

RESEARCH INTERESTS

My research interests are the applications of remote sensing and GIS technologies to study biophysical regulations of carbon, water and energy fluxes, biodiversity, and vegetation dynamics at multiple spatiotemporal scales. My research interests are interdisciplinary in nature and they include landscape ecology, ecosystem ecology, biogeography, grassland ecosystems, agroecology, climate-vegetation & human-environment interactions, remote sensing, GIS, ecological climatology, global environmental change and drought, land cover/land use change, telecoupling and coupled natural and human (CNH) systems.

APPOINTMENTS

- Visiting Assistant Professor, Department of Geography, Oklahoma State University (August 2018 to present)
- Research Associate, Center for Global Change and Earth Observation, Michigan State University (August 2014 to August 2018)
- Adjunct Research Assistant Professor, Dept. of Environmental Sciences, University of Toledo (September 2013 to May 1, 2017)
- Postdoctoral Research Associate, University of Toledo (2011 to August 2014)

EDUCATION

- Ph.D., Biology (Ecology), Department of Environmental Sciences, University of Toledo (2010)
- MA Geography (Remote Sensing), Michigan State University (2005)
- MA in Geography, Osmania University, Hyderabad, India (2001)
- BA in Geography, Osmania University Hyderabad, India (1998)

IMMIGRATION

- Permanent Resident (EB1A) - United States of America
- Citizenship - India

TEACHING

- Seminar in GIS Science (GEO 874) (Spring 2018), Department of Geography, Michigan State University (co-taught with Dr. Jiquan Chen and Dr. David Reed)
- *People and Environment*, Integrative Studies in Social Science (ISS) 310 (Spring 2016), Department of Geography, Michigan State University
- *Digital Image Processing*, GEO827 (Fall 2015), Department of Geography, Michigan State University
- Teaching Assistant, Department of Environmental Sciences, University of Toledo (May 2007-Dec 2009), courses include EEES1140-*Environmental Problems* Lab (Dr. Jonathan Bossenbroek), EEES 3060-*General Ecology* Lab-multiple sections, (Dr. Daryl Moorhead), EEES 1050-995: *Geological Hazards & the Environment* (Dr. Donald Stierman).
- Teaching Assistant, Department of Geography, Michigan State University (Aug 2001- May 2002), courses include Integrative Studies Courses in the Social Sciences; ISS 330B - *Asia* (Dr. Shobha Ramanand), ISS 310-*People & Environment* (Dr. Patricia Machermer) and ISS 330C - *Latin America* (Dr. Manuel Chávez).

GUEST LECTURES

- Guest Lecturer, GEO 869 People and Environment (Spring 2016), Department of Geography, Michigan State University
- Landscape Ecology EEES 4760/5760 (Fall 2013, Spring 2012, Spring 2009), Conservation Biology EEES 5750/7750 (Spring 2012), Department of Environmental Sciences, University of Toledo

PUBLICATIONS

- 1) **John, R.**, Chen, J., Gianicco, V., Park, H., Xiao, J., Shirkey, G., Ouyang, Z., Shao, C., Laforteza, R. & Qi, J. (2018). Canopy cover and herbaceous aboveground biomass on the Mongolian Plateau: spatio-temporal estimates and controlling factors. *Remote Sensing of the Environment*, 213, 34-48, doi: 10.1016/j.rse.2018.05.002.
- 2) Gianicco, V., Chen, J., Ouyang, Z., Shao, C., **John, R.**, Laforteza, R. (2018). Contributions of landscape heterogeneity within the footprint of eddy-covariance towers to flux measurements. *Agricultural and Forest Meteorology*, 260-261, 144-153, doi: 10.1016/j.agrformet.2018.06.004.
- 3) Chu, H., Baldocchi, D.D., **John, R.**, Wolf, S., Reichstein, M. & FLUXNET Contributors (2017). Fluxes All of the Times? A Primer on the Temporal Representatives of FLUXNET. *Journal of Geophysical Research: Biogeosciences*, doi: 10.1002/2016JG003576.
- 4) Qi, J., Xin, X., **John, R.**, & Chen, J. (2017). Food and Sustainability of Agro-pastoral Ecosystems in Asian Dryland Belt. *Ecological Processes*, doi: 10.1186/s13717-017-0087-3.
- 5) Park, H., Fan, P., **John, R.**, Chen, J. (2017). Urbanization on the Mongolian Plateau after the economic reforms: changes and the causes. *Applied Geography*, 86, 118-127, <https://doi.org/10.1016/j.apgeog.2017.06.026>.
- 6) **John, R.**, Chen, J., Kim, Y., Ouyang, Z., Park, H., Xiao, J., Shao, C., Amarjargal, A., Zhang, Y., Bakshishig, O., & Qi, J. (2016). Differentiating anthropogenic modification and precipitation-driven change on vegetation productivity on the Mongolian Plateau. *Landscape Ecology*, 31, 547-566, doi: 10.1007/s10980-015-0261-x.s
- 7) Giannico, V., Laforteza, R., **John, R.**, Sanesi, G., Lucia, P., & Chen, J. (2016). Estimating stand volume and above-ground biomass of urban forests using LiDAR. *Remote Sensing*, 8, 339; doi: 10.3390/rs8040339.
- 8) Fan, Y., Chen, J., Shirkey, G., **John, R.**, Wu, S. R., Park, H., & Shao, C. (2016). Applications of structural equation modeling (SEM) in ecological studies: an updated review. *Ecological Processes*, 5:19 doi: 10.1186/s13717-016-0063-3.
- 9) Ouyang, Z., Shao, C., Chu, H., Becker, R., Bridgeman, T., Stepien, C., **John, R.**, & Chen, J. (2017). The effect of algal blooms on carbon emission in western Lake Erie: an integration of remote sensing and eddy covariance measurements. *Remote Sensing*, 9(1), 44, doi:10.3390/rs9010044.
- 10) Shao, C., Chen, J., Li, L., Dong, G., Han, J., Abraha, M., & **John, R.** (2016). Grazing effects on energy fluxes in a desert steppe on the Mongolian Plateau. *Ecological Applications*, doi: 10.1002/eap.1459.
- 11) Liu, Z., Chen, J., Qi, J., **John, R.**, Cheng, J., and Zhu, Z. (2016). The Effect of Landscape Composition on the Abundance of *Laodelphax striatellus* Fallén in Fragmented Agricultural Landscapes. *Land* (ISSN 2073-445X), doi: 10.3390/land5040036.
- 12) Fan, P., Chen, J., & **John, R.** (2016). Urbanization and environmental change during the economic transition in the Mongolian Plateau: Hohhot and Ulaanbaatar, 1990–2010. *Environment Research*, 120, 96-112. <http://dx.doi.org/10.1016/j.envres.2015.09.020>.

- 13) Shao, C., Chen, J., Stepien, C. A., Chu, H., Bridgeman, T. B., Czajkowski, K. P., Becker, R., Ouyang, Z., & **John, R.** (2015). Diurnal to annual changes in carbon, latent and sensible heat over a Laurentian Great Lake: A case study in Western Lake Erie. *Journal of Geophysical Research*, doi: 10.1002/2015JG003025.
- 14) Chen, J. **John, R.**, Shao, C., Fan, Y., Zhang, Y., Amarjargal, A., Brown, D., Qi, J., Han, J., Laforteza, R., Dong, G., & Li, L. (2015). Policy shifts influence the functional changes of the CNH systems on the Mongolian plateau. *Environmental Research letters*, doi:10.1088/1748-9326/10/8/085003.
- 15) Chen, J., **John, R.**, Zhang, Y., Shao, C., Brown, D., Batkhishig, O., Amarjargal, A., Ouyang, Z., Dong, G. & Qi, J. (2015). Divergences of Two Coupled Human and Natural Systems on the Mongolia Plateau. *Bioscience*, 65, 559-570, doi: 10.1093/biosci/biv050.
- 16) Hao, L, Sun, G., Liu, Y., Wan, J., Qin, M., Qian, H., Liu, C., **John, R.**, Fan, P., & Chen, J. (2015). Urbanization dramatically altered the water balances of a paddy field-dominated basin in Southern China. *Hydrology and Earth System Sciences*, 19, 3319-3331, doi: 10.5194/hess-19-3319-2015.
- 17) Abraha, M., Chen, J., Chu, H., Zenone, T., **John, R.**, Su, Y.J., Hamiltom, S.K., & Robertson, G.P. (2015). Evapotranspiration of annual and perennial biofuel crops in a variable climate. *Global Change Biology-Bioenergy*, doi: 10.1111/gcbb.12239.
- 18) Laforteza R., Tanentzap A.J. Elia M., **John R.**, Sanesi J., & Chen J. (2015). Prioritizing fuel management in urban interfaces threatened by wildfires. *Ecological Indicators*, doi: 10.1016/j.ecolind.2014.08.034.
- 19) Ouyang, Z., Chen, J., Becker, R., Chu, H., Xie, J., Shao, C., & **John, R.** (2014). Disentangling the confounding effects of PAR and air temperature on net ecosystem exchange in time and scale. *Ecological Complexity*, 19, 46-58, doi:10.1016/j.ecocom.2014.04.005.
- 20) Chu, H., Chen, J., Gottgens, J., Zu-tao, O., **John, R.**, & Becker, R. (2014). Net ecosystem methane and carbon dioxide exchange from a temperate freshwater marsh and a cropland. *Journal of Geophysical Research-Biogeosciences*, doi: 10.1002/2013JG002520.
- 21) Zhang, F., John, R., Zhou, G., Shao, C., & Chen, J. (2014). Estimating canopy characteristics of Inner Mongolia's grasslands from field spectrometry. *Remote Sensing*, 6, p2239. doi:10.3390/rs6032239.
- 22) Xie, J., Chen, J., Sun, Ge, Chu, H., Noormets, A., Zu-tao, O., **John, R.**, Wan, S., & Guan, W. (2014). Long term variability and environmental control of the carbon cycle in an oak-dominated temperate forest. *Forestry Ecology and Management* doi:10.1016/j.foreco.2013.10.032.
- 23) Xie, J., Sun, Ge, Chu, H.S., Liu, J., McNulty, S. G., Noormets, A., **John, R.**, Zu-tao, O., Zha, T., Li, H., Wan, S., Guan, W. & Chen, J. (2013). Long term variability in water budget and its controls in an oak-dominated temperate forest. *Hydrological Processes* doi: 10.1002/hyp.10079.
- 24) **John, R.**, Chen, J., Ouyang, Z., Xiao, J., Becker, R., Samanta, A. Ganguly, S., Yuan, W., & Batkhishig, O (2013). Vegetation response to extreme climate events on the Mongolian plateau from 2000-2010. *Environmental Research letters*, 8, 035033, doi:10.1088/1748-9326/8/3/035033.
- 25) Deal, M. W., Xu, J., **John, R.**, Zenone, T., Chen, J., Chu, H., Jasrotia, P., Kahmark, K., Bossenbroek, J., and Mayer, C. Net primary production in three bioenergy crop systems following land conversion. *Journal of Plant Ecology*, doi: 10.1093/jpe/rtt057.

- 26) **John, R.**, Chen, J., Noormets, A., Xiao, X., Xu, J., & Chen, S. (2013). Modeling gross primary production in semi-arid Inner Mongolia using MODIS imagery and eddy covariance data. *International Journal of Remote Sensing*, 34, 2829-2857.
<http://dx.doi.org/10.1080/01431161.2012.746483>.
- 27) Zhu, L., Li, H., Chen, J., **John, R.**, and Yan, M. (2012). Emergy-based sustainability assessment of Inner Mongolia. *Journal of Geographical Science*, 22, 843-858.
doi:10.1007/s11442-012-0967-5.
- 28) Xu, J., Chen, J., Brosofske, K., Li, Q., Weintraub, M., Henderson, R., Wilske, B., **John, R.**, Jensen, R., Li, H. & Shao, C (2011). Influence of Timber Harvesting Alternatives on Forest Soil Respiration and Its Biophysical Regulatory Factors over a 5-year Period in the Missouri Ozarks. *Ecosystems*, doi: 10.1007/s10021-011-9482-2.
- 29) Sun, G., Caldwell, P., Noormets, A., McNulty, S. G., Cohen, E., Moore Myers, J., Domec, J.C., Treasure, E., Mu, Q., Xiao, J., **John, R.**, & Chen, J. (2011). Upscaling key ecosystem functions across the conterminous United States by a water-centric ecosystem model. *Journal of Geophysical Research-Biogeosciences*, doi: 10.1029/2010JG001573.
- 30) Li, H., Gu, C., Liang, T., Xu, J., & **John, R.** (2010), A new perspective of ecosystem health. *Journal of Forestry Research*, 22, 127-132, doi: 10.1007/s11676-011-0138-z.
- 31) **John, R.**, Chen, J., Lu, N., & Wilske, B. (2009). Land cover/land use change in semi-arid Inner Mongolia: 1992-2004. *Environmental Research Letters* doi: 10.1088/1748-9326/4/4/045010.
- 32) Lu, N., Wilske, B., Ni, J., **John, R.**, & Chen, J. (2009) Climate Change in Inner Mongolia from 1955-2005-trends at regional, biome and local scales. *Environmental Research Letters* doi: 10.1088/1748-9326/4/4/045006.
- 33) Wilske, B., Lu, N., Wei, L., Chen, S., Zha, T., Liu, C., Xu, W., Noormets, A., Huang, J., Wei, Y., Chen, J., Zhang, Z., Ni, J., Sun, G., Guo, K., McNulty, S., **John, R.**, Han, X., Lin, G., & Chen, J. (2009). Poplar plantation alters water balance in semiarid Inner Mongolia. *Journal of Environmental Management*, Vol. issue 90, pp 2762-2770.
- 34) **John, R.**, Chen, J., Lu, N., Guo, K., Liang, C., Wei, Y., Noormets, A., Ma, K. & Han, X. (2008). Predicting plant diversity based on remote sensing products in the semiarid region of Inner Mongolia. *Remote Sensing of Environment*, Vol.112, issue 5, pp 2018-2032.
doi:10.1016/j.rse.2007.09.013.
- 35) LaCroix, J., Li, Q., Chen, J., Henderson, R., & **John, R.** (2008) Edge effects on fire spread in a disturbed Northern Wisconsin landscape. *Landscape Ecology*, Vol. 23, issue 9, pp 1081-1092. doi:10.1007/s10980-008-9265-0.
- 36) Qi, J., **John, R.** & Li, J. (2005). Rangeland information products from remotely sensed imagery in Afghanistan, *Arid Ecosystems*, Russian Academy of Sciences, Vol 11, issue 26-27, pp 80-86.

PUBLICATIONS (IN PREPARATION)

- 1) John, R., Ma, W., Chen, J., Park, H. and Hession, S. Untangling the effects of human influence on above ground biomass from background climate change on the Mongolian Plateau (in preparation).
- 2) Moore, N., John, R., Chen, J. & Qi, J. Impacts of land cover/use change on the Mongolian plateau in the last decade on surface energy budget and precipitation (in preparation).
- 3) John, R., Chen, J., Zenone, T., Xu, J., Rossini, M., Colombo, R., Deal, M.W., Govind, A., & Robertson, P. Estimation of gross primary production of GLBRC bioenergy systems using high resolution radiometry measurements (in preparation).

BOOK CHAPTERS

- 1) Chen, J., **R. John**, Ge Sun, S. McNulty, A. Noormets, J. Xiao, M. G. Turner, J. F. Franklin: Carbon fluxes and storages in forests and landscapes. In Azevedo et al. Forest Landscapes and Global Change: Challenges for Research and Management. Springer, ISBN 978-1-4939-0953-7.
- 2) Chen, J. **R. John**, G. Qiao, O. Batkhishig, W. Yuan, Y. Zhang, C. Shao, Z. Ouyan, L. Li, K. Guo, and G. Sun. 2013. State and Change of Dryland East Asia (DEA). In Chen et al., Pages 3-22. Dryland East Asia (DEA): Land Dynamics Amid Social and Climate Change. HEP and De Gruyter, 470 pp, ISBN 9783110287912 doi 10.1515/9783110287912.3.
- 3) Xiao, J., L. Zhang, J. Chen, **R. John**. 2013. Dynamics of Vegetation Productivity in Dryland East Asia from 1982 to 2010. In Chen et al. Pages 125-147, Dryland East Asia (DEA): Land Dynamics Amid Social and Climate Change. HEP and De Gruyter, 470 pp, ISBN 9783110287912, doi 10.1515/9783110287912.125.
- 4) Henebry, G.M., de Beurs, K.M., Wright, C.K., **John, R.**, Lioubimtseva, E. 2013. Dryland East Asia in Hemispheric Context. In Chen et al. Pages 23-44, Dryland East Asia (DEA): Land Dynamics Amid Social and Climate Change. HEP and De Gruyter, 470 pp., ISBN 9783110287912, doi 10.1515/9783110287912.23.

MISCELLANEOUS PUBLICATIONS (ARTWORK)

- Chen, J., Davis, K., Meyers, T.P. (2008). Ecosystem-atmosphere carbon and water cycling in the upper Great Lakes Region. Agricultural and Forest Meteorology, 148, 155-157.
- Maps of vegetation, climate, soil, land use/cover, and population generated for the Great Lakes NEON committee towards selecting instrumentation sites for recommendation to the National Science Foundation

PRESENTATIONS

- John, R.**, Chen, J., et al. (2018). Canopy cover and herbaceous aboveground biomass on the Mongolian Plateau: spatio-temporal estimates and controlling factors. Earth and Climate Science Area (ECSA) Lecture Series, National Remote Sensing Center (NRSC) – Integrated Multi Mission Ground Segment for Earth Observation Satellites (IMGEOS), Indian Space Research Organization (ISRO), Shadnagar, Telangana, India, June 25.
- John, R.**, Chen, J., Ma, W., Park, H., Hession, S. & Giannico, G. (2018). Untangling the effects of human influence on above ground biomass from precipitation driven changes on the Mongolian plateau. U.S. Association of the International Association for Landscape Ecology (US-IALE), Annual meeting, April 8-12, Chicago, IL.
- John, R.**, Gianicco, V., Chen, J., Park, H., Xiao, J., Ouyang, Z., Shirkey, G., Laforteza, R. & Qi, J. (2017). Spatio-temporal estimates of herbaceous aboveground biomass on the

- Mongolian Plateau: their climate controls and anthropogenic drivers. American Association of Geographers (AAG), Annual meeting, April 5-9, Boston, MA.
- Chen, J., **John, R.**, Allington, G., Li, F., Shao, C., Zhang, Y., Brown D.G., Qi, J., Gang, B., & Fernández-Giménez, M.E. (2017). Japan Geoscience Union Meeting, May 20, 2017, Chiba, Japan.
- Park, H., Fan, P., **John, R.**, & Chen, J. Urban sprawl, informal settlements, and inequality: Spatiotemporal patterns and drivers of Ger districts in Ulaanbaatar, Mongolia (2017). Annual meeting of US-International Association of Landscape Ecology (US-IALE), April 9-13, Baltimore.
- Chen, J., Dahlin, K., **John, R.**, Shirkey, G., Wu, S.R., Robertson, P., Hamilton, S., Cooper, L., Lusch, D., Karnieli, A., Laforteza, R., & Labini, G. S. (2017). Socioecological Carbon Production in Managed Agricultural-Forest Landscapes. Joint NACP & AmeriFlux PI Meeting, March 27-30, 2017, North Bethesda, MD, USA.
- Chen, J., Dahlin, K., **John, R.**, Shirkey, G., Wu, S.R., Robertson, P., Hamilton, S., Cooper, L., Lusch, D., and Karnieli, A., Laforteza, R., and Labini, G.S. (2017). Socioecological Carbon Production in Managed Agricultural-Forest Landscapes. Worldcover 2017 Conference, 14–16 March 2017, Rome, Italy.
- Chen, J., **John, R.**, Shao, C., Ouyang, Z., Mack, E., & Laforteza, R., and Qi, J. (2016). Asian dryland hierarchies in rapidly evolving institutional environments. The 3rd Open Science Meeting, Global Land Programme, Beijing, China, 10/27-27, 2016.
- John, R.**, Kim, Y., & Shao, C. (2015). GC11I: Climate-Vegetation Interaction and Land Cover/Land Use Change in Semi-Arid Grassland Ecosystems I, *AGU Fall 2015 Meeting*, Dec. 14–18, San Francisco, CA.
- John, R.**, Chen, J., Kim, Y., Ouyang, Z., Park, H., & Shao, C. (2015). Remote Sensing-based estimates of herbaceous aboveground biomass on the Mongolian Plateau. GC13B-1136 in GC13B: Climate-Vegetation Interaction and Land Cover/Land Use Change in Semi-Arid Grassland Ecosystems II Posters, *AGU Fall 2015 Meeting*, Dec. 14–18, San Francisco, CA.
- Shao, C., Chen, J., Li, L., **John, R.**, & Ouyang, Z. (2015). Grazing Effects on Water Use Efficiency on a Mongolian Desert Steppe. GC13B-1137 in GC13B: Climate-Vegetation Interaction and Land Cover/Land Use Change in Semi-Arid Grassland Ecosystems II Posters, *AGU Fall 2015 Meeting*, Dec. 14–18, San Francisco, CA.
- Chen, J., Ouyang, Z., **John, R.**, Henebry, G., Xie, Y., de Beurs, K., Fan, Y., Shao, C., Qi, J., Wu, J. & Li, Y. (2015). Regulations of evapotranspiration and ecosystem productivity from biophysical and human drivers in drylands Northern Eurasia. GC31B-1174 in GC31B: Environmental, Socioeconomic, and Climatic Changes in Northern Eurasia and Their Feedbacks to the Global Earth System and Society I Posters, *AGU Fall 2015 Meeting*, Dec. 14–18, San Francisco, CA.
- Chu, H., Baldochii, D. D., & **John, R.** (2015). Flux everywhere, all of the time? B24B-02 in B24B: Biosphere-Atmosphere Greenhouse Gas Fluxes in Terrestrial Ecosystems II, *AGU Fall 2015 Meeting*, Dec. 14–18, San Francisco, CA.
- John, R.**, Chen, J., Shao, C., Kim, Y., Ou-Yang, Z., Xiao, J., Park, H., et al. (2015). Differentiating between anthropogenic modification and climate change using long-term vegetation index trends adjusted for precipitation on the Mongolian plateau. Building Resilience of Mongolian Rangelands Conference, June 9-10, Blue Sky Hotel, Ulaanbaatar.

- Shao, C., Chen, J., **John, R.**, Li, L., Dong, G., & Ochirbat, B. Grazing effects on energy fluxes in a desert steppe on the Mongolian Plateau. Building Resilience of Mongolian Rangelands Conference, June 9–10, Blue Sky Hotel, Ulaanbaatar.
- Chen, J., **John, R.**, Brown, D., Shao, C., Allington, G., Zhuang, Q., Xiao, J., Xie, Y., Sun, G., Fan, P., & Qi, J. (2015). LCLUC Synthesis: Ecosystem-Society Interactions on a Changing Mongolian Plateau. Session: Theme 4: Human influence on global ecosystems, NASA Carbon Science and Ecosystems joint science workshop, April 20–24, 2015, College Park Marriott Hotel and Conference Center, Maryland.
- Fan, P., Chen, J., & **John, R.** (2015). Urban landscape and environment change during the economic transition in Mongolian Plateau: A comparative study of Hohhot and Ulaanbaatar, 1990–2010. Session: Theme 4: Human influence on global ecosystems, NASA Carbon Science and Ecosystems joint science workshop, April 20–24, 2015, College Park Marriott Hotel and Conference Center, Maryland.
- Chen, J., Ouyang, Z., **John, R.**, Dong, G., & Fan, P., (2015). Co-Evolutions of Ecosystems, Societies, and Economy in Dryland Asia. Vol. 17, EGU2015-6519-1, April 12–17, EGU General Assembly 2015, Vienna, Austria.
- John, R.**, Chen, J., Kim, Y., Ouyang, Z., Xiao, J., Shao, C., & Batkishig, O. (2014). Differentiating between Land Use and Climate-driven Change using Long-term Vegetation Index Trends adjusted for Precipitation on the Mongolian Plateau. GC31B-0474 in GC31B. Environmental, Socioeconomic, and Climatic Changes in Northern Eurasia and Their Feedbacks to the Global Earth System I Posters, *AGU Fall 2014 Meeting*, Dec. 15–19, San Francisco, CA.
- John, R.**, Chen, J., Ouyang, Z., Becker, R., Xiao, J., Samanta, A. Ganguly, S., Zhang, G., & Batkishig, O. (2013). Long term trends in GPP and ET on the Mongolian Plateau in context of climate and land cover/land use change. GC21D-0877 in GC21D. Environmental, Socio-Economic and Climatic Changes in Northern Eurasia and their Feedbacks to the Global Earth System I Posters, *AGU Fall 2013 Meeting*, Dec. 9–13, San Francisco, CA.
- Abraha, M., Chen, J., Chu, H., Hamilton, S.K., Zenone, T., **John, R.**, Su, Y.J., & Robertson, G.P. (2013). Response of soil respiration to climate across biofuel crops and land use histories. B21A-0462 in B21A. Biosphere-Atmosphere Greenhouse Gas Fluxes in Terrestrial Ecosystems IV Posters, *AGU Fall 2013 Meeting*, Dec. 9–13, San Francisco, CA.
- Su, Y.J., Chen, J., Shao, C., Shen, W., Zenone, T., **John, R.**, Deal, M., Hamilton, S.K., & Robertson, G.P. (2013). Response of soil respiration to climate across biofuel crops and land use histories. B21A-0478 in B21A. Biosphere-Atmosphere Greenhouse Gas Fluxes in Terrestrial Ecosystems IV Posters, *AGU Fall 2013 Meeting*, Dec. 9–13, San Francisco, CA.
- John, R.**, Chen, J., Zutao, O., Batkishig, O., Samanta, A. Ganguly, S., Yuan, W., & Xiao, J. (2012). Vegetation response to extreme climate events on the Mongolian plateau from 2000–2010. GC31A-0978. Environmental, Socioeconomic, and Climatic Change in Northern Eurasia and Their Feedbacks to the Global Earth System III posters, *AGU Fall 2012 Meeting*, Dec. 3–7, San Francisco, CA.
- Chu, H., Chen, J., Zutao, O., Deal, M., **John, R.**, & Gottgens, J. (2012). CO₂ and H₂O fluxes in different ecosystems altered uniquely by similar climatic extremes. B41B-0282. Impacts of Extreme Climate Events and Disturbances on Carbon Dynamics Posters III, *AGU Fall 2012 Meeting*, Dec. 3–7, San Francisco, CA.
- Chen, J., Zutao, O., **John, R.**, Chu, H., Zenone, T., Deal, M., & Gottgens, J. (2012). Climatic Extremes Significantly Alter Carbon Fluxes in Time and Space. B34A-03. Impacts of

- Extreme Climate Events and Disturbances on Carbon Dynamics II, *AGU Fall 2012 Meeting*, Dec. 3–7, San Francisco, CA.
- John, R.**, Chen, J., Noormets, A., & Xu, J. (2011). Modeling GPP in Semi-arid Inner Mongolia using MODIS Imagery and Tower-based Fluxes. *Eos Trans. AGU*, 87 (52), *Fall Meet. Suppl.*, Abstract GC41C -0830, Regional Climate Impacts 7: Environmental, Socioeconomic, and Climatic Changes in Northern Eurasia and Their Feedbacks to the Global Earth System—The Role of Remote Sensing and Integrative Studies I Posters, *AGU Fall 2012 Meeting*, Dec. 5–9, San Francisco, CA.
- John, R.**, Chen, J., Noormets, A., Xiao, X., Xu, J., & Chen, S. (2011). Modeling gross primary production in semi-arid Inner Mongolia using MODIS imagery and eddy covariance data, *2011 NASA CC&E Joint Science Workshop*, October 3–7 Alexandria, VA.
- Chen, J., **John, R.**, Lu, N., Sun, G., Shao, C., Mu, Q., Zhang, M., Yuan, W., & Li, L., (2011). Climatic Change and Its Consequences on Gross Primary Production, Evapotranspiration, and Water Use Efficiency on Mongolia Plateau. *2011 NASA CC&E Joint Science Workshop*, October 3–7, Alexandria, VA.
- John, R.**, Chen, J., Zenone, T., Xu, J., Rossini, M., Colombo, R., Deal, M.W., Govind, A., Robertson, P. (2011). Estimation of gross primary production of GLBRC bioenergy systems using high resolution radiometry measurements. *Great Lakes Bioenergy Research Center 5th Annual Science Retreat*, May 17–19, South Bend, IN.
- John, R.**, Chen, J., Noormets, A., Xiao, X., Xu, J., & Chen, S. (2011). Modeling gross primary production in semi-arid Inner Mongolia using MODIS imagery and eddy covariance data, *NASA land-cover and land-use change science meeting*, March 28–30, Adelphi, MD.
- Chen, J., **John, R.**, *et al.*, (2010). Predicting Regional Plant Diversity and Ecosystem Productions of Carbon & Water from distance. *The Third International Conference on Drylands, Deserts and Desertification: The Route to Restoration*, November 8–11, Ben Gurion, University of the Negev.
- Chen, J., **John, R.**, Lu, N., Sun, Ge, Shao, C., Li, L., Wan, S., Guo, K., Mu, Q., Zhang, M., & Xie, J. (2010). Climatic Change and Its Consequences on Gross Primary Production, Evapotranspiration, and Water Use Efficiency on Mongolia Plateau. *IUFRO landscape Ecology Working Group International Conference*, September 21–27 September, Bragança, Portugal.
- Wilske, B., Deal, M., Lu, N., DeForest, J. L., Li, Q., Noormets, A., Cohen, E., Sun, G., John, R., & Chen, J. (2010). Climate sensitivity of soil respiration relative to minor topography in an oak forest, Ohio. *ESA Annual meeting*, August 16, Pittsburg, PA.
- Chen, J., **John, R.**, Lu, N., Wilske, B., Shao, C., Li, L., & Zhen, L. (2009). Changes of Ecosystems and Societies on the Mongolian Plateau: Coupled Regulations of Land Use and Changing Climate. *Eos Trans. AGU*, 90(52), *Fall Meet. Suppl.*, Abstract GC43B-04, Northern Eurasia Earth Science Partnership Initiative (NEESPI) session, Dec 14–18, 2009, San Francisco.
- Chen, J., **John, R.**, Lu, N., Wilske, B., Shao, C., Sun, G., Ojima, D., Xiao, X. et al. (2009). Key lessons on Water, Carbon, & Energy Fluxes for the Semiarid Landscapes of Inner Mongolia. *Joint NASA Land-Cover and Land-Use Change Science Team Meeting and GOF-C-GOLD/NERIN, NEESPI, MAIRS Workshop Monitoring land cover, land use and fire in agricultural and semi-arid regions of Northern Eurasia*, Sept. 15–20, Almaty, Kazakhstan.
- John, R.**, Lu, N., Chen, J., Ni, J. & Wilske, B. (2008). Effects of land use change on inter-annual water fluxes in the semi-arid Inner Mongolia. Poster presentation, *2008 NASA Carbon Cycle*

and Ecosystems Joint Science Workshop, April 28–May 2, University of Maryland, College Park.

- Lu, N., **John, R.**, Wilske, B., Ni, J. & Chen, J. (2008). Impacts of land cover and vegetation heterogeneity on the spatial variability of surface soil moisture at the regional scale. Poster presentation, *2008 NASA Carbon Cycle and Ecosystems Joint Science Workshop*, April 28–May 2, University of Maryland, College Park.
- Wilske, B., Lu, N., **John, R.** & Chen, J. (2008) Lessons learned from the “Effects of Land Use Change (LUC) on the Energy and Water Balance of the Semi-Arid Region of Inner Mongolia, China”. Poster presentation, *2008 NASA Carbon Cycle and Ecosystems Joint Science Workshop*, April 28–May 2, University of Maryland, College Park.
- John, R.**, Lu, N., Chen, J., & Wilske, B. (2008). Effects of land use change on inter-annual water fluxes in semi-arid Inner Mongolia. Poster presentation, *Landscape Patterns and Ecosystem Processes-2008 US-IALE Symposium*, April 6–10, Madison, Wisconsin.
- Lu, N., **John, R.**, Wilske, B., Ni, J. & Chen, J. (2008). Predicting land surface properties based on land cover heterogeneity at the regional scale: a case study in the semiarid Inner Mongolia. Poster presentation, *Landscape Patterns and Ecosystem Processes-2008 US-IALE Symposium*, April 6–10, 2008, Madison, Wisconsin.
- John, R.**, Lu, N., & Chen, J. (2006). Effects of land use change on water use fluxes in the semi-arid region of Inner Mongolia. *Eos Trans. AGU, 87 (52), Fall Meet. Suppl., Abstract GC23A-1339*, Northern Eurasia Earth Science Partnership Initiative (NEESPI) session, Dec 11–15, 2006, San Francisco
- John, R.**, Chen, J., Lu, N., Guo, K., Liang, C., Wei, Y. & Noormets, A. (2006) Predicting plant diversity based on remote sensing products in the semiarid region of Inner Mongolia. *NEESPI Regional Focus Research Center for Dry Land Processes Studies workshop*, Institute of Geographic Science and Natural Resources Research, CAS, Beijing, China, November 7–8, 2006
- Qi, J., **John, R.**, Wangwang, N. & Stevenson, J.R. (2005) Land use/cover Dynamics and Water Quality in the Muskegon River Watershed in Michigan. *The International Conference on Poyang Lake Complex Environment System & Advanced Workshop on Watershed Modeling and Water Resources Management*, Nanchang, Jiangxi, China, June 27–30, 2005
- John, R.** & Qi, J. (2004). Rangeland information products from remotely sensed imagery in Afghanistan. *First International Workshop on the Human Dimensions of Climate and Environmental Change in Central Asia (HDCECCA)*, May 21–23, 2004, Grand Rapids, MI.
- John, R.** & Qi, J. (2004) Deriving Rangeland Information Products from Multi-scale Imagery in Afghanistan, *Remote Sensing Student Group (RSSG AAG) Paper competition, Annual meeting of American Association of Geographers (AAG)* March 2004, Philadelphia, PA.
- John, R.** (2003) The Relationship between Land Use/Land Cover and Water Quality in the Muskegon River Watershed, *Annual meeting of American Association of Geographers (AAG)*, March 2003, New Orleans, LA.

FUNDED PROJECTS

- 1) *Ecosystems and Societies of Outer and Inner Mongolia: Divergent. Trajectories and Coevolution*. CNH/NSF: ICER 1315656, \$1,364,000.00 (effective 9/1/2013, 60 months). Jiquan Chen (PI), **Ranjeet John (Co-PI)**, Elizabeth Deirdre (Co-PI), University of Toledo; Yaoqi Zhang (Co-PI), Henry Kinnucan (Co-PI), Auburn University.

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- 2) NASA LCLUC-USDA: Carbon dynamics across managed landscapes, specifically: urban-rural, forested-agricultural and terrestrial-aquatic (USDA, NASA); Socioecological carbon production in managed agricultural-forest landscapes. \$975,357.00. Jiquan Chen (PI), Kyla Dahlin (Co-PI), **Ranjeet John (Co-PI)**, (01/1/2017-12/31/2019).
- 3) NASA LCLUC Synthesis: Ecosystem-Society Interactions on a Changing Mongolian Plateau (N-123980-01), \$750,000. Jiquan Chen (PI), Dan Brown (PI), collaborator **Ranjeet John** (04/1/2014-03/31/2017).
- 4) NASA LCLUC: Urbanization and Sustainability Under Global Change and Transitional Economies: Synthesis from Southeast, East and North Asia (SENA) (NNX15AD51G), \$750,000. Peilei Fan (PI), Jiquan Chen (PI), collaborator **Ranjeet John** (04/1/2014-03/31/2017).
- 5) USDA Forest Service: Evaluation of Terrestrial Condition Assessment (TCA) of Restorations for Forest Service Lands. Jiquan Chen (PI) & **Ranjeet John**. Evaluation of Terrestrial Condition Assessment (TCA) of Restorations for Forest Service Lands. \$20,000, 9/1/12-8/31/14.
- 6) NASA Land Cover/Land Use Change (LCLUC) NNH08ZDA001N: Interactive Changes of Ecosystems and Societies on the Mongolian Plateau: From Coupled Regulations of Land Use and Changing Climate to Adaptation. Jiquan Chen (PI), Ochirbat Batkhisig (CO-I) & Dechingungaa Dorjgotov (Inst. of Geography, Mongolian Academy of Sciences, Mongolia); Collaborator **Ranjeet John** (Univ. of Toledo, USA). \$750,000 (for 3 years).

PROFESSIONAL SCIENCE COMMUNITY INVOLVEMENT

- Primary Convener, session titled, “Climate-vegetation interaction and land cover/land use change in semi-arid Grassland Ecosystems (GC017), American Geophysical Union (AGU) 2015.
- Co-Convener, American Geophysical Union (AGU) 2014, NEESPI session and recruiting for Northern Eurasia Earth Science Partnership Initiative.
- Outstanding Student Paper Awards (OSPA) coordinator, AGU 2014, 2015
- Student Judge, AGU 2014, 2015

PROPOSAL REVIEWER

- Belgian Federal Science Policy Office (BELSPO), Belgian Remote Sensing Research Program: STEREO III research program, (Budget: 28.600.000 EUR) March 2014.
- Canada Foundation for Innovation (CFI): infrastructure proposal (\$100,000), January 2016.
- US Environmental Protection Agency (EPA) Science to Achieve Results (STAR) reviewer (invited)

JOURNAL REVIEWER

- Advances in Space Research (*Elsevier*) – Oct 2010, June 2014, Aug 2014, October 2014
- African Journal of Agriculture– Mar 2012
- Agricultural and Forest Meteorology – Nov 2013, Jan 2018
- Applied Vegetation Science – Sep 2011
- Atmospheres (MDPI) – Apr 2017, May 2017
- Climate (MDPI) – Aug 2016, Sep 2016
- Earth Interactions – Nov 2017
- Ecological Indicators – Dec 2016, March 2017

- Ecological Processes – Sep 2016, Nov 2016, Jul 2017, Jan 2018
- Ecology (*Blackwell*) – Jan 2009
- Ecosphere (ESA) – March 2016
- Environmental Research – Sep 2015
- Environmental Research Letters (*IOP*) – Oct 2011
- European Journal of Remote Sensing – Mar 2017
- Forests (*MDPI*) – May 2016
- Forestry – Dec 2017
- Forest Ecology and Management – Sep 2016
- Frontiers of Earth Science (*Springer*) – Mar 2012, Mar 2014
- Global Ecology and Biogeography (*Wiley*) – Jan 2012
- Global and Planetary Change (*Elsevier*) – Jan 2013
- International Journal of Remote Sensing (Taylor & Francis) – Jul 2012, Sep 2012, Jan 2013, Mar 2013, Jun 2013, Mar 2017
- International Journal of Digital Earth (Taylor & Francis) – Jun 2013
- International Journal of Applied Earth Observation and Geoinformation – Dec 2016, Mar 2018
- Journal of Environmental Informatics – Apr 2014
- Journal of Integrative Plant Biology – July 2007, Mar 2010
- Journal of Plant Ecology – Dec 2011, Sep 2015
- Journal of the American Water Resources Association – May 2007
- Journal of Environmental Management – Dec 2015, Apr 2016, Sep 2016, Nov 2017, Mar 2018
- Journal of Spatial Hydrology – June 2007
- Landscape Ecology (*Springer*) – June 2008, Feb 2014, May 2014, Jul 2014, Aug 2014, Oct 2014, Nov 2014, Feb 2015, Apr 2015, May 2015, Sep 2015, Nov 2015, Feb 2016, May 2016, July 2016a, July 2016b, Nov 2016, Jul 2017, Jan 2018a, Jan 2018b
- Land Use Policy (*Elsevier*) – Apr 2016
- Plant and Soil (*Springer*) – Feb 2010, Apr 2010, Jul 2010
- Quaternary International (*Elsevier*) – Jul 2014, Oct 2014
- Remote Sensing of Environment (*Elsevier*) – Aug 2008
- Remote Sensing (*MDPI*, ISSN 2072-4292) – Jan 2010, Mar 2010, Sep 2014, Sep 2016, Dec 2016, Mar 2017, May 2017a, May 2017b, May 2017c, Jun 2017, Oct 2017, Nov 2017a, Nov 2017b, Dec, 2017, Jan 2018, Feb 2018
- Stochastic Environmental Research and Risk Assessment – Mar 2018
- Sustainability – Feb 2016, Aug 2017, Oct 2017, Feb 2018
- Sensors (*MDPI*, ISSN: 1424-8220) – 2008, Oct 2017
- The Rangeland Journal – Feb 2016, May 2016, Sep 2016, Dec 2016
- Urban Forestry & Urban Greening – Feb 2012

HONORS AND AWARDS

- Alumni of the Month, October 2014, Department of Environmental Sciences, University of Toledo
- Outstanding Reviewer Status, October 2014, *Advances in Space Research* (Elsevier)

RANJEET JOHN

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- Department of Environmental Sciences, University of Toledo, Research/Teaching Assistantship – with Dr. Jiquan Chen, 2006-2010
- Travel Fund, Department of Environmental Sciences, University of Toledo, May 2008 (\$250)
- NASA-MSU Professional Enhancement Awards (US-IALE), February 2008 (\$500)
- Advanced Study Program (ASP), summer colloquium "Regional Biogeochemistry: Needs and Methodologies. June 3–15, 2007, National Center for Atmospheric Research (NCAR), fully supported participant (~\$2000).
- Career Development Travel Fund, Graduate Student Association, University of Toledo, December 2006 (\$175)
- EROS Emergency Response Team Tsunami Support, 2005 IRMCO (Federal) Award for Outstanding Inter-Organizational Performance and Achievement (group award).
- Bio-complexity CLIP Graduate Fellowship, June 2004 (\$6859)
- American Association of Geographers (AAG) travel grant, March 2004, Department of Geography, Michigan State University (\$300)
- Department of Geography (Center for Global Change and Earth Observation), Michigan State University Research Assistantship – with Dr. Jiaguo Qi , 2002-2004
- Department of Geography, Michigan State University, Teaching Assistantship, 2001-2002

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- American Geophysical Union (AGU), 2006 to present
- United States Regional Association of the International Association of Landscape Ecology (US-IALE), 2008
- American Association of Geographers (AAG), 2003 & 2004
AAG, Remote Sensing Student Group (RSSG AAG), 2003 & 2004

COMMUNITY SERVICE

- Judge (Dr. Mark Camp, supervisor) at 71st Annual Ohio Academy of Science Northwest Ohio District 2 Science Day, University of Toledo, March 14, 2015
- Department Representative – Graduate Student Association, University of Toledo, 2006-2007
- Summer Camp for Inner City High school students, Stranahan Arboretum, University of Toledo, 2006. (mentoring, ecological sampling, climate change presentation, Dr. Mark Camp, supervisor)
- Department Representative - Council of Graduate Students (COGS MSU), Michigan State university, 2002-03

WORKSHOPS ATTENDED

- Long Term Vegetation Index and Phenology Workshop, Tucson, AZ - Jan. 23-24, 2013
- 2011 NASA Carbon Cycle and Ecosystems Joint Science Workshop, October 3 – 7, Hilton Alexandria Mark, VA, fully supported participant.
- 2008 NASA Carbon Cycle and Ecosystems Joint Science Workshop, April 28 – May 2, University of Maryland, College Park.
- Land surface Phenology workshop, University of Wisconsin, Madison April 8, 2008

- Advanced Study Program (ASP), summer colloquium "Regional Biogeochemistry: Needs and Methodologies. June 3-15, 2007, National Center for Atmospheric Research (NCAR), fully supported participant.

OTHER PROFESSIONAL EXPERIENCE

- Research Assistant (Doctoral Student)-Landscape Ecology and Ecosystem Science (LEES) Lab, Department of Environmental Sciences, University of Toledo (Dec 05 – Dec 10).
 - Field radiometry (ASD hyper-spectral radiometer) and at the LTER plots (Corn, Wheat and Alfalfa), Kellogg's Biological Station (KBS LTER), Kalamazoo, MI as well as campus farms, Michigan State University. Specialize in Agricultural remote sensing with an emphasis in stress detection (Vegetation Indices, Water deficit Index, etc.). Measured Leaf area Index, with LiCor LAI 2000 and fPAR with Accupar LP 80 Ceptometer.
 - Eddy Covariance tower/weather station maintenance. Sampled plant moisture stress using a PMS pressure chamber at various canopy heights and carried out biometric measurements including DBH, tree height, fine roots, root cores, leaf litter, vegetation biomass sampling(wet/dry), etc. in Oak Opening metro parks, Stranahan arboretum, Toledo, Ohio and KBS LTER. Measuring water quality with Wetlabs In-Situ Spectrophotometer on Lake Erie (western basin) in tandem with eddy covariance mobile rig using a 25-foot Sportcraft center console boat.
 - Trained Graduate students in field radiometry and coordinated field sampling surveys in Inner Mongolia, P.R.C and Mongolia. Helped Advisor in proposal writing.
- Geomatics Specialist (National Land Cover Database 2001) – for Science Application International Corporation (SAIC) at the USGS Earth Resource Observation Systems, Sioux Falls, S.D. (Oct 04- Jul 05).
 - Preparation of National Land cover Dataset 2001. Used Rulequest™ Cubist, a data mining, regression tree software, to model surface reflectance and fill in masked out cloud and cloud shadow pixels.
- Research Assistant- Center of Global Change and for Earth Observation (CGCEO), Michigan State University, Fall-2002 to Summer-2004.
 - Image processing, geometric and radiometric correction, rectification of Landsat, ASTER, Hyperion, MODIS, IKONOS and Quickbird Imagery, Ortho-Rectification of Aerial Photos, ground truth surveys (Afghanistan, Michigan), Image Classification (Unsupervised, Supervised & Decision Tree using See 5), and Accuracy Assessment.

PAST PROJECTS

- Effects of Land Use Change on the Energy and Water Balance of the Semi-Arid Region of Inner Mongolia, NASA NEWS (Water Cycle) in support of NEESPI (2006-2008). University of Toledo
- Muskegon River Watershed Ecological assessment (2001-2004) (Master's thesis). Michigan State University
- Rangeland management in Afghanistan using Remote Sensing-USAID/ICARDA(2001-2004), Michigan State University

- RANGES –NASA/USDA (Rangeland management in Arizona/New Mexico) (2001-2004), Michigan State University
- Global Observation of Forest Cover (GOFC)- South East Asia (2001-2004), Michigan State University
- NSF Bio-complexity Grant for Climate Change (CLIP) in East Africa-Remote Sensing component and RAMS input (LAI, precipitation, Land Surface temp, etc. from MODIS/TRMM) (2003-2004), Michigan State University
- Project Assistant, Upper Midwest Regional Earth Science Application Center (RESAC), MSU (Supervisor – Dr Samuel Batzli, 2001-2002), Michigan State University
- Image Analyst in Remote Sensing for Tricad Design Consultants (P) Ltd, Ameerpet, Hyderabad, India (1998)

COMPUTATIONAL SKILLS

- Statistical Software R, SAS, SPSS, Splus, SYSTAT
- Image processing ERDAS Imagine 2014, PCI, ENVI, IDL, Matlab, eCognition
- GIS Software ArcGIS, Python, IDRISI
- Scientific processing MODIS Reprojection Tool (MRT), LDOPE, SEADA6.4

REFERENCES

- 1) Dr. Jiquan Chen (jqchen@msu.edu), Professor, Department of Geography, Michigan State University, and Director, Center for Global Change and Earth Observations, 1405 S. Harrison Rd, East Lansing, MI, phone (517) 884-1884, cell (419) 932-1517.
- 2) Dr. Jiaguo Qi (qi@msu.edu), NASA-MAIRS Project Scientist, Professor, Department of Geography, Michigan State University and Director, Center for Global Change and Earth Observations, 1405 S. Harrison Rd, East Lansing, MI, phone (517) 353-8736.
- 3) Dr. Pavel Groisman (Pasha.Groisman@noaa.gov), AGU Fellow, NEESPI Project Scientist (<http://neespi.org>), UCAR Project Scientist at NCDC National Climatic Data Center Federal Building, 151 Patton Avenue, Asheville, NC 28801, USA Ph.: (828) 271-4347; Fax: (828) 271-4022, Home E-mail: groismanp@bellsouth.net.
- 4) Dr. Geoffrey Henebry (Geoffrey.Henebry@sdsu.edu), Professor and Co-Director, Geospatial Sciences Center of Excellence (GSCE), South Dakota State University, 1021 Medary Ave, Wecota Hall 115, Box 506B, Brookings SD 57007, phone (605) 688-5351
- 5) Dr. Chandra Giri (cgiri@usgs.gov), Research Physical Scientist, USGS EROS, Mundt Federal Building, Sioux Falls, SD, phone (605) 594-2835, cell: (605)838-910.
- 6) Dr. Ge Sun (ge.sun@fs.fed.us), Research hydrologist and USDA professor of hydrology at North Carolina State University, Eastern Forest Environmental Threat Assessment Center (4854), USDA-Forest Service, Southern Research Station, Raleigh, NC 27606, phone (919)515-9498.
- 7) Dr. Garik Gutman (ggutman@nasa.gov), Manager, The NASA Land-Cover/Land-Use Change Program, Landsat Program Scientist (<http://lcluc.hq.nasa.gov>), Mail Suite 3B74, Room 3H70, 300 E Street, SW, Washington, DC 20546, phone: (202) 358-0276, fax: 202-358-3172.
- 8) Dr. Asko Noormets (noormets@tamu.edu), Associate Professor, Department of Ecosystem Science and Management Texas A&M University 495 Horticulture St., Room 305 College Station, TX 77843-2138. Phone (979) 862-7528.

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- 9) Dr. Xiangming Xiao (xiangming.xiao@ou.edu), Associate Director and Professor, Center for Spatial Analysis, University of Oklahoma, Stephenson Research and Technology Center, 101 David L. Boren Blvd, Norman, OK 73019-5300, phone:(405) 325-8941, Fax: (405) 325-3442.