

Resume: Xiujun Wang

Address: Earth System Science Interdisciplinary Center
5825 University Research Ct, Ste 4001
University of Maryland
College Park, MD 20740-3823

Phone: (301) 405 1532

Email: wwang@essic.umd.edu



Education:

B. Agri. S. 1984, Northwestern University of Agriculture, P.R. China.
Ph. D. Soil Biochemistry, 1994, The University of Melbourne, Melbourne, Australia.
Ph. D. Ocean Biogeochemistry, 2002, University of Tasmania, Hobart, Australia.

Research Areas:

- The carbon and nitrogen cycles in the oceans and arid land
- Ecosystem dynamics and impacts on the carbon cycle
- Interaction and feedback of physical climate system and biogeochemical processes

Professional Experience:

2010 –present: Associate research scientist, University of Maryland/ESSIC, USA
2011 –2012: Visiting professor, Beijing Normal University, China
2009 –2012: Adjunct professor, Xinjiang Inst. Ecology & Geography, CAS, China
2005 –2009: Assistant research scientist, University of Maryland/ESSIC, USA
2003 –2004: Research associate, University of Maryland/ESSIC, USA
2001 – 2002: Postdoctoral fellow, Moss Landing Marine Laboratories, USA
1998 –2001: Project researcher, University of Tasmania, Hobart, Australia
1994 - 1996: Postdoctoral fellow, University of Tasmania, Australia
1984 - 1987: Res. Assist., Xinjiang Inst. of Biology, Pedology & Desert Research, China

Grants:

- Seasonal to Decadal Variability in Oceanic pCO₂ and Air-Sea Flux of CO₂ in the Equatorial Pacific. **PI**, NASA, \$443K, 02/2005-01/2009.
- Reducing Global Carbon Cycle Uncertainties: Understanding the Tropical Ocean-Atmosphere CO₂ Fluxes. **PI**, NASA, \$650K, 07/2008-06/2012.
- Using Satellite Observations to Derive TIW induced atmospheric Feedback Effects for Climate and Ecosystem Modeling Studies. **Co-I**, NASA, \$386K, 05/2008-04/2011.
- Decadal Changes in the Equatorial Pacific Planktonic Ecosystem Structure and Functioning: Impact of Climate Conditions. **PI**, NASA, \$390K, 02/2009-01/2012.
- Soil Carbon and Nitrogen Process Studies in Arid Region. **PI**, CAS, CNY2000K, 01/09-12/12.

Professional Activities:

- Member: American Geophysical Union Asian Oceania Geosciences Society
- Reviewer:
Advances in Atmospheric Sciences; Australian Journal of Soil Research;
Deep-Sea Research Part I & Part II; Geophysical Research Letters;
Hydrobiologia; Journal of Environmental Sciences;
Journal of Geophysical Research-Ocean; Journal of Marine Systems;
Journal of Oceanography; Marine Environmental Research;
Ocean Dynamics; Ocean Modelling;
Pedosphere; Progress in Oceanography

Peer-Reviewed Publications (*corresponding author; total citation: > 600)

1. **Wang X.J.**, J.P. Wang, X. Chen, J. Zhang 2013. Cropping enhances pedogenic carbonate formation on arid cropland: a case study in northwest China. *Geophysical Research Letters*, under review.
2. Wang J.P., **Wang*, X.J.**, Zhang, J., 2013. Land use impact on soil organic and inorganic carbon and stable carbon isotopes in Yanqi Basin of Northwestern China. *Geoderma*, under review.
3. Wang J.P., **Wang*, X.J.**, Zhang, J., 2013. Evaluating loss-on-ignition for determinations of soil organic and inorganic carbon in the Yanqi Basin of Northwestern China. *Pedosphere*, in press.
4. Zhang X.B., M.G. Xu, N. Sun, **X.J. Wang**, L. Wu, B.R. Wang, D.C. Li 2013. How do environmental factors and different fertilizer strategies affect soil CO₂ emission and carbon sequestration in the upland soils of southern China? *Applied Soil Ecology*, revised.
5. Li Z.G., R.H. Zhang, **X.J. Wang**, F. Chen, C.Y. Tian, 2012. Growing season carbon dioxide exchange in flooded non-mulching and non-flooded mulching cotton. *PLoS ONE*, 7(11): e50760. doi:10.1371/journal.pone.0050760
6. **Wang, X.J.**, Wang, J.P., Zhang, J., 2012. Comparisons of three methods for organic and inorganic carbon in calcareous soils of northwest China. *PLoS ONE*, 7(8): e44334. doi:10.1371/journal.pone.0044334.
7. Cong, R.H., Xu, M.G., **Wang, X.J.**, Zhang, W.J., Yang, X.Y., Huang, S.M., Boren Wang, B.W., 2012. An analysis of soil carbon dynamics in long-term soil fertility trials in China. *Nutrient Cycling in Agroecosystems*, doi: 10.1007/s10705-012-9510-4.
8. **Wang X.J.**, R. Murtugudde, E. Hackert and E. Marañón, 2012. Phytoplankton carbon and chlorophyll distributions in the equatorial Pacific and Atlantic: A basin-scale comparative study. *Journal of Marine System*, doi:10.1016/j.jmarsys.2012.03.004.
9. Cong, R.H., **Wang*, X.J.**, Xu, M.G., Zhang, W.J., Xie, L.J., Yang, X.Y., Huang, S.M., Boren Wang, B.W., 2012. Responses of soil carbon to nitrogen ratio to long-term fertilization in the wheat-corn double cropping system of China. *European Journal of Soil Science*, doi:10.1111/j.1365-2389.2012.01448.
10. Zhang, W.J., Xu, M.G., **Wang, X.J.**, Huang, Q.H., Nie, J., Li, Z.Z., Li, S.L., Seon-Woong Hwang, Kyung – Do Lee, 2012. Effects of organic amendments on soil carbon sequestration in paddy fields of subtropical China. *Journal of Soils and Sediments*, DOI:10.1007/s11368-011-0467-8.
11. Li Z.G., **X.J. Wang**, R.H. Zhang, J. Zhang, C.Y. Tian, 2011. Contrasting diurnal variations in soil organic carbon decomposition and root respiration due to a hysteresis effect with soil temperature in a *Gossypium s.* (cotton) plantation. *Plant and Soil*, DOI 10.1007/s11104-011-0722-1.
12. Li Z.G., R.H. Zhang, **X.J. Wang**, J.P. Wang, C.P. Zhang, C.Y. Tian, 2011. Carbon dioxide fluxes and concentrations in cotton field of Northwestern China: Effects of plastic mulching and drip irrigation, *Pedosphere*, 21, 1-9.
13. Zhang, H., M. Xu, X. Shi, Z. Li, Q. Huang, and **X.J. Wang**. 2010. Rice yield, potassium uptake and apparent balance under long-term fertilization in rice-based cropping systems in southern China. *Nutrient Cycling in Agroecosystems* 88: 341-349.
14. Zhang W.J., **X.J. Wang**, M.G. Xu, S.M. Huang, H. Liu, C. Peng, 2010. Soil organic carbon dynamics under long-term fertilization in arable land of the Northern China. *Biogeosciences*, 7, 409-425.
15. **Wang X.J.** R. Murtugudde and R. Le Borgne, 2009. Nitrogen uptake and regeneration pathways in the equatorial Pacific: a basin-scale modeling study. *Biogeosciences*, 6, 2647-2660.
16. **Wang X.J.**, Le Borgne, R., Murtugudde, R., Busalacchi, A. and Behrenfeld, M.J., 2009. Spatial and temporal variability of the phytoplankton carbon to chlorophyll ratio in the equatorial Pacific: a basin scale model study. *Journal of Geophysical Research*, 114, C07008, doi:10.1029/2008JC004942.
17. **Wang X.J.**, Behrenfeld, M., Le Borgne, R., Murtugudde, R. and Boss, E., 2009. Regulation of phytoplankton carbon to chlorophyll ratio by light, nutrients and temperature in the equatorial Pacific Ocean: a basin-scale model. *Biogeosciences*, 6, 391-404.
18. Zhang Rong-Hua, A. Busalacchi, **X.J. Wang**, J. Ballabrera-Poy, R. Murtugudde, E. Hackert, and D. Chen 2009. Role of ocean biology-induced climate feedback in the modulation of ENSO. *Geophysical Research Letters*, 36, doi:10.1029/2008GL036568.
19. **Wang X.J.**, Le Borgne, R., Murtugudde, R., Busalacchi, A.J. and Behrenfeld, M., 2008. Spatial and temporal variations in dissolved and particulate organic nitrogen in the equatorial Pacific: biological and physical influences. *Biogeosciences*, 5, 1705-1721.

20. Zhang W.J., M.G. Xu, B.R. Wang, **X.J. Wang** 2008. Soil organic carbon, total nitrogen and grain yields under long-term fertilizations in the upland red soil of Southern China. *Nutrient Cycling in Agroecosystem*, doi:10.1007/s10705-008-9226-7.
21. Christian J. R., R. A. Feely, M. Ishii, R. Murtugudde, and **X.J. Wang** 2008. Testing an ocean carbon model with observed sea surface pCO₂ and dissolved inorganic carbon in the tropical Pacific Ocean, *Journal of Geophysical Research*, 113, C07047, doi:10.1029/2007JC004428.
22. **Wang X.J.**, J. R. Christian, R. Murtugudde, A. J. Busalacchi 2006. Spatial and temporal variability in new production in the equatorial Pacific during 1980-2003: physical and biogeochemical controls. *Deep-Sea Research II*, 53, 677-697.
23. **Wang X.J.**, J. R. Christian, R. Murtugudde, A. J. Busalacchi 2006. Spatial and temporal variability of the surface water pCO₂ and air-sea CO₂ flux in the equatorial Pacific during 1980-2003: a basin-scale carbon model. *Journal of Geophysical Research*, 111, doi:10.1029/2005JC002972.
24. **Wang X.J.**, R. Murtugudde, A. Busalacchi, and R. Le Borgne 2005. De-coupling of net community production and new production in the equatorial Pacific ocean: a model study, *Geophysical Research Letters*, 32, doi:10.1029/2004GL024100.
25. **Wang X.J.**, J. R. Christian, R. Murtugudde, A. J. Busalacchi 2005. Ecosystem dynamics and export production in the central and eastern equatorial Pacific: a modeling study of impact of ENSO. *Geophysical Research Letters*, 32, doi:10.1029/2004GL021538.
26. Coale K. H., R. M. Gordon and **X.J. Wang*** 2005. The distribution and behavior of the dissolved and particulate iron and zinc in the Ross Sea and Antarctic Circumpolar Current along 170°W. *Deep-Sea Research I*, 52, 295-318.
27. Coale, K.H., et al. including **X.J. Wang** 2004. Southern ocean iron enrichment experiment: Carbon cycling in high- and low-Si waters, *Science*, 304 (5669): 408-414.
28. **Wang X.J.**, R. J. Matear and T. Trull 2003. Nutrient utilization ratios in the Polar Frontal Zone in the Australian sector of the Southern Ocean: a model. *Global Biogeochemical Cycle* 17 (1), 1009, doi:10.1029/2002GB001938.
29. Coale K. H., **X.J. Wang***, S. J. Tanner and K. S. Johnson 2003. Phytoplankton growth and biological response to Fe and Zn addition in the Ross Sea and Antarctic Polar Frontal Zone along 170°W. *Deep-Sea Research II*, 50: 635-653.
30. **Wang X.J.** and R. J. Matear 2001. Modeling the upper ocean dynamics in the Subantarctic and Polar Frontal Zones in the Australian sector of the Southern Ocean. *Journal of Geophysical Research* 106: 31511-31524.
31. **Wang X.J.**, R. J. Matear and T. Trull 2001. Modeling the seasonal phosphate export and resupply in the euphotic zone in the Subantarctic and Polar Frontal Zones in the Australian sector of the Southern Ocean. *Journal of Geophysical Research* 106: 31525-31541.
32. **Wang X.J.**, P.J. Smethurst and G.K. Holz 1998. Nitrogen fluxes in surface soils of 1-2-year-old eucalypt plantations in Tasmania. *Australian Journal of Soil Research* 36:17-29.
33. **Wang X.J.**, P.J. Smethurst and A. Herbert 1996. Relationships between three measures of organic matter or carbon in soils of eucalypt plantations in Tasmania. *Australian Journal of Soil Research* 34:545-553.
34. **Wang X.J.**, P.J. Smethurst and G.K. Holz 1996. Nitrogen mineralization indices in ferrosols under eucalypt plantations of Northwestern Tasmania: association with previous land use. *Australian Journal of Soil Research* 34:925-35.
35. **Wang X.J.** and L.A. Douglas 1996. Effect of phosphoroamides on soil urease activity, and plant dry matter production and urea-N uptake by wheat plants. *Agrochimica*, 40: 209-215.
36. **Wang X.J.**, Douglas, L.A. and A.F. Patti 1995. Dry-matter production and N content of wheat plants in response to applications of nitrohumic acids. *Agrochimica*, 39(2-3): 73-77.
37. **Wang X.J.**, Z.Q. Wang and S.G. Li 1995. The effect of humic acids on the availability of phosphorous fertilizers in alkaline soils. *Soil Use and Management*, 11: 99-102.
38. Patti A.F., Verheyen T.V., Douglas L. and **X.J. Wang** 1992. Nitrohumic acids from brown coal. *Science of the Total Environment*, 113:49-65.