C., Prigent, C., Mueller, B., Seneviratne, S.I., McCabe, M.F., Wood, E.F., Rossow, W.B., Balsamo, G., Betts, A.K., Dirmeyer, P.A., **Fisher, J.B.**, Jung, M., Kanamitsu, M., Reichle, R.H., Reichstein, M., Rodell, M., Sheffield, J., Tu, K., Wang, K., 2011. Global intercomparison of 12 land surface heat flux estimates. *Journal of Geophysical Research* 116: D02102, doi:10.1029/2010JD014545.
- **Fisher, J.B.**, Sitch, S., Malhi, Y., Fisher, R.A., Huntingford, C., Tan, S.-Y., 2010. Carbon cost of plant nitrogen acquisition: A mechanistic, globally-applicable model of plant nitrogen uptake, retranslocation and fixation. *Global Biogeochemical Cycles* 24: GB1014, doi:10.1029/2009GB003621.
- **Fisher, J.B.**, Fortmann, L.P., 2010. Governing the data commons: Policy, practice, and the advancement of science. *Information & Management* 47: 237-245.
- Gibbon, A., Silman, M.R., Malhi, Y., **Fisher, J.B.**, Meir, P., Zimmermann, M., Dargie, G.C., Farfan, W., Cabrera, K.G., 2010. Ecosystem carbon storage across the grassland-forest transition in the high Andes of Manu National Park, Peru. *Ecosystems* 13: 1097-1111.
- Phillips, O.L., van der Heijden, G., López-González, G., Aragão, L.E.O.C., Lewis, S.L., Lloyd, J.J., Malhi, Y., Monteagudo, A., Almeida, S., Dávila, E.A., Amaral, I., Andelman, S., Andrade, A., Arroyo, L., Aymard, G., Baker, T.R., Blanc, L., Bonal, D., de Oliveira, A.C.A., Chao, K.-J., Cardozo, N.D., da Costa, L., Feldpausch, T.R., **Fisher, J.B.**, et al., 2010. Drought-mortality relationships for tropical forests. *New Phytologist* 187: 631-646.
- **Fisher, J.B.**, Malhi, Y., de Araújo, A.C., Bonal, D., Gamo, M., Goulden, M.L., Hirano, T., Huete, A.R., Kondo, H., Kumagai, T., Loescher, H., Miller, S., Nobre, A.D., Nouvellon, Y., Oberbauer, S.F., Panuthai, S., von Randow, C., da Rocha, H.R., Roupsard, O., Saleska, S., Tanaka, K., Tanaka, N., Tu, K.P., 2009. The land-atmosphere water flux in the tropics. *Global Change Biology* 15: 2694-2714. (Cover article).
- **Fisher, J.B.**, 2009. Canopy nitrogen and albedo from remote sensing: What exactly are we seeing? *Proceedings of the National Academy of Sciences, USA* 106(7): E16.
- **Fisher, J.B.**, 2009. Book review of "Quantifying and Understanding Plant Nitrogen Uptake for Systems Modeling" edited by Ma et al. *Experimental Agriculture* 45(3): 377.
- Phillips, O.L., Aragão, L., Lewis, S.L., **Fisher, J.B.**, et al., 2009. Drought sensitivity of the Amazon rainforest. *Science* 323(5919): 1344-1347.
- Ostle, N.J., Smith, P., Fisher, R., Woodward, F.I., **Fisher, J.B.**, Smith, J.U., Galbraith, D., Levy, P., Meir, P., McNamara, N.P., Bardgett, R.D., 2009. Integrating plant-soil interactions into global carbon models. *Journal of Ecology* 97: 851-863.
- **Fisher, J.B.**, Tu, K.P., Baldocchi, D.D., 2008. Global estimates of the land-atmosphere water flux based on monthly AVHRR and ISLSCP-II data, validated at 16 FLUXNET sites. *Remote Sensing of Environment* 112(3): 901-919.
- **Fisher, J.B.**, Nawaz, R., Fauzi, R., Nawaz, F., Sadek, E., Latif, Z., Blackett, M., 2008. Balancing water, religion and tourism on Redang Island, Malaysia. *Environmental Research Letters* 3(2): 1-6.
- **Fisher, J.B.**, Baldocchi, D.D., Misson, L., Dawson, T., Goldstein, A.H., 2007. What the towers don't see at night: Nocturnal sap flow in trees and shrubs at two AmeriFlux sites in California. *Tree Physiology* 27(4): 597-610.
- **Fisher, J.B.**, Trulio, L.A., Biging, G., Chromczak, D., 2007. An analysis of spatial clustering and implications for wildlife management: A burrowing owl example. *Environmental Management* 39(3): 403-411. (Cover article).
- Dawson, T.E., Burgess, S.S.O., Tu, K.P., Oliveira, R.S., Santiago, L.S., **Fisher, J.B.**, Simonin, K.S., Ambrose, A.R., 2007. Nighttime transpiration in woody plants from contrasting ecosystems. *Tree Physiology* 27(4): 561-575.

- **Fisher, J.B.**, Kelly, N.M., Romm, J., 2006. Scales of environmental justice: Combining GIS and spatial analysis for air toxics in West Oakland, California. *Health & Place* 12(4): 701-714.
- **Fisher, J.B.**, DeBiase, T.A., Qi, Y., Xu, M., Goldstein, A.H., 2005. Evapotranspiration models compared on a Sierra Nevada forest ecosystem. *Environmental Modelling & Software* 20(6): 783-796.

PUBLICATIONS, NON-PRIMARY LITERATURE

- **Fisher, J.B.**, Sikka, M., Huntzinger, D.N., Schwalm, C., 2016. CMS: modeled net ecosystem exchange at 3-hourly time steps, 2004-2010. ORNL DAAC, Oak Ridge, Tennessee, USA. <http://dx.doi.org/10.3334/ORNLDAAAC/1315>
- Lee, C.M., **Fisher, J.B.**, Hook, S.J., 2016. ECOSTRESS Science Team Meeting. *The Earth Observer* 28(2): 24.
- **Fisher, J.B.**, 2015. ECOSTRESS Science Management Plan. *JPL Report D-94606*, Jet Propulsion Laboratory, Pasadena, CA, 22pp, September 2015.
- Lee, C.M., **Fisher, J.B.**, Hook, S.J., 2015. ECOSTRESS Science Team Meeting. *The Earth Observer* 27(3): 28-29.
- **Fisher, J.B.** and SMAP Algorithm Development Team, 2015. SMAP Ancillary Data Report – Surface Temperature. *JPL Report D-53064*, Jet Propulsion Laboratory, Pasadena, CA, 18pp, March 2015.
- **Fisher, J.B.** and Andreadis, K.M., 2014. Drought: Roles of Precipitation, Evapotranspiration, and Soil Moisture. In: Wang, Y. (Ed) *Encyclopedia of Natural Resources: Air*. Taylor and Francis, New York, pp 1015-1017.
- **Fisher, J.B.**, 2013. Land-atmosphere interactions: Evapotranspiration. In: Njoku, E. (Ed) *Encyclopedia of Remote Sensing*. Springer-Verlag, Berlin Heidelberg, pp 1-5.
- Attua, E.M., **Fisher, J.B.**, 2010. Land suitability assessment for pineapple production in the Akwapim South District, Ghana: a GIS approach. *Ghana Journal of Geography* 2: 47-83.
- **Fisher, J.B.**, 2010. Early-career scientist (ECS) page interview. *iLEAPS Newsletter* 10: 40.
- **Fisher, J.B.**, Zardin, E., Bocquet, F., Swann, A., Rüdiger, C., Kyrö, E.-M., Gunthe, S.S., 2010. The new generation of 'land-atmosphere exchange' scientists. *iLEAPS Newsletter* 9: 47-49.
- **Fisher, J.B.**, 2009. Evapotranspiration from tropical vegetation. *iLEAPS Newsletter* 7: 18.

CONFERENCE PRESENTATIONS

- **Fisher, J.B.**, 2016. PT-JPL ET: ecophysiological constraints downscale Priestley-Taylor potential to actual evapotranspiration. Evapotranspiration Remote Sensing Workshop. Davis, California, USA. (*Invited*)
- Thomas, R.T., Prentice, I.C., Graven, H., **Fisher, J.B.**, Huang, M., Huntzinger, D., Ito, A., Jacobson, A., Jain, A., Mao, J., Michalak, A., Peng, S., Poulter, B., Ricciuto, D.M., Shi, X., Schwalm, C., Tian, H., Zeng, N., 2016. CO₂ and greening observations indicate increasing light use efficiency in northern terrestrial ecosystems. European Geophysical Union, Vienna, Austria.
- **Fisher, J.B.**, Hook, S., Allen, R., Anderson, M., French, A., Hain, C., Hulley, G., Wood, E., 2015. ECOSTRESS: NASA's next-generation mission to measure evapotranspiration from the International Space Station. American Geophysical Union, San Francisco, California, USA. (*Invited*)
- Hook, S., **Fisher, J.B.**, Hulley, G., Anderson, M., French, A., Hain, C., Allen, R., 2015. HypsIRI and ECOSTRESS. American Geophysical Union, San Francisco, California, USA.
- Purdy, A., **Fisher, J.B.**, Famiglietti, J., 2015. Ground heat flux estimation: what's the best approach? American Geophysical Union, San Francisco, California, USA.
- Shi, M., **Fisher, J.B.**, Brzostek, E., Phillips, R., 2015. Mycorrhizal controls on nitrogen uptake drive carbon cycling at the global scale. American Geophysical Union, San Francisco, California, USA.
- Phillips, R., Brzostek, E., **Fisher, J.B.**, 2015. A new conceptual framework for unifying the heterogeneity of plant-microbe interactions in forests by linking belowground measurements with large-scale modeling and remote sensing. American Geophysical Union, San Francisco, California, USA.

- Qiu, B., Xue, Y., **Fisher, J.B.**, Guo, W., 2015. Wilting point is the key link between the water and carbon cycles in a remote sensing-constrained global terrestrial biosphere model. American Geophysical Union, San Francisco, California, USA.
- Fang, K., Shen, C., **Fisher, J.B.**, Niu, J., 2015. GRACE-assisted Budyko hypothesis for improved estimates of long-term water partitioning. American Geophysical Union, San Francisco, California, USA.
- Stampoulis, D., Andreadis, K., Granger, S., **Fisher, J.B.**, Turk, F., Behrangi, A., Das, N., Ines, A., 2015. Assessing hydro-ecological vulnerability from space. American Geophysical Union, San Francisco, California, USA.
- Kolus, H., Huntzinger, D., Schwalm, C., **Fisher, J.B.**, Cook, R., Fang, Y., Jacobson, A., Michalak, A., Schaefer, K., Wei, Y., 2015. Assessing model treatment of drought legacy effects in the Amazon. American Geophysical Union, San Francisco, California, USA.
- Mao, J., Fu, W., Shi, X., Ricciuto, D., **Fisher, J.B.**, Dickinson, R., Wei, Y., Shem, W., Piao, S., Wang, K., Schwalm, C., Tian, H., Mu, M., Arain, M.A., Ciais, P., Cook, R., Dai, Y.J., Hayes, D., Hoffman, F., Huang, M., Huang, S., Huntzinger, D., Ito, A., Jain, A., King, A., Lei, H., Lu, C., Michalak, A., Parazoo, N., Peng, C., Peng, S., Poulter, B., Schaefer, K., Jafarov, E., Thornton, P., Wang, W., Zeng, N., Zeng, Z., Zhao, F., Zhu, Q., Zhu, Z., 2015. Disentangling climatic and anthropogenic controls on global terrestrial evapotranspiration trends. American Geophysical Union, San Francisco, California, USA.
- Huntzinger, D., Michalak, A., Schwalm, C., Ciais, P., Schaefer, K., King, A., Wei, Y., Cook, R., **Fisher, J.B.**, Hayes, D., Huang, M., Ito, A., Jain, A., Lei, H., Lu, C., Maignan, F., Mao, J., Parazoo, N., Peng, S., Poulter, B., Ricciuto, D., Shi, X., Tian, H., Wang, W., Zeng, N., Zhao, F., 2015. Nitrogen dynamics are a key factor in explaining global land carbon sink. American Geophysical Union, San Francisco, California, USA.
- Schwalm, C., Anderegg, W., Biondi, F., Koch, G., Litvak, M., Shaw, J., Wolf, A., Huntzinger, D., Michalak, A., Schaefer, K., **Fisher, J.B.**, Cook, R., Wei, Y., Fang, Y., Hayes, D., Huang, M., Jain, A., Tian, H., 2015. Global patterns of drought recovery. American Geophysical Union, San Francisco, California, USA.
- **Fisher, J.B.**, Hook, S., Allen, R., Anderson, M., French, A., Hain, C., Hulley, G., Wood, E., 2015. The ECOSystem Spaceborne Thermal Radiometer Experiment on Space Station (ECOSTRESS). 2015 International Workshop on Evapotranspiration Mapping for Water Security, The World Bank, Washington, DC, USA. (*Invited*)
- **Fisher, J.B.**, Malhi, Y., Torres, I.C., Metcalfe, D.B., van de Weg, M., Meir, P., Espejo, J.E.S., Huaraca, W., 2015. What limits productivity in the Peruvian Andes? An investigation into nutrient dynamics on a 3000-m elevation gradient. Association for Tropical Biology and Conservation, Honolulu, HI, USA.
- **Fisher, J.B.**, Phillips, R.P., Evans, T., Brzostek, E.R., Shi, M., Sweeney, S., 2015. Root to Globe: Nutrient Cycle Impacts on Forest Ecosystem Carbon Cycling. Department of Energy Environmental System Science Principal Investigator Meeting, Potomac, MD, USA. (*Invited*)
- Brzostek, E.R., **Fisher, J.B.**, Phillips, R.P., 2015. Confronting models with measurements: an optimal allocation model accurately predicts empirical measurements of the rhizosphere marketplace for nitrogen and phosphorus. Ecological Society of America, Baltimore, MD, USA.
- Hook, S., Hulley, G., Johnson, W.R., **Fisher, J.B.**, 2015. HypsIRI, ECOSTRESS, and HyTES: latest results. International Geoscience and Remote Sensing Symposium, Milan, Italy.
- Wolf, S., Keenan, T., **Fisher, J.B.**, Baldocchi, D., 2015. Warm spring reduced impact of summer drought on carbon cycling. European Geophysical Union, Vienna, Austria.
- Michel, D., Miralles, D., Jimenez, C., Ershadi, A., McCabe, M., Hirschi, M., Seneviratne, S., Jung, M., Wood, E., Su, B., Timmermans, J., Chen, X., **Fisher, J.B.**, Mu, Q., Fernandez, D., 2015. Tower-scale performance of four observation-based evapotranspiration algorithms within the WACMOS-ET project. European Geophysical Union, Vienna, Austria.
- Miralles, D., Jimenez, C., Ershadi, A., McCabe, M., Michel, D., Hirschi, M., Seneviratne, S., Jung, M., Wood, E., Su, B., Timmermans, J., Chen, X., **Fisher, J.B.**, Mu, Q., Fernandez, D., 2015. Evaluation of observation-driven evaporation algorithms: results of the WACMOS-ET project. European Geophysical Union, Vienna, Austria.

- **Fisher, J.B.**, Sweeney, S., Brzostek, E.R., Evans, T.P., Johnson, D.J., Bourg, N.A., Phillips, R.P. 2014. Remote sensing of mycorrhizae? Detection of mycorrhizal association from canopy spectral properties. American Geophysical Union, San Francisco, California, USA.
- **Fisher, J.B.**, Hook, S., Allen, R., Anderson, M., French, A., Hain, C., Hulley, G., Wood, E., 2014. The ECOSystem Spaceborne Thermal Radiometer Experiment on Space Station (ECOSTRESS): science motivation. American Geophysical Union, San Francisco, California, USA.
- Verma, M., **Fisher, J.B.**, Mallick, K., Ryu, Y., Tu, K., Kobayashi, H., Guillaume, A., Moore, G., Ramakrishnan, L., Hendrix, V., 2014. Evaluating ET and its components from the CMIP5 models with new, global remote sensing-based estimates. American Geophysical Union, San Francisco, California, USA.
- Shi, M., **Fisher, J.B.**, Brzostek, E., Phillips, R., 2014. From roots to globe: how does the terrestrial nitrogen cycle alter the global carbon cycle? American Geophysical Union, San Francisco, California, USA.
- Schimel, D., **Fisher, J.B.**, Pavlick, R., Saatchi, S., Asner, G., Frankenberg, C., Townsend, P., 2014. Filling gaps in global data sets: the role of new vegetation remote sensing data products. American Geophysical Union, San Francisco, California, USA.
- Goldsmith, G., **Fisher, J.B.**, McDonnell, J., Malhi, Y., 2014. The pools, fluxes and residence time of water across the Amazon basin. American Geophysical Union, San Francisco, California, USA.
- Wolf, S., Keenan, T., **Fisher, J.B.**, Baldocchi, D., 2014. Warm spring reduced impact of summer drought on carbon cycling. American Geophysical Union, San Francisco, California, USA.
- Cai, X., Yang, Z.-L., **Fisher, J.B.**, 2014. Incorporating the role of nitrogen in the Noah-MP land surface model for climate and environmental studies. American Geophysical Union, San Francisco, California, USA.
- Behrnagi, A., Andreadis, K., **Fisher, J.B.**, Turk, F., Painter, T., Granger, S., Das, N., Stephens, G., 2014. Hydrologic assessment of remotely sensed high resolution precipitation products over cold-mountainous region, and analysis of the GPM impact. American Geophysical Union, San Francisco, California, USA.
- Schimel, D., Sander, S., Miller, C., Duren, R., **Fisher, J.B.**, Liu, J., Stephens, B., 2014. Requirements analysis for remote sensing of carbon-climate feedbacks. American Geophysical Union, San Francisco, California, USA.
- Stampoulis, D., Andreadis, K., Granger, S., **Fisher, J.B.**, Behrang, A., Das, N., Turk, J., 2014. Quantifying the resilience of vegetation and soil moisture during dry spells using satellite remote sensing. American Geophysical Union, San Francisco, California, USA.
- Swetish, J., Huntzinger, D., Schwalm, C., **Fisher, J.B.**, Liu, J., Michalak, A., Bowman, K., 2014. Reducing uncertainty in terrestrial biosphere models with satellite observations of atmospheric CO₂: comparing MsTMIP with GOSAT. American Geophysical Union, San Francisco, California, USA.
- Jeong, S.-J., Schimel, D., Frankenberg, C., Drewry, D., **Fisher, J.B.**, Verma, M., Berry, J., Lee, J.-E., Joiner, J., Guanter, L., 2014. Seasonal decoupling between vegetation greenness and function over northern high latitude forests. American Geophysical Union, San Francisco, California, USA.
- Guillevic, P., Hulley, G., Hook, S., Oliospo, A., Sanchez, J.M., Drewry, D., Running, S., **Fisher, J.B.**, 2014. Evapotranspiration from airborne simulators as a proxy dataset for NASA's ECOSTRESS mission: a new thermal infrared instrument on the International Space Station. American Geophysical Union, San Francisco, California, USA.
- Oechel, W., Moreaux, V., Kalhori, A., Murphy, P., Wilkman, E., Sturtevant, C., Zhuang, Q., Miller, C., Dinardo, S., **Fisher, J.B.**, Gioli, B., Zona, D., 2014. Heterogeneity of CH₄ and net CO₂ fluxes using nested chamber, tower, aircraft, remote sensing, and modeling approaches in arctic Alaska for regional flux estimation. American Geophysical Union, San Francisco, California, USA.
- Huntzinger, D., Schwalm, C., Michalak, A., Wei, Y., Cook, R., Schaefer, K., Jacobson, A.,

- Arain, A., Ciais, P., **Fisher, J.B.**, Hayes, D., Huang, M., Huang, S., Ito, A., Jain, A., Lei, H., Lu, C., Maignan, F., Mao, J., Parazoo, N., Peng, S., Peng, C., Poulter, B., Ricciuto, D., Shi, X., Tian, H., Zeng, N., Zhao, F., Zhu, Q., Wang, W., 2014. Trends in the global net land sink and their sensitivity to environmental forcing factors: results from the Multi-scale synthesis and Terrestrial Model Intercomparison Project (MsTMIP). American Geophysical Union, San Francisco, California, USA.
- Fang, Y., Michalak, A., Schwalm, C., Huntzinger, D., Wei, Y., Cook, R., Schaefer, K., Jacobson, A., Ciais, P., **Fisher, J.B.**, Hayes, D., Huang, M., Ito, A., Jain, A., Lei, H., Lu, C., Maignan, F., Mao, J., Parazoo, N., Peng, S., Poulter, B., Ricciuto, D., Shi, X., Tian, H., Zeng, N., Zhao, F., Wang, W., 2014. Can terrestrial biosphere models capture the response of atmospheric CO₂ growth rate to ENSO? American Geophysical Union, San Francisco, California, USA.
 - Famiglietti, J., Thomas, B., Reager, J., Castle, S., David, C., Thomas, A., Andreadis, K., Argus, D., Behrangi, A., Farr, T., **Fisher, J.B.**, Landerer, F., Lo, M.-H., Molotch, N., Painter, T., Rodell, M., Schimel, D., Swenson, S., Watkins, M., 2014. Satellite observations of the epic California drought. American Geophysical Union, San Francisco, California, USA.
 - Hayes, D., Chen, G., Mao, J., Birdsey, R., Pan, Y., Huntzinger, D., Schwalm, C., Michalak, A., Wei, Y., Cook, R., Schaefer, K., Jacobson, A., Arain, A., Ciais, P., **Fisher, J.B.**, Huang, M., Huang, S., Jain, A., Lei, H., Lu, C., Maignan, F., Parazoo, N., Peng, C., Peng, S., Poulter, B., Ricciuto, D., Shi, X., Tian, H., Zeng, N., Zhao, F., 2014. Model and inventory perspectives on the role of forests in the global carbon cycle: results from the Multi-scale synthesis and Terrestrial Model Intercomparison Project (MsTMIP). American Geophysical Union, San Francisco, California, USA.
 - Parazoo, N.C., Bowman, K., **Fisher, J.B.**, Frankenberg, C., Jones, D.B.A., Cescatti, A., Pérez-Priego, Ó, Wohlfahrt, G., Montagnani, L., 2014. Optimal estimates of terrestrial GPP from fluorescence and DGVMs. European Geophysical Union, Vienna, Austria.
 - Jimenez, C., Miralles, D., Martins, J., Pires, A., Trigo, I., Kharbouche, S., Muller, J.-P., Disney, M., Kaminski, T., Bossveck, M., McCabe, M., Ershadi, A., Hirschi, M., Michel, D., Sonia, S., Schneider, P., Prata, F., Jung, M., Reichstein, M., **Fisher, J.**, Mu, Q., Su, B., Timmermans, J., Chen, X., Catherine, P., Aires, F., Fernandez, D., 2014. The ESA WACMOS-ET project: advancing in the production of evapotranspiration from satellite observations. European Geophysical Union, Vienna, Austria.
 - Wolf, S., Baldocchi, D., **Fisher, J.B.**, Keenan, T.F., 2014. Large-scale reductions in gross primary productivity and evapotranspiration caused by the 2012 US drought. American Meteorological Society, Portland, Oregon, USA.
 - Miller, C., Sander, S., Duren, R., Eldering, A., Schimel, D., **Fisher, J.B.**, Lee, M., Michalak, A., XXX, M., Orphal, J., Butz, A., 2013. Observing the carbon cycle from geostationary orbit. GEO-Carbon. Geneva, Switzerland.
 - **Fisher, J.B.**, Sikka, M., Sitch, S., Ciais, P., Poulter, B., Galbraith, D., Lee, J.-E., Huntingford, C., Viovy, N., Zeng, N., Ahlström, A., Levy, P.E., Lomas, M.R., Frankenberg, C., Saatchi S., Malhi, Y., 2013. African tropical rainforest net CO₂ fluxes in the 20th century: uncertainty amplified from increasing atmospheric CO₂. American Geophysical Union, San Francisco, California, USA.
 - Schimel, D., **Fisher, J.B.**, Stephens, B., Saatchi, S., 2013. Observational constraints on the CO₂ and climate sensitivity of the terrestrial biosphere. American Geophysical Union, San Francisco, California, USA.
 - Brzostek, E.R., **Fisher, J.B.**, Shi, M., Phillips, R.P., 2013. Mycorrhizal fungi and global land surface models? American Geophysical Union, San Francisco, California, USA.
 - Shi, M., **Fisher, J.B.**, Brzostek, E.R., Cai, X., Phillips, R.P., 2013. Global carbon cycle impact from improved plant nitrogen cycle in CLM. American Geophysical Union, San Francisco, California, USA.
 - Sikka, M., **Fisher, J.B.**, Schwalm, C.R., Liu, J., Bowman, K., Huntzinger, D.N., 2013. Integration of multiple land surface models into NASA's Carbon Monitoring System. American Geophysical Union, San Francisco, California, USA.

- Wolf, S., Baldocchi, D.D., **Fisher, J.B.**, Keenan, T.F., 2013. Impact of the 2012 US drought on ecosystem carbon and water fluxes. American Geophysical Union, San Francisco, California, USA.
- Cai, X., Yang, Z.-L., **Fisher, J.B.**, Shi, M., 2013. Integrating nitrogen dynamics into the Noah-MP land surface model for environmental prediction. American Geophysical Union, San Francisco, California, USA.
- Schwalm, C.R., Huntzinger, D.N., **Fisher, J.B.**, Liu, J., Bowman, K.W., Block, G., Sikka, M., 2013. A case study of reliability ensemble averaging for terrestrial biosphere simulators. American Geophysical Union, San Francisco, California, USA.
- Andreadis, K., Behrangi, A., Das, N., **Fisher, J.B.**, Granger, S., Landerer, F., Painter, T., Turk, J., 2013. Assimilating remote sensing observations across the terrestrial water cycle in a drought forecasting system. American Geophysical Union, San Francisco, California, USA.
- Parazoo, N., Bowman, K., Frankenberg, C., Sitch, S., **Fisher, J.B.**, Jones, D., 2013. Evaluation of terrestrial primary production using biosphere models and space-based measurements of fluorescence. American Geophysical Union, San Francisco, California, USA.
- Swetish, J.B., Huntzinger, D.N., Michalak, A.M., Schwalm, C., **Fisher, J.B.**, Liu, J., MsTMIP Core-Team, MsTMIP Participants, 2013. Evaluation of the consistency of MsTMIP model estimates with atmospheric CO₂ observations from GOSAT to provide an additional benchmark of terrestrial biosphere model performance. American Geophysical Union, San Francisco, California, USA.
- Deng, F., Jones, D., Henze, D., Bousseres, N., Bowman, K., **Fisher, J.**, Nassar, R., 2013. Estimating regional sources and sinks of CO₂ using GOSAT XCO₂. 9th International Workshop on Greenhouse Gas Measurements from Space (IWGGMS). Yokohama, Japan.
- Parazoo, N., Bowman, K., Frankenberg, C., Lee, J.-E., **Fisher, J.B.**, Worden, J., Jones, D., Berry, J., Collatz, J., Baker, I., Liu, J., Osterman, G., O'Dell, C., Sparks, A., Butz, A., Guerlet, S., Yoshida, Y., 2013. Complementary constraints on seasonal carbon exchange in southern Amazonia using GOSAT XCO₂ and chlorophyll fluorescence. 9th International Carbon Dioxide Conference. Beijing, China.
- **Fisher, J.B.**, 2013. Remote sensing of evapotranspiration. Colorado River Basin States Technical Committee Meeting. Las Vegas, Nevada, USA.
- **Fisher, J.B.**, 2013. The Regional Hydrological Extremes Assessment System (RHEAS). Western States Water Council Meeting. San Diego, USA.
- Berry, J.A., Frankenberg, C., Wennberg, P., Baker, I., Bowman, K.P., Castro-Contreas, S., Cendrero-Mateo, M.P., Damm, A., Drewry, D., Ehlmann, B., **Fisher, J.B.**, Flexas, J., Gamon, J., Genty, B., Guanter, L., Hilker, T., Joiner, J., Jung, M., Kuai, E., Lee, J.-E., Liu, J., Michalak, A.M., Miller, C., O'Dell, C., Parazoo, N., Porcar-Castell, A., Schwalm, C.R., van der Tol, C., Wunch, D., 2013. New methods for measurements of photosynthesis from space. 2013 NASA Terrestrial Ecology Science Team Meeting. La Jolla, California, USA.
- Bowman, K.W., Liu, J., Lee, M., Menemenlis, D., **Fisher, J.B.**, Collatz, G.J., Brix, H., Hill, C., Dutkiewicz, S., Bousseres, N., Henze, D., 2013. Preliminary estimates of carbon emissions constrained by GOSAT from the NASA Carbon Monitoring System Flux Pilot Project. 9th International Carbon Dioxide Conference, Beijing, China.
- Deng, F., Jones, D.B.A., Henze, D.K., Bousseres, N., Bowman, K.W., **Fisher, J.B.**, Kort, E., Wofsy, S., Nassar, R., 2013. Joint inverse modeling of surface CO₂ fluxes using satellite and surface observations of CO₂ mixing ratio. 9th International Carbon Dioxide Conference, Beijing, China.
- Jimenez, C., Prigent, C., Miralles, D., Trigo, I., Muller, J.-P., Disney, M., McCabe, M., Ershadi, A., Mueller, B., Hirschi, M., Seneviratne, S., Schneider, P., Prata, F., Jung, M., Reichstein, M., **Fisher, J.B.**, Mu, Q., Su, B., Timmermans, J., Aboulay, M., Chen, X., Aires, F., Fernandez, D., 2013. The ESA WACMOS-ET Project: Advancing in the production of evapotranspiration from satellite observations. EUMETSAT Meteorological Satellite Conference & 19th American Meteorological Society AMS Satellite Meteorology, Oceanography, and Climatology Conference, Vienna, Austria; ESA Living Planet Symposium, Edinburgh, UK.
- Andreadis, K., Behrangi, A., Das, N., **Fisher, J.B.**, Granger, S., Landerer, F., Painter, T., Turk,

J., 2013. RHEAS: A multisensory and multivariate data assimilation forecasting system. IEEE International Geoscience and Remote Sensing Symposium, Melbourne, Australia.

• Mueller, B., Hirschi, M., Jimenez, C., Ciais, P., Dirmeyer, P., Dolman, A.J., **Fisher, J.B.**, Jung, M., Ludwig, F., Maignan, F., McCabe, M.F., Miralles, D., Reichstein, M., Sheffield, J., Wang, K., Wood, E.F., Zhang, Y., Seneviratne, S.I., 2013. Benchmark products for land evapotranspiration: LandFlux-EVAL multi-dataset synthesis. European Geophysical Union, Vienna, Austria.

• García, M., Mu, Q., Ceccato, P., Ardö, J., Mougín, P., Kergoat, L., Timouk, F., Sandholdt, I., **Fisher, J.B.** 2013. Satellite-based drought monitoring in the Sahel: evaluation of two global physically-based evapotranspiration algorithms. European Geophysical Union, Vienna, Austria.

• **Fisher, J.B.**, Clark, D., Smith, P., 2013. Nitrogen cycling in the Hadley Centre land surface model (JULES). CESM Land Model and Biogeochemistry Working Group Meeting, National Center for Atmospheric Research (NCAR), Boulder, Colorado, USA.

• **Fisher, J.B.**, Lee, J.-H., Hulley, G., Hughes, C., Mallick, K., Hook, S., 2013. Uncertainty in evapotranspiration from uncertainty in land surface temperature. American Meteorological Society, Austin, Texas, USA.

• Mallick, K., **Fisher, J.B.**, Jarvis, A., Lee, J.-H., Niyogi, D., 2013. LST-based analytical solution of conductance and evapotranspiration: validation over all semi-arid FLUXNET sites. American Meteorological Society, Austin, Texas, USA.

• **Fisher, J.B.**, Sikka, M., Oechel, W.C., Koven, C.D., Huntzinger, D.N., Ahlström, A., Arain, A.M., Baker, I., Chen, J.M., Ciais, P., Davidson, C., Dietze, M., El-Masri, B., Hayes, D., Huntingford, C., Jain, A., Lomas, M.R., Poulter, B., Price, D., Sahoo, A.K., Schaefer, K., Tian, H., Tomelleri, E., Verbeeck, H., Viovy, N., Zeng, N., Miller, C.E., 2012. The state of land surface model uncertainty for the Alaskan Arctic. American Geophysical Union, San Francisco, California, USA.

• **Fisher, J.B.**, Sikka, M., Bowman, K.W., Liu, J., Lee, M., Collatz, G.J., Pawson, S., Gunson, M., CMS Flux Team, TRENDY Modelers, NACP Regional Synthesis Modelers, 2012. The NASA Carbon Monitoring System (CMS) Flux Pilot Project as a means to evaluate global land surface models. American Geophysical Union, San Francisco, California, USA.

• Mallick, K., **Fisher, J.B.**, Jarvis, A., Lee, J.-H., Niyogi, D., 2012. An analytical solution of surface energy balance based on MODIS LST: validation over all semi-arid FLUXNET sites. American Geophysical Union, San Francisco, California, USA.

• Palmer, C., **Fisher, J.B.**, Mallick, K., Lee, J., 2012. The potential of potential evapotranspiration. American Geophysical Union, San Francisco, California, USA.

• Frankenberg, C., Guanter, L., **Fisher, J.B.**, Lee, J.-E., et al., 2012. Space borne retrievals of chlorophyll fluorescence from the GOSAT satellite. American Geophysical Union, San Francisco, California, USA.

• Schwalm, C.R., Huntzinger, D.N., Michalak, A.M., **Fisher, J.B.**, Kimball, J.S., Mueller, B., Zhang, K., Zhang, Y., 2012. On the effects of evaluation decisions in model-data intercomparisons: An example using CMIP5 evapotranspiration. American Geophysical Union, San Francisco, California, USA.

• O'Connor, D., Phillips, R.P., Brzostek, E., **Fisher, J.B.**, 2012. In situ root exudation in three common tree species of southern Indiana. American Geophysical Union, San Francisco, California, USA.

• Parazoo, N.C., Bowman, K., Frankenberg, C., Lee, J.-E., **Fisher, J.B.**, Worden, J., Jones, D.B.A., Berry, J., Collatz, G.J., Baker, I.T., Jung, M., Liu, J., 2012. Space based observations of Amazon carbon cycle. American Geophysical Union, San Francisco, California, USA.

• Eldering, A., Boland, S., Bowman, K., Crisp, D., Duren, R., **Fisher, J.**, Frankenberg, C., Gunson, M., Menemenlis, D., Miller, C., Kaki, S., 2012. The scientific contributions expected from the OCO-3 mission of opportunity. American Geophysical Union, San Francisco, California, USA.

• Bowman, K.W., Liu, J., Lee, M., Pawson, S., Menemenlis, D., **Fisher, J.B.**, Collatz, G.J., Potter, C., Gregg, W., Brix, H., Ott, L., Zhu, Z., Hill, C., Dutkiewicz, S., Follows, M., Henze, D., Nassar, R., Jones, D., Kulawik, S., Weidner, R., Gunson, M., 2012. Preliminary estimates of

carbon emissions constrained by GOSAT from the NASA Carbon Monitoring System Flux Pilot Project. American Geophysical Union, San Francisco, California, USA.

- Deng, F., Jones, D.B.A., Henze, D., Bowman, K., Kulawik, S., **Fisher, J.B.**, Nassar, R., 2012. Inferring regional sources and sinks of atmospheric CO₂ from GOSAT XCO₂ data. American Geophysical Union, San Francisco, California, USA.
- **Fisher, J.B.**, Mu, Q., Mallick, K., Wood, E., Tu, K., Badgley, G., Polhamus, A., Vinukollu, R., Jiménez, J., 2012. Global terrestrial evapotranspiration from remote sensing: overview of approaches, algorithms, and products. American Geophysical Union Chapman Conference on Remote Sensing of the Terrestrial Water Cycle, Kona, Hawaii, USA.
- **Fisher, J.B.**, Mu, Q., Mallick, K., Wood, E., Tu, K., Badgley, G., Polhamus, A., Vinukollu, R., Jiménez, J., 2012. Global terrestrial evapotranspiration from remote sensing: overview of approaches, algorithms, and products. American Meteorological Society, New Orleans, Louisiana, USA.
- Boland, S., Bowman, K., Crisp, D., Duren, R., Eldering, A., **Fisher, J.**, Frankenberg, C., Gunson, M., Menemenlis, D., Miller, C., 2012. The scientific contributions expected from OCO-3 if installed on the International Space Station. 1st Annual International Space Station Research and Development Conference, Denver, Colorado, USA.
- Mallick, K., **Fisher, J.B.**, Guillaume, A., Ryu, Y., Stephens, G., 2011. Global net radiation for evapotranspiration at 1 km²: production and uncertainty assessment. 2011 Western States Remote Sensing of Evapotranspiration Workshop, Boise, Idaho, USA.
- **Fisher, J.B.**, Polhamus, A., Bowman, K., Collatz, G.J., Potter, C., Lee, M., Liu, J., Jung, M., Reichstein, M., 2011. Evaluation of NASA's Carbon Monitoring System (CMS) Flux Pilot: Terrestrial CO₂ Fluxes. American Geophysical Union, San Francisco, California, USA.
- Boroon, M.H.R., **Fisher, J.B.**, 2011. Linking groundwater quality and quantity: An assessment of satellite-based groundwater storage anomalies from GRACE against ground measurements of contaminants in California. American Geophysical Union, San Francisco, California, USA.
- Frankenberg, C., **Fisher, J.B.**, Lee, J.-E., Guanter, L., van der Tol, C., Toon, G.C., Kuze, A., Yokota, T., Badgley, G., Butz, A., Jung, M., Saatchi, S., Worden, J., 2011. New global observations of the terrestrial carbon cycle from GOSAT: Patterns of plant fluorescence with gross primary productivity. American Geophysical Union, San Francisco, California, USA. NASA Carbon Cycle & Ecosystems Joint Science Workshop, Alexandria, Virginia, USA.
- Brix, H., Menemenlis, D., Gregg, W., Bowman, K., Dutkiewicz, S., **Fisher, J.B.**, Follows, M., Hill, C., Jahn, O., Lee, M., Liu, J., Ott, L., Wang, D., 2011. Air-sea CO₂ flux estimates from two data-constrained ocean models for the NASA Carbon Monitoring Study Flux Pilot Project and their impact on atmospheric CO₂ concentration variability. American Geophysical Union, San Francisco, California, USA.
- Bowman, K.W., Liu, J., Lee, M., Pawson, S., Ott, L.E., Menemenlis, D., **Fisher, J.B.**, Collatz, G.J., Potter, C.S., Gregg, W.W., Brix, H., Zhu, Z., Hill, C.N., Dutkiewicz, S., Follows, M.J., Henze, D.K., Nassar, R., Jones, D.B.A., Kulawik, S.S., Gunson, M.R., Jucks, K.W., 2011. Preliminary estimates of carbon emissions constrained by GOSAT from the NASA Carbon Monitoring Study Flux Pilot Project. American Geophysical Union, San Francisco, California, USA.
- Ott, L., Pawson, S., Zhu, Z., Brix, H., Collatz, G.J., Gregg, W., Hill, C., Menemenlis, D., Potter, C., Bowman, K., Dutkiewicz, S., Eldering, A., **Fisher, J.B.**, Follows, M., Gunson, M., Jucks, K., Kawa, R., Liu, J., Lee, M., 2011. Using GEOS-5 atmospheric transport simulations to test the consistency of land- and ocean-carbon fluxes with CO₂ observations. American Geophysical Union, San Francisco, California, USA.
- **Fisher, J.B.**, Block, G., Guillaume, A., Stephens, G., Miller, C., Lee, J.-E., Sitch, S., Ciais, P., Wang, Y., 2011. Ensemble land surface modeling at JPL. NASA Carbon Cycle & Ecosystems Joint Science Workshop, Alexandria, Virginia, USA.
- **Fisher, J.B.**, Sitch, S., Malhi, Y., Fisher, R.A., Huntingford, C., Tan, S.-Y., 2011. Global modeling of plant N uptake and C allocation. Ecological Society of America, Austin, Texas, USA. (*Invited*)
- **Fisher, J.B.**, Badgley, G., Jiménez, C., Tu, K.P., Vinukollu, R., 2011. Uncertainty in global

evapotranspiration estimates from choice of input forcing datasets. NASA/USDA Workshop on “Evapotranspiration: An Essential Observation for Climate Understanding and Efficient Water Management”, Silver Spring, Maryland, USA.

- Zelazowski, P., Malhi, Y., Huntingford, C., Sitch, S., **Fisher, J.B.**, 2011. Changes in the potential distribution of humid tropical forests on a warmer planet. British Ecological Society Annual Symposium: Forests and Global Change, Cambridge, UK.
- **Fisher, J.B.**, 2011. Evapotranspiration. International Land Model Benchmarking Project Meeting, Irvine, California, USA. (*Invited*)
- Simard, M., Pinto, N., Baccini, A., **Fisher, J.B.**, 2011. Global forest height from ICESat, MODIS and environmental variables. AmeriFlux Science Meeting & 3rd NACP All-Investigators Meeting, New Orleans, Louisiana, USA.
- Frankenberg, C., Butz, A., **Fisher, J.B.**, Toon, G., Kuze, A., Yokota, T., Badgley, G., Worden, J., 2011. Global remote sensing of chlorophyll fluorescence using high-resolution O2 A-band spectra recorded by the GOSAT satellite. The 7th International Workshop on Greenhouse Gas Measurements from Space, Edinburgh, UK.
- Bowman, K., Lee, M., Henze, D., Nassar, R., Pawson, S., Menemenlis, D., **Fisher, J.**, Hill, C., Potter, C., Gregg, W., Collatz, J., Brix, H., Ott, L., Zhu, Z., Dutkiewicz, S., Follows, M., Kulawik, S., Worden, J., Osterman, G., Jones, D., Weidner, R., Gunson, M., Jucks, K., 2011. Preliminary estimates of carbon emissions constrained by GOSAT and TES from the NASA Carbon Monitoring Study Flux Pilot Project. The 7th International Workshop on Greenhouse Gas Measurements from Space, Edinburgh, UK.
- Pawson, S., Ott, L., Zhu, Z., Bowman, K., Brix, H., Collatz, J., Dutkiewicz, S., **Fisher, J.**, Gregg, W., Hill, C., Menemenlis, D., Potter, C., Gunson, M., Jucks, K., 2011. Forward modeling of atmospheric carbon dioxide in GEOS-5: Uncertainties related to surface fluxes and sub-grid transport. The 7th International Workshop on Greenhouse Gas Measurements from Space, Edinburgh, UK.
- **Fisher, J.B.**, Badgley, G., Blyth, E., 2010. Global nutrient limitation in terrestrial vegetation from remote sensing. American Geophysical Union, San Francisco, California, USA.
- Frankenberg, C., Butz, A., **Fisher, J.B.**, Toon, G., Kuze, A., Yokota, T., 2010. Global remote sensing of chlorophyll fluorescence using high-resolution spectra recorded by the Japanese GOSAT satellite. American Geophysical Union, San Francisco, California, USA.
- **Fisher, J.B.**, Malhi, Y., Torres, I.C., Metcalfe, D.B., van de Weg, M., Meir, P., Espejo, J.E.S., Huaraca, W., 2010. Nutrient limitation in cloud forests and rainforests along a 3000 m elevation gradient in the Peruvian Andes. Ecological Society of America, Pittsburgh, Pennsylvania, USA. (*Invited*)
- **Fisher, J.B.**, Njoku, E.G., Entekhabi, D., 2010. Soil Moisture Active Passive (SMAP): NASA’s Earth observation mission to measure soil moisture and freeze/thaw state globally, and provide improved estimates of net ecosystem exchange. Ecological Society of America, Pittsburgh, Pennsylvania, USA.
- Mueller, B., Seneviratne, S.I., Hirschi, M., Corti, T., Jimenez, C., Balsamo, G., **Fisher, J.B.**, Jung, M., Reichstein, M., Sheffield, J., Teuling, A.J., Wang, K., Wood, E., 2010. First results from LandFlux-EVAL intercomparison project: Analysis of multi-year datasets. European Geophysical Union, Vienna, Austria.
- **Fisher, J.B.**, Armanios, D., Tu, K.P., 2009. Global evapotranspiration from remote sensing driven by SRB, AIRS and MODIS, validated at 36 FLUXNET sites. American Geophysical Union, San Francisco, California, USA.
- **Fisher, J.B.**, Sitch, S., Malhi, Y., Fisher, R.A., Huntingford, C., Tan, S.-Y., 2009. What principles govern plant nitrogen uptake responses to changes in CO₂, climate and nitrogen deposition? American Geophysical Union, San Francisco, California, USA.
- **Fisher, J.B.**, Tu, K., Armanios, D., 2009. Global evapotranspiration from remote sensing. Joint 6th International GEWEX and 2nd iLEAPS Science Conference; iLEAPS ECSW Meeting; LandFlux Meeting. Melbourne, Australia.
- Morel, A., **Fisher, J.B.**, 2009. Where has the carbon gone? Monitoring biomass and emissions from conversion of rainforest to oil palm in Sabah, Malaysia. Remote Sensing and

Photogrammetry Society Annual Conference, Leicester, UK.

- Sitch, S., Clark, D., Cox, P., **Fisher, J.B.**, Fisher, R., Harrison, S., Huntingford, C., Jones, C., Mercado, L., Pacifico, F., 2009. Advances in terrestrial ecosystem processes. QUEST Annual Science Meeting, Swindon, UK.
- **Fisher, J.B.**, Malhi, Y., Fisher, R.A., Tan, S.-Y., Sitch, S., Huntingford, C., 2008. A globally applicable, mechanistic model of plant nitrogen uptake, retranslocation and fixation. American Geophysical Union, San Francisco, California, USA.
- **Fisher, J.B.**, Malhi, Y., de Araújo, A.C., Bonal, D., Gamo, M., Goulden, M.L., Hirano, T., Huete, A.R., Kondo, H., Kumagai, T., Loescher, H., Miller, S., Nobre, A.D., Nouvellon, Y., Oberbauer, S.F., Panuthai, S., von Randow, C., da Rocha, H.R., Roupsard, O., Saleska, S., Tanaka, K., Tanaka, N., Tu, K.P., 2007, 2008. The land-atmosphere water flux in the tropics. LBA-ECO 11th Science Team Meeting, Salvador, Bahia, Brazil. iLEAPS Science Conference: Current understanding of how integrated land ecosystem atmosphere processes influence climate dynamics, Hyères, France.
- **Fisher, J.B.**, 2008. QUERCC: Quantifying and Understanding Ecosystem Roles in the Carbon Cycle. QUEST Annual Science Meeting, Winchester, UK. (*Invited*)
- **Fisher, J.B.**, Malhi, Y., de Araújo, A.C., Bonal, D., da Rocha, H.R., Goulden, M.L., Hirano, T., Kumagai, T., Loescher, H., Miller, S., Nobre, A.D., Oberbauer, S., Saleska, S., von Randow, C., Tu, K.P., 2007. The tropical land-atmosphere water flux: Measurements, models and controls for evapotranspiration in the Amazon. LBA-ECO 11th Science Team Meeting, Salvador, Bahia, Brazil.
- **Fisher, J.B.**, Tu, K.P., 2007. Global trends in potential and actual evapotranspiration based on 20 years of satellite observations. American Geophysical Union, San Francisco, California, USA.
- **Fisher, J.B.**, Malhi, Y.S., 2006, 2007. Modelling plant nitrogen: fixation, uptake and allocation. QUEST, QUERCC Fall meeting, Edinburgh, UK. First JULES Science Meeting, Exeter, UK.
- Tu, K.P., **Fisher, J.B.**, 2006. Remote sensing of the land-atmosphere water flux: Global validation using FLUXNET data. AmeriFlux meeting, Boulder, Colorado, USA.
- **Fisher, J.B.**, 2006. Summary of past, present and future research. International Networking of Young Scientists on Imaging Techniques and GIS: Applications in Environmental and Natural Resources Management. British Council, Universiti Malaya, Kuala Lumpur, Malaysia.
- **Fisher, J.B.**, Trulio, L.A., Biging, G., Chromczak, D., 2006. Use of GIS and spatial analysis for wildlife management measures. American Society for Photogrammetry and Remote Sensing, Reno, Nevada, USA.
- **Fisher, J.B.**, Misson, L., Goldstein, A.H., 2006. Sap flow measurements for ponderosa pine, manzanita and ceanothus at Blodgett Forest, California. Blodgett Forest Research Workshop, Georgetown, California, USA.
- Tu, K.P., **Fisher, J.B.**, 2006. Remote sensing of the land-atmosphere water flux: Global validation using FLUXNET data. Proceedings of the 1st iLEAPS Science Conference, Boulder, Colorado, USA.
- **Fisher, J.B.**, Tu, K., 2005. New global estimates of the land-atmosphere water flux: A fully remote sensing driven, flux site-validated ecophysiological model of evapotranspiration. The 9th International Symposium on Physical Measurements and Signatures in Remote Sensing, Beijing, China.
- Dawson, T., Tu, K., **Fisher, J.B.**, Baldocchi, D., 2004. Partitioning Evaporation and Transpiration Using 18-O of Water. Biosphere Atmosphere Stable Isotope Network Meeting, Point Reyes, California, USA.
- **Fisher, J.B.**, 2004. Estimation of Evapotranspiration Across Multiple Scales: Sap Flow, Flux Measurement, Remote Sensing, and Sociology. NASA Earth System Science Network Symposium, Washington, D.C., USA.
- **Fisher, J.B.**, Tu, K., 2004. Validation of MODIS-Derived Parameters with FLUXNET Measurements: Surface Temperature, Air Temperature, Fraction of Photosynthetically Absorbed Radiation, and Albedo. Numerical Terradynamic Simulation Group's MODIS

Vegetation Workshop II, Missoula, Montana, USA.

- Tu, K.P., **Fisher, J.B.**, 2004. Remote sensing of plant transpiration and soil evaporation using MODIS data. Numerical Terradynamic Simulation Group's MODIS Vegetation Workshop II, Missoula, Montana, USA.
- **Fisher, J.B.**, 2003. Environmental Justice / Air Toxics analysis for West Oakland: Combining GIS and spatial data analysis. American Public Health Association (Awarded 1st Place in the Environment Section Student Award Poster Session), San Francisco, California, USA.
- **Fisher, J.B.**, 2003. Environmental Justice / Air Toxics analysis for West Oakland: Combining GIS and spatial data analysis. GIS Day – Public Interest GIS, University of California, Berkeley, USA.
- **Fisher, J.B.**, DeBiase, T.A., Qi, Y., Xu, M., Goldstein, A., 2001. Evapotranspiration methods compared on a Sierra Nevada forest ecosystem. American Geophysical Union, San Francisco, California, USA.
- DeBiase, T.A., Qi, Y., **Fisher, J.B.**, Baldocchi, D., Goldstein, A., Xu, M., Liang, X., 2001. Comparison of potential evapotranspiration methods based on results from FLUXNET sites in the United States. American Geophysical Union, San Francisco, California, USA.
- DeBiase, T.A., **Fisher, J.B.**, Qi, Y., Goldstein, A., 1999. Evapotranspiration revisited: Linking soil moisture and canopy resistance. International Symposium on Integrated Water Resource Management, University of California, Davis, USA.

MEDIA

- **NASA Satellite Images Uncover Underground Forest Fungi**, 2016
- Highlighted in: *American Theatre*, As the Climate Change Threat Grows, So Does a Theatrical Response, 2016
- Featured on: *Art In Science*, Los Angeles County Office of Education, 2015
- Expert Consultant to: *Madam Secretary* ("Face the Nation", S1Ep17), 2015
- **NASA Finds Good News on Forests and Carbon Dioxide**, 2014
- **NASA's ECOSTRESS Will Monitor Plant Health**, 2014
- **With Few Data, Arctic Carbon Models Lack Consensus**, 2014
- Featured on: *The Playboy Morning Show*, 2013
- Sound byte for: *KTLA on Climate Change*, 2013
- **NASA Maps How Nutrients Affect Plant Productivity**, 2012
- **NASA Map Sees Earth's Trees in a New Light**, 2012
- Interviewed in: *HydroRisk* website—<http://www.hydorisk.com/index.php/blog/11>
- Featured in: Hambly, Vivienne, 2009. Into the Amazon's Heart. *Sublime* (October): 12-20.

INVITED TALKS (NON-CONFERENCE)

- **Killefer Flammang Architects** (2016)
Santa Monica, California, USA
"Climate Δ "
- **League of Women Voters** (2016)
Pasadena, California, USA
"The Fate of the Terrestrial Biosphere"
- **Our Lady of the Assumption Catholic Church** (2016)
Claremont, California, USA
"Climate Δ "
- **Action LA: Climate Change Theater** (2015)
Santa Monica, California, USA
"Climate Δ "
- **The Waverly School, Middle School** (2015)
Pasadena, California, USA
"Climate Δ "
- **Holy Name of Mary Parish: Caring for Our Common Home** (2015)
San Dimas, California, USA

“Climate Δ ”

- **Church of Scientology: World Environment Day** (2015)

Los Angeles, California, USA

“Climate Δ ”

- **EarthCube: Essential Variables and Associated Challenges for EarthCube Science Drivers** (2015)

Arlington, Virginia, USA

“Terrestrial Remote Sensing”

- **Stanford University: Carnegie Institute for Global Ecology** (2015)

Palo Alto, California, USA

“The Fate of the Terrestrial Biosphere Under a Changing Climate”

- **University of Texas at Austin: Center for Integrated Earth System Science** (2015)

Austin, Texas, USA

“The Fate of the Terrestrial Biosphere Under a Changing Climate”

- **NASA Museum Alliance** (2015)

Pasadena, California, USA

“The Fate of the Terrestrial Biosphere Under a Changing Climate”

- **SMAP Mission Launch Event** (2015)

Pasadena, California, USA

“Mud, Mud, Glorious Mud: The Science of SMAP”

- **Art Center College of Design** (2015)

Pasadena, California, USA

“Climate Δ ”

- **SMAP Mission Pre-Launch Educator Conference** (2014)

Pasadena, California, USA

“Mud, Mud, Glorious Mud: The Science of SMAP”

- **Environmental Science and Technology High School** (2014)

Los Angeles, California, USA

“Career Development of a NASA Climate Scientist”

- **United Nations Association – Pomona Valley (PVUNA)** (2014)

Pomona, California, USA

“Climate Change: The Science & Challenge”

- **University of California, Los Angeles: Seminar in Department of Atmospheric & Oceanic Sciences** (2014)

Los Angeles, California, USA

“The Fate of the Terrestrial Biosphere Under Climate Change”

- **KIPP Academy Elementary School** (2014)

Los Angeles, California, USA

“Climate Δ ”

- **Active Claremont** (2014)

Claremont, California, USA

“Climate Δ ”

- **University of Southern California: Seminar in Department of Earth Sciences** (2014)

Los Angeles, California, USA

“The Fate of the Terrestrial Biosphere Under Climate Change”

- **Child Educational Center: Mud Week** (2013)

La Cañada, California, USA

“Mud, Mud, Glorious Mud”

- **Laboratoire des Sciences du Climat et l’Environnement** (2013)

Gif-sur-Yvette, France

“CHANGE: Carbon, Hydrology And Nutrients Global Evaluation”

- **Observatoire de Paris** (2013)

Paris, France

“CHANGE: Carbon, Hydrology And Nutrients Global Evaluation”

- **Tel Aviv University: Porter School for Environmental Studies (2013)**
Tel Aviv, Israel
“CHANGE: Carbon, Hydrology And Nutrients Global Evaluation”
- **LA Climate Rally (2013)**
Los Angeles, California, USA
“Climate Science”
- **JPL Climate Day (2012)**
Pasadena, California, USA
“Climate Δ ”
- **University of Southern California: Science, Technology and Society (2012)**
Los Angeles, California, USA
“Climate Science and Society”
- **East Los Angeles College: STEM Summer Academy (2012)**
Los Angeles, California, USA
“Climate Δ ”
- **Lawrence Magnet School (2012)**
Pasadena, California, USA
“Climate Δ ”
- **League of Women Voters: When It Rains It Doesn't Pour: Climate Change and Water: A Primer for Voters (2012)**
Pasadena, California, USA
“Climate Δ ”
- **Jet Propulsion Laboratory: Earth Week Earth Science Talks: What's New in JPL Earth Science? (2012)**
Pasadena, California, USA
“What JPL is Doing to Observe and Predict Changes in Earth's Terrestrial Ecosystems and Water Cycle”
- **Pasadena Community College: Environmental Studies (2012)**
Pasadena, California, USA
“NASA Earth Science”
- **Jet Propulsion Laboratory: Climate Change Symposium (2011)**
Pasadena, California, USA
“CHANGE: Carbon, Hydrology And Nitrogen for Global Evaluation”
- **Jet Propulsion Laboratory: SIRI & USRP Speaker Series (2011)**
Pasadena, California, USA
“CHANGE: Carbon, Hydrology And Nitrogen for Global Evaluation”
- **Occidental College: Physical Geology (2011)**
Eagle Rock, California, USA
“NASA Earth Science”
- **California Institute of Technology: Yuk Lunch Seminar, Div. of Geological and Planetary Sciences (2011)**
Pasadena, California, USA
“CHANGE: Carbon, Hydrology And Nitrogen for Global Evaluation”
- **IEEE: Los Angeles Metro Section (2010)**
Monterey Park, California, USA
“CHANGE: Carbon, Hydrology And Nitrogen for Global Evaluation”
- **Occidental College: The Remsen Bird Lecture for Geology, Biology and Chemistry (2010)**
Eagle Rock, California, USA
“CHANGE: Carbon, Hydrology And Nitrogen for Global Evaluation”
- **Yale University: School of Forestry and Environmental Studies (2010)**
New Haven, Connecticut, USA
“Remote Sensing of the Hydrological Cycle”
- **European Science Foundation (2008)**

Porquerolles, France

“QUEST: The State of UK Climate Modelling”

• **Korea University: Division of Environmental Science & Ecological Engineering** (2008)

Seoul, South Korea

“QUEST: The State of UK Climate Modelling”

• **University of Oxford: Biodiversity Research Seminar, School of Geography and the Environment** (2008)

Oxford, UK

“Evapotranspiration is a proxy for biodiversity, but how accurate are these estimates?”

• **TippingPoint Climate Art Programme: Climate Change: Scientific Briefing Day for Artists** (2007)

Oxford, UK

“Earth Observation”

• **University of Oxford: Oriel College, Forum on the Environment** (2007)

Oxford, UK

“From Leaf Measurements to Satellite Remote Sensing: Methods in the Environmental Sciences”

• **Korea University: Division of Environmental Science & Ecological Engineering** (2005)

Seoul, South Korea

“The land-atmosphere water flux: the individual plant, ecosystem fluxes, global patterns, and the sociological advancement of science”

• **University of California, Berkeley: Department of Environmental Science, Policy, & Management** (2005)

Berkeley, California, USA

“Spatial dimensions of environmental justice: GIS and spatial analysis in West Oakland”

HONORS AND AWARDS

• Voyager Award, ECOSTRESS (2015)

• JPL Team Award (32), ECOSTRESS (2014)

• NASA Group Achievement Award, Carbon Monitoring System Flux Pilot Project Team (2013)

• JPL Team Award (8000), Water Cycle Workshop (2013)

• JPL Team Award (324), Water Cycle Workshop (2012)

• JPL Team Award (324), Carbon Monitoring System (2012)

• JPL Team Award (324), CARVE (2012)

• JPL Team Award (388), CARVE (2012)

• MsTMIP Mini-Grant, NASA, Terrestrial Ecology (2011)

• New Phytologist Trust, Travel Award to 96th ESA Annual Meeting (2011)

• JPL Team Award (324), SMAP Science Cal/Val (2010)

• Junior Research Fellowship, Linacre College, Oxford University (2009)

• Cape Farewell, Designated Scientist to Andes Expedition (2009)

• Oxford University, School of Geography and the Environment, ECI Divisional Merit Award (2008)

• Royal Society, Conference Grant (2008)

• European Science Foundation Conference Travel Award (2008)

• iLEAPS Conference Travel Award (2008)

• Large Scale Biosphere-Atmosphere Experiment in Amazonia Travel Award (2007)

• Oxford University ECI Small Grants for Postgraduate Research (2007)

• British Council International Networking for Young Scientists (2006)

• University of California, Berkeley Faculty Research Grant (2004 – 2006)

• G. Fitzgarrald Martin Scholarship (2005)

• NASA Earth System Science Fellowship (2002 – 2005)

• American Public Health Association Environment Section Student Award Poster Session (*1st Place*) (2003)

• US EPA, Region 9 Air Division Certificate of Appreciation (2001)

- The National Dean's List Award (2001)
- Association of California Water Agencies (2000)
- Los Angeles Audubon Society Urban Wildlife Award (1993)

ACADEMIC ACTIVITIES

- Editor, *Hydrosphere* (2015-current)
- Contributing Author, 2nd State of the Carbon Cycle Report (SOCCR), US Global Change Research Program (USGCRP) (2016-current)
- Working Group Lead, Science Team Member, NASA Arctic Boreal Vulnerability Experiment (ABOVE) (2015-current)
- Convener, Remote Sensing of Vegetation Function and Traits, AGU Fall Meeting (2014)
- Judge, AGU Fall Meeting, Outstanding Student Paper Award (2014)
- Member, Carbon Cycle & Ecosystems Joint Science Workshop Steering Committee (2014)
- Editor, *International Journal of Applied Earth Observation and Geoinformation* (Special Issue: *Advances in Remote Sensing of Vegetation Function and Traits*) (2014)
- Panelist, Ask A Climate Scientist, Earth Day Events at Caltech (2014)
- Convener, Remote Sensing of Vegetation for Monitoring Ecosystem Functioning, AGU Fall Meeting (2013)
- Judge, AGU Fall Meeting, Outstanding Student Paper Award (2013)
- Coordinator, NASA Carbon Monitoring System Capability Risk Working Group (2013)
- Member, NASA Terrestrial Ecology Modeling Working Group (2013)
- Judge, Climate Debate, Notre Dame High School, Sherman Oaks, CA (2013)
- Panelist, Moderator, ClimatePalooza, USC Annenberg School for Communication and Journalism, NASA JPL (2013)
- Judge, AGU Fall Meeting, Outstanding Student Paper Award (2012)
- Science Team Member, NASA Carbon Monitoring System, NASA (2012)
- Lead Organizer, JPL Workshop on "Water in a Changing Climate: The Science", NASA JPL (2012)
- Host, UC Berkeley Student Externship Program (2012)
- President, Biogeochemistry: New Paradigms in Biogeochemical Cycling 1; and, Judge, Bell-Braun Student Presentations, Ecological Society of America (2011)
- Co-chair, New and Emerging Satellite Missions for Remote Sensing Hydrology I, American Geophysical Union (2010)
- iLEAPS Scientific Organizing Committee, Early Career Scientist Workshop (2010-2011)
- TES/AIRMOSS Hiring Committee Member, NASA JPL, CalTech (2010)
- External Reviewer, Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences (2010)
- Member, Oxford University Supreme Governing Body (Congregation) (2009-2010)
- Ecosystems Group Representative, ECI Management Team, University of Oxford (2008-2010)
- Member, ECI MSc Core Teaching Team, University of Oxford (2008-2010)
- Coach, Oxford University Men's Basketball Team (Blues) (2006)
- Contributing Sports Journalist, Cherwell 24 Newspaper and The Oxford Student (2006)
- Departmental Liaison, UC Berkeley Graduate Assembly (2005-2006)
- Member, Graduate Programs Committee, UC Berkeley Dept. ESPM (2004-2005)
- Graduate Student Representative, Graduate Student Admissions, UC Berkeley Dept. ESPM (2004-2005)
- Member, Judicial Committee, UC Berkeley Graduate Assembly (2004-2005)
- Departmental Delegate, UC Berkeley Graduate Assembly (2002-2005)
- Graduate Student Representative, Faculty Search Committee, UC Berkeley Dept. ESPM (2004)
- Chair, UC Berkeley Graduate Assembly's Committee on Affirmative Action (2004)
- President, UC Berkeley Environmental Sciences Students Association (2001)
- Member, UC Berkeley Hapa Issues Forum (1998-2001)

- Student advisor to the dean, UC Berkeley College of Natural Resources (1997)
- President, Taft High School Ecology Club (1997)

REVIEWER

- *Advances in Water Resources*
- *Agricultural & Forest Meteorology*
- *American Public Health Association*
- *Annals of Botany*
- *Atmospheric Chemistry and Physics*
- *Belgian Remote Sensing Research Programme*
- *Biogeosciences*
- *BioScience*
- *Biotropica*
- *Climate Research*
- *Climatic Change*
- *Ecological Engineering*
- *Ecological Modelling*
- *Ecology*
- *Ecosystems*
- *Environmental Modelling & Software*
- *Environmental Research Letters*
- *Environmental Science & Policy*
- *EOS*
- *Frontiers in Earth Science*
- *Geophysical Research Letters*
- *Geoscience & Remote Sensing Letters*
- *Geoscientific Model Development*
- *Global Change Biology*
- *Global Change Biology – Bioenergy*
- *Global Ecology and Biogeography*
- *Global and Planetary Change*
- *Health & Place*
- *Hydrogeology Journal*
- *Hydrological Processes*
- *Hydrological Sciences Journal*
- *Hydrology and Earth System Sciences*
- *IEEE Transactions on Geoscience & Remote Sensing*
- *IEEE Geoscience and Remote Sensing Letters*
- *IPCC AR5 (Expert Reviewer)*
- *Journal of Advances in Modeling Earth Systems*
- *Journal of the American Water Resources Association*
- *Journal of Applied Meteorology and Climatology*
- *Journal of Biogeography*
- *Journal of Climate*
- *Journal of Geography & Regional Planning*
- *Journal of Geophysical Research – Atmospheres*
- *Journal of Geophysical Research – Biogeosciences*
- *Journal of Hydrology*
- *Journal of Hydrometeorology*
- *Journal of Selected Topics in Earth Observations & Remote Sensing*
- *Journal of Wildlife Management*
- *Land Use Policy*
- *Landscape and Urban Planning*
- *Nature*
- *Nature Geoscience*
- *Nature Plants*
- *New Phytologist*
- *Oecologia*
- *Plant Ecology & Diversity*
- *PLOS ONE*
- *Progress in Physical Geography*
- *Remote Sensing of Environment*
- *Scientific Reports*
- *Theoretical and Applied Climatology*
- *Tree Physiology*
- *UK Natural Environment Research Council (NERC)*
- *US Department of Energy (DOE)*
- *US National Aeronautics and Space Administration (NASA)*
- *US National Science Foundation (NSF)*
- *Water*
- *Water Resources Research*

TEACHING

- **Terrestrial Biosphere Modeling** (2016)
University of California, Los Angeles
- **Storytelling for Scientists** (2016)
California Institute of Technology
- **Introduction to Remote Sensing, GIS & Modelling** (2007 – 2009)
University of Oxford, UK, Environmental Change Institute and School of Geography and the Environment
- MSc in Environmental Change & Management
- MSc in Biodiversity, Conservation & Management
- MSc in Water Science, Policy & Management

- **Earth Observation: Ecological Applications** (2006 – 2009)
University of Oxford, UK, School of Geography and the Environment
- **Land-Surface Climatology** (2007)
University of Oxford, UK, School of Geography and the Environment
- **Evapotranspiration: Sap Flow, Isotopes, Eddy Flux, Modelling & Remote Sensing** (2006)
University of Oxford, UK, Centre for the Environment – Water Science, Policy & Management MSc
- **Senior Research Seminar in Environmental Sciences** (2005 – 2006)
University of California, Berkeley, USA, Department of Environmental Science, Policy, & Management
- **Environmental Justice: Race, Class, Equity & the Environment** (2004)
University of California, Berkeley, USA, Department of Environmental Science, Policy, & Management
- **Natural Resource Sampling & Assessment** (2002)
University of California, Berkeley, USA, Department of Environmental Science, Policy, & Management

STUDENTS

Current

- Purdy, AJ, Ph.D. in Department of Earth System Science, UC Irvine
Soil moisture improvements to evapotranspiration modeling
- Ciochina, Mark, Ph.D. in Department of Geography, UCLA
Tropical nutrient dynamics and canopy reflectance
- Kolus, Hannah, M.S. in School of Earth Sciences & Environmental Sustainability, Northern Arizona University
Multi-scale Synthesis and Terrestrial Model Intercomparison Project
- Halverson, Gregory, M.A. in Department of Geography, CSUN
Operational evapotranspiration application system
- Lawal, Shakirudeen, Ph.D. in Department of Environmental and Geographical Science, University of Cape Town
Vegetation Modeling for Southern Africa
- Qiu, Bo, Visiting Scholar in Department of Geography, UCLA
Integration of remotely sensed soil moisture and fluorescence to constrain coupled water-carbon cycle

Graduated 2015

- Cai, Xitian, Ph.D. in Department of Geosciences, UT-Austin; JPL DRDF/SURP/SC 2013
Integration of Nitrogen Cycle Dynamics into the Noah-MP Land Surface Model: Application for Environmental Modeling and Prediction
- Vickers, Emily, B.S. in Environmental Science, Tulsa Community College
Evapotranspiration from drones
- McDonald, Trevor, B.S. in Department of Geography, UCLA
Evapotranspiration web development
- Kim, Sol, B.S. UC Berkeley
Evapotranspiration web development
- Muñoz, Gus, B.S., M.S., USC
Evapotranspiration web development

Graduated 2014

- Halterman, Sarah, Ph.D. in Department of Geography, UCLA; JVS RP
Links Between Long-Term Soil Carbon Storage and Canopy Properties in Tropical Wet Forests
- Kacey Deamer, M.S. in Annenberg School for Communication and Journalism, USC; JVS RP
Climate science communication
- Vergopolan, Noemi, B.S. in Environmental Engineering, Federal University of Paraná, Brazil;

JVSRP 2013

Impact of deforestation in Amazonia on the regional hydrological cycle from remote sensing

Graduated 2013

- Sok, Malen, B.S. in Computer Science, Cal State Poly Pomona; SIRI, JVSRP 2012-2013
Global land surface modeling with the HyLand dynamic global vegetation model
- Palmer, Claralyse, Agoura High School 2012-2013
The potential of potential evapotranspiration

Graduated 2012

- O'Connor, Daniel, B.S. in Biology, Occidental College; SIRI 2012 (completed internship)
Expansion and refinement of the Fixation & Uptake of Nitrogen model
- Marquez, Elisha, Eagle Rock High School; Minority Student Programs 2012
Ecohydrology
Awarded the Sister Clarice Lolich Outstanding Student Presentation Award

Graduated 2011

- Tsao, Nicholas, MSC in Environmental Change and Management, Oxford University 2010-2011
Can vegetation water content be observed globally from satellite remote sensing? An assessment of six products using a combination of radar, microwave and optical data, and implications for water and carbon cycles

Graduated 2010

- Badgley, Grayson, MSC in Environmental Change and Management, Oxford University 2009-2010
Nutrients from space: Remote sensing nutrient limitation in terrestrial vegetation
Awarded Distinction and Overall Distinction (Coursework, Dissertation and Exams)
- Garonna, Irene, MSC in Environmental Change and Management, Oxford University 2009-2010
Land surface temperature model intercomparison and validation with FLUXNET and MODIS data
Awarded Distinction
- Moore, Scott, MSC in Environmental Change and Management, Oxford University 2009-2010
Charting the subterranean sea: The promise of groundwater storage change assessment from satellite observations and the persistent challenges of water management in Yemen
Awarded Overall Distinction (Coursework, Dissertation and Exams)
- Polhamus, Aaron, MSC in Environmental Change and Management, Oxford University 2009-2010
Sources of bias in latent heat of evaporation model predictions: Should parameterizing resistances be a priority?
Awarded Distinction

Graduated 2009

- Armanios, Daniel, MSc in Water Science, Policy & Management, Oxford University 2008-2009
A remote sensing framework to gauge sustainability of community water practices: A quantitative diagnostic for integrated water resource management decision support models
- Gadsden, Martin, MSc in Biodiversity, Conservation & Management, Oxford University 2008-2009
Maximising biodiversity conservation benefits of REDD strategies in Peru
Awarded Distinction
- Krishnamurthy, Krishna, MSc in Environmental Change and Management, Oxford University 2008-2009
Mainstreaming disaster risk reduction into development strategies

Awarded Distinction and Best Overall Performance, ECM 2008-2009 (Coursework, Dissertation and Exams)

• Massey, Ashley, MSc in Biodiversity, Conservation & Management, Oxford University 2008-2009

Dragons prevent deforestation? The protection and governance of Kiang West National Park in the Gambia, West Africa

Awarded Distinction and Best Overall Performance, BCM 2008-2009 (Coursework, Dissertation and Exams)

• Plotnykova, Hanna, MSc in Biodiversity, Conservation & Management, Oxford University 2008-2009

GIS-based conservation management for the Ukraine

• Thomas, Matt, MSc in Environmental Change and Management, Oxford University 2008-2009
Impacts of climate change on an ancient woodland

Awarded Distinction

• Wong, Chun (John) Yuen, MSc in Biodiversity, Conservation & Management, Oxford University 2008-2009

Climate change impacts on polar migratory bird routes

Graduated 2008

• Gibbon, Adam, MSc in Environmental Change & Management, Oxford University 2007-2008
Carbon stocks of the high elevation Andes Mountains: Puna grasslands and upper tropical cloud forests of Manu National Park, Peru

Awarded Distinction and Best Overall Performance, ECM 2007-2008 (Coursework, Dissertation and Exams)

• MacDonald, Ewan, MSc in Environmental Change & Management, Oxford University 2007-2008

Evaluating measures of conservation success: The case study of Nantu Nature Reserve, Sulawesi

Awarded Distinction

• Tan, Su-Yin, MSc in Environmental Change & Management, Oxford University 2007-2008

Modelling nitrogen uptake in temperate and tropical forests

Awarded Best Presentation, Dissertation Proposal

Graduated 2007

• Blandford, Rebecca, MSc in Environmental Change & Management, Oxford University 2006-2007

An investigation of the temporal dynamics of self-organised vegetation patterns in a semi-arid ecosystem

Awarded Distinction and Best Overall Dissertation, ECM 2006-2007

PROFESSIONAL EXPERIENCE

• **Scientist** (2010 – current)

NASA Jet Propulsion Laboratory (JPL), California Institute of Technology (CalTech); Associate Project Scientist, Joint Institute for Regional Earth System Science and Engineering (JIFRESSE), University of California, Los Angeles (UCLA).

• **Departmental Lecturer & Research Fellow** (2008 – 2009)

University of Oxford, Environmental Change Institute, School of Geography & Environment

• **GIS Consultant** (2003 – 2005)

*NASA Ames Research Center, Office of Safety, Environmental and Mission Assurance
San Jose State University, Department of Environmental Studies*

• **Environmental Protection Specialist** (2003)

NASA Ames Research Center, Office of Safety, Environmental and Mission Assurance

• **Environmental Protection Specialist** (2001 – 2002)

United States Environmental Protection Agency (US EPA), Region 9: Air Division

RELEVANT SKILLS

- Geographic Information Systems (ArcGIS; AutoCAD); Photogrammetry and Remote Sensing (PCI Geomatica; IDRISI; Erdas Imagine; ImageJ)
- Ecosystem and Global Modeling (MATLAB; Simile, STELLA; Fortran)
- Statistical, Spatial, and Time Series Analysis (SPLUS; SAS; JMP; StatView; CrimeStat)
- Ecology: Plant Physiology, Ecosystem, Population and Community
- Biometeorology; Biodiversity; Biology; Forest and Terrestrial Hydrology
- Stable Isotope Methods and Mass Spectrometry; Civil & Env. Engineering
- Environmental Economics; Forest Management and Economics
- Linear Algebra & Differential Equations; Analytic Geometry & Calculus; Physics
- Chemistry: General, Organic, and Atmospheric
- Sociology; Environmental Justice; Social Science Research Methods
- Intermediate Spanish; Elementary Mandarin Chinese
- Adobe Photoshop, Illustrator, Premiere; iMovie, iWeb, GarageBand; html, web design/development

REFERENCES

• **Dr. David Schimel, Senior Carbon Cycle Scientist**

Jet Propulsion Laboratory, M/S 233-306C
4800 Oak Grove Drive
Pasadena, CA 91109, USA
E-mail: david.schimel@jpl.nasa.gov
Phone: (818) 354-6803

• **Professor Yadvinder S. Malhi, Program Leader of Ecosystem Dynamics**

University of Oxford
Environmental Change Institute, School of Geography & Environment
South Parks Road, Oxford, OX1 3QY, UK
E-mail: yadvinder.malhi@ouce.ox.ac.uk
Phone: +44 (0) 1865 285188

• **Professor Dennis D. Baldocchi, Division Chair of Ecosystem Science**

University of California at Berkeley
Department of Environmental Science, Policy & Management
137 Mulford Hall #3114
Berkeley, CA 94720, USA
E-mail: baldocchi@nature.berkeley.edu
Phone: (510) 642-2874

• **Dr. Sassan S. Saatchi**

Jet Propulsion Laboratory, M/S 300-319
4800 Oak Grove Drive
Pasadena, CA 91109, USA
E-mail: sasan.s.saatchi@jpl.nasa.gov
Phone: (818) 394-1051

• **Dr. Kevin Bowman**

Jet Propulsion Laboratory, M/S 300-329
4800 Oak Grove Drive
Pasadena, CA 91109, USA
E-mail: kevin.w.bowman@jpl.nasa.gov
Phone: (818) 354-2995

• **Dr. Duane Waliser, Chief Scientist of Earth Science & Technology Directorate**

Jet Propulsion Laboratory, M/S 301-320
4800 Oak Grove Drive
Pasadena, CA 91109, USA
E-mail: duane.e.waliser@jpl.nasa.gov

Phone: (818) 353-4094

• **Professor Louise P. Fortmann, Division Chair of Society & Environment**

University of California at Berkeley

Department of Environmental Science, Policy & Management

121 Giannini Hall

Berkeley, CA 94720, USA

E-mail: fortmann@nature.berkeley.edu

Phone: (510) 642-7018