Personal information

Name: Xingjie Lu Sex: Male
Date of Birth: May 17, 1984
Telephone: +14055466563
Affiliate: Center for Ecosystem Science and Society, Northern Arizona University, Flagstaff, 86001 AZ, United States Position: Postdoctoral Research Fellow
Email: Xingjie.lu@nau.edu

Education

Beijing Normal University, Beijing, China Ph.D. 2010 - 2013
College of Global Change and Earth System Science

Courses: Data Assimilation, Data Processing and Visualization of Earth System Model

Thesis: A Model-based study of the impact of plant trait variations on global terrestrial carbon flux and geographical distribution of different plant functional types

Beijing Normal University, Beijing, China M.S. 2008 - 2010
School of Geography

Courses: Remote Sensing, Atmospheric Physics

Beijing Normal University, Beijing, China B.S. 2004 - 2008
Department of Physics

Research Interest

Global carbon cycle; Model uncertainty analysis and data assimilation; Global Biogeographic; Plant traits;

Experience

Center for Ecosystem Science and Society, Northern Arizona University, Flagstaff, 86001 AZ, United States August 2017 – Now
Position: Postdoctoral Research Fellowship – Ecosystem response to global change

Department of Microbiology and Plant Biology, University of Oklahoma, Oklahoma, United States: January 2017 – August 2017
Position: Postdoctoral Research Fellowship – Ecosystem response to global change

Commonwealth Scientific Industrial Research Organization, Ocean and Atmosphere Flagship, Australia: December 2013 – November 2016
Position: CSIRO Office of the Chief Executive Postdoctoral fellowship - Nutrient limitation on carbon-climate feedback in an earth system model and the implications for CO2 mitigation

Department of Microbiology and Plant Biology, University of Oklahoma, Oklahoma, United States: June 2015– September 2015; May 2016 - August 2016; September 2016 -November 2016
Position: Visiting scientist

Commonwealth Scientific Industrial Research Organization, Ocean and Atmosphere Flagship, Australia: November 2011– March 2013
Position: Joint training student – Incorporation of measurement plant traits into global land surface model and carbon flux estimation,

Publication

Lu, Xingjie, Ying-Ping Wang, Tilo Ziehn, Yongjiu Dai (2013), An efficient method for global parameter sensitivity analysis and its applications to the Australian community land surface model (CABLE), *Agricultural and Forest Meteorology*, **182–183,** 292– 303

Lu, Xingjie, Ying-Ping Wang, Ian J. Wright, Yongjiu Dai (2017), Incorporation of plant traits in a land surface model helps explain the global biogeographical distribution of major forest functional types, *Global Ecology and Biogeography*, **26**

Wang, Ying-Ping, **Xingjie Lu**, Ian J. Wright, Yongjiu Dai, Peter J. Rayner, and P. B. Reich (2012), Correlations among leaf traits provide a significant constraint on the estimate of global gross primary production, *Geophys. Res. Lett*., **39**, L19405, doi:10.1029/2012GL053461.

Reich, Peter. B., Roy L. Rich, **Xingjie Lu**, Ying-Ping Wang, Jacek Oleksyn (2014), Biogeographic variation in evergreen conifer needle longevity and impacts on boreal forest carbon cycle projections. *Proceedings of the National Academy of Sciences*. **111**(38), 13703-13708.

Yongqiang Zhang, Jorge L. Peña Arancibia, Tim R. McVicar, Francis H.S. Chiew, Jai Vaze, Changming Liu, **Xingjie Lu**, Hongxing Zheng, Yingping Wang, Yi Y. Liu, Diego G. Miralles, Ming Pan (2016), Multi-decadal trends in global terrestrial evapotranspiration and its components, *Scientific reports*, **6**

Zhang, Xuanze, Peter J. Rayner, Ying-Ping Wang, Jeremy D. Silver, **Xingjie Lu**, Bernard Pak, Xiaogu Zheng (2016), Linear and nonlinear effects of dominant drivers on the trends in global and regional land carbon uptake: 1959 to 2013. *Geophysical Research Letters.* **43**

Luo, Yiqi., Zheng Shi, **Xingjie Lu**, Jianyang Xia, Junyi Liang, Jiang Jiang, Ying Wang, Mattew J. Smith, Lifen Jiang, Anders Ahlström, Benito Chen, Oleksandra Hararuk, Alan Hastings, Forrest Hoffman, Belinda Medlyn, Shuli Niu, Martin

Rasmussen, Katherine Todd-Brown, and Ying-Ping Wang. (2017): Transient dynamics of terrestrial carbon storage: mathematical foundation and its applications, *Biogeosciences*, **14**

Li, Jianduo, Ying-Ping Wang, Qingyun Duan, **Xingjie Lu**, Bernard Pak (2016), Quantification and attribution of errors in the simulated annual gross primary production and latent heat fluxes by two global land surface models. *Journal of Advances in Modeling Earth Systems*, **8**

Ryan, Edmund, Kiona Ogle, Drew Peltier, Anthony P. Walker, Martin G. De Kauwe, Belinda E. Medlyn, David G. Williams, William Parton, Shinichi Asao, Bertrand Guenet, Anna Harper, **Xingjie Lu**, Kristina A. Luus, Christian Werner, Jianyang Xia, Sönke Zaehle, Elise Pendall (2017), Gross primary production responses to warming, elevated CO_2, and irrigation: quantifying the drivers of ecosystem physiology in a semiarid grassland. *Global Change Biol*ogy, **23**: 3092–3106. doi:10.1111/gcb.13602

Martin G. De Kauwe, Belinda E. Medlyn, Anthony P. Walker, Sönke Zaehle, Shinichi Asao, Bertrand Guenet, Anna Harper, Anna B. Harper, Thomas Hickler, Atul K. Jain, Yiqi Luo, **Xingjie Lu**, Kristina Luus, William J. Parton, Shijie Shu, Ying-Ping Wang, Christian Werner, Jianyang Xia, Elise Pendall, Jack A. Morgan, Edmund M. Ryan, Yolima Carrillo, Feike A. Dijkstra, Tamara J. Zelikova, Richard J. Norby. (2017). Challenging terrestrial biosphere models with data from the long-term multifactor Prairie Heating and CO_2 Enrichment experiment. *Global Change Biol*ogy. doi:10.1111/gcb.13643

Katrin Fleischer, Han Dolman, Michiel van der Molen, Karin Rebel, Jan Willem Erisman, Martin Wassen, Bernard Pak, **Xingjie Lu**, Ying-Ping Wang, N deposition exerts strong control on terrestrial C sequestration in 21st century - regionally mediated by P limitations. In submission

Lu Xingjie, Yiqi Luo, Ying-Ping Wang, Zheng Shi, Lifen Jiang, Junyi Liang, Will Wider, Traceability analysis of transient dynamics of terrestrial carbon storage projected by carbon-only and coupled carbon-nitrogen versions of global land model under three global change scenarios. In preparation.

Lu Xingjie, Yiqi Luo, Ying-Ping Wang, Ecosystem carbon mean age and transit time in response to change in radiative forcing and CO_2 fertilisation. In preparation.

Longhui Li, Ying-Ping Wang, Hao Shi, Shilong Piao, Alfredo Huete, Lei Cheng, Jason Beringer, **Xingjie Lu**, James Cleverly, Yongqiang Zhang, Lu Zhang, Qiang Yu, Derek Eamus, Contrasting sensitivities of unforested and forested ecosystems to rainfall due to canopy response in Australia. In preparation.

Walker, Anthony P., Martin G. De Kauwe, Belinda E. Medlyn, Sönke Zaehle, Colleen

Iversen, Shinichi Asao, Bertrand Guenet, Paul J. Hanson, Anna Harper, Thomas Hickler, Bruce Hungate, Atul Jain, Yiqi Luo, **Xingjie Lu**, Meng Lu, Kristina Luus14, Heather McCarthy, Patrick Megonigal, Ram Oren, William J. Parton, Shijie Shu, Alan Talhelm, Ying-Ping Wang, Jeffrey M. Warren, Christian Werner, Jianyang Xia, Don Zak, Richard J. Norby. A decade of CO_2 enrichment increases biomass carbon in multiple forests. In submission

Jianyang Xia, Anthony P. Walker, Richard J. Norby, Martin De Kauwe, Belinda Medlyn, Söenke Zaehle, Ying-ping Wang, Bertrand Guenet, Colleen M. Iversen, Anna B. Harper, **Xingjie Lu**, Kristina Luus, Christian Werner, Bruce Hungate, Junyi Liang, Lifen Jiang, Meng Lu, Patrick Megonigal, Jack A. Morgan, Robert S. Nowak, Ram Oren, Elise Pendall, Zheng Shi, Alan Talhelm, Jeffrey M. Warren, Ensheng Weng, Liming Yan, Donald R. Zak, Yiqi Luo. Uncertainty in CO_2 effect on terrestrial carbon storage capacity halved by carbon influx and residence time. In preparation

Conference

Oral presentation: A global sensitivity analysis of biophysical parameters in CABLE, CABLE workshop, 2012, Sydney, Australia

Oral presentation: The significance of key plant traits on the global biogeography of forest types, Global change research: Coupled Natural & Human Systems, 2013, Nanjing, P.R. China

Oral presentation: Interannual variability of terrestrial carbon sink, Atmospheric Composition & Chemistry Observations & Modelling Conference incorporating the Cape Grim Annual Science Meeting 2014, Aspendale, Australia

Oral presentation: Variation of plant traits explains global distribution of forest functional types, EGU meeting 2015, Vienna, Austria

Oral presentation: What determines the sensitivities of the simulated soil carbon to warming and substrate priming in three different soil carbon models? ESA meeting 2015, Baltimore, MD, United States

Oral presentation: Matrix-based diagnosis of plant biomass response to environmental change—an example of warming response in permafrost ecosystem. CESM workshop, 2017, Boulder, CO, United States