CURRICULUM VITAE

Ming Xu

Department of Ecology, Evolution, and
Natural Resources
Rutgers University
14 College Farm Road
New Brunswick, NJ 08901

Phone: (848) 932-9211 (O)
Fax: (848) 932-8746
Email: ming.xu@rutgers.edu
Webpage:
http://crssa.rutgers.edu/people/mingxu/

EDUCATION

Ph.D. 2000, Ecology, **University of California at Berkeley**
M. S. 1990, Biometeorology/Ecology, **Beijing Forestry University, Beijing, China**
B. S. 1987, Forest Science, **Henan Agricultural University, Zhengzhou, China**

WORKING EXPERIENCE

2008 - Present, ***Associate Professor***, Department of Ecology, Evolution, and Natural Resources, Center for Remote Sensing and Spatial Analysis, **Rutgers University**.
2002 - 2008, ***Assistant Professor***, Department of Ecology, Evolution, and Natural Resources, Center for Remote Sensing and Spatial Analysis, **Rutgers University**.
2001- 2002, ***Postdoctoral Fellow***, Department of Environmental Science, Policy, and Management, **University of California, Berkeley**.
1997 - 2000, ***Graduate Assistant***, Department of Environmental Science, Policy, and Management, **University of California, Berkeley**.
1994 – 1997, ***Graduate Assistant***, School of Forestry, Michigan Technological University
1992 – 1994, ***Research Scientist***, **Agro-meteorological Research Center**, Beijing, China
1990 – 1992, ***Research Scientist***, **Beijing Academy of Agricultural Sciences**, Beijing, China

AWARDS AND HONORS

2017, Liangxi Award of Forest Science and Technology (China National Award), on "Valuation of Ecosystem Services and Assessment of Ecological Assets in Qinghai Province" (Co-**PI: Ming Xu**)

2016, Science and Technology Advancement Award, Qinghai Province, China, on "Valuation of Ecosystem Services and Assessment of Ecological Assets in Qinghai Province" (Co-**PI: Ming Xu**)

2015, Excellence paper award, selected by "Frontrunner 5000" (top 1% most cited papers published in all Chinese journals), Yang, Q., **Xu, M**., Liu, H., Wang, J., Liu, L., Chi, Y., Zheng, Y. Impact factors and uncertainties of the temperature sensitivity of soil respiration, ***Acta Ecologica Sinica***, 31(8): 2301-2311 (Corresponding author: **Ming Xu**)

2015, Outstanding Reviewer Award, ***Journal of Plant Physiology***

2014, A paper by **Xu, M.**, and Y. Qi. 2001, Soil surface CO2 efflux and its variation in a young ponderosa pine plantation in the Sierra Nevada Mountains, California. Global Change Biology 7: 667-677, was selected as the top 25 most cited articles of all time in ***Global Change Biology***.

2013, First-class Award of Science and Technology Advancement, Sichuan Province, China, on "Development and Application of Regional Forest Carbon Accounting System" (**PI: Ming Xu**)

2013, Best Paper Award, Yang, Q., **Xu, M**., Liu, H., Wang, J., Liu, L., Chi, Y., Zheng, Y. Impact factors and uncertainties of the temperature sensitivity of soil respiration, ***Acta Ecologica Sinica***, 31(8): 2301-2311 (Corresponding author: **Ming Xu**), awarded at the 9th Conference of the Ecological Society of China, Nanchang, Oct. 17-19, 2013.

1999−2000, Graduate School Fellowship, University of California at Berkeley
1998−99, Arthur H. and Karen Nelson Fellowship, University of California at Berkeley
1997−98, Research Assistantship, University of California at Berkeley
1994−97, Fellowship, Michigan Technological University
1994, Outstanding Scientific Research Achievement, Beijing Science and Technology Commission (key participant)
1983-87, Fellowship, Outstanding Student Awards, Henan Agricultural University

RESEARCH INTERESTS

Climate Change: Characterizing contemporary climate change and its spatiotemporal variations to identify the drivers and mechanisms leading to the changes in the climate system; Climate change impacts, vulnerability, and adaptation.
Global Change Ecology: Investigating the impacts of climate change on ecosystem processes and functions and understanding the physiological/ecological mechanisms for plants and animals to acclimate/adapt to future climate change.
Ecosystem Modeling: Developing process-based ecological and hydrological models to predict the impacts of climate change and human activities, such as land use change and nitrogen deposition, on ecosystem functions and dynamics; Using ecosystem models to quantify and

predict ecosystem services for sustainable ecosystem management under changing climate and human practices; Application of big-data/data-model fusion techniques to ecosystem/Earth system modeling.

RESEARCH EXPERIENCE

Sept. 2014 – Present, Develop an Integrated Biodiversity Information System for Biodiversity Management and Conservation in Qinghai Province, China (funded by Global Environment Facility (GEF), UNDP, $613,000, 2014-2017, PI)

- The goal of the project is to establish an integrated biodiversity information system to improve biodiversity conservation and ecosystem management in Qinghai Province, where many rare and endangered alpine species and ecosystems are under threat from climate change and various anthropogenic activities. I was involved in developing the overall project (e.g. writing the proposal and participating project biding), designing the structure of the information system, selecting technical standards and protocols, guiding data collection and database building, analyzing and synthesizing results for policy making, and coordinating with government agencies.
- Reviewed and analyzed the current information systems related to biodiversity in Qinghai Province, including forest inventory systems, environment and natural resources systems, grassland monitoring systems, and wetland inventory systems. Signed agreements with different agencies to share data sources and database protocols.
- A number of databases are under construction, including a live video database on monitoring large mammals, a rare and endangered species database, a biodiversity crime database, a digital library that lists many different species along with their pictures, and an ecosystem database with environmental factors, such as climate, soil, and major disturbances. Big data technologies, such as artificial intelligence and machine learning, have been used for data mining and information synthesis.
- A cell phone based wireless communication system (APP) is being developed to report, identify and add new species (text description, pictures and videos) to various databases.
- Virtual ecosystems are being developed to animate species activities and interactions with their habitats which will be mapped with species distribution data and habitat models. A web-based GIS system is being constructed to distribute all the information of the biodiversity system to end users through the internet.
- This biodiversity information system will be used to share information among nature reserves in Qinghai Province.
- A new biodiversity conservation plan will be developed at provincial level in consideration of the population size and distribution of rare-and-endangered species, functions and services of the ecosystems, future climate change, and human development.

July 2014 - Present, Establishing Payments for Watershed Services (PWS) in the Chishui River Basin in Guizhou Province, China (funded by Global Environment Facility (GEF), UNDP, $2,280,000, 2014-2018, Co-PI).

- This project aims to establishing a pilot project to practice the payments for watershed services (PWS) in the Chishui River Basin (CRB), the only main tributary of the Yangtze River has not been dammed. Long-term human activities, such as farming, logging, hunting, animal raising, and mining, have resulted in severe ecological and environmental problems in the CRB. Many efforts to restore the ecosystem functions and services in the CRB from the Chinese governments in the past decades have achieved little progress. Meanwhile, the middle- and lower-reach of the Chishui River hosts numerous liquor and beer industries which are highly dependent on the water in the river. One of the goals of the project is to promote a long-term agreement between the local communities and the liquor industries on restoring and enhancing water supply functions in the CRB. Such an agreement should be based on a full accounting of ecosystem services in the basin.
- My major role in the project is to make a technical plan for ecosystem service accounting, particular in the water sector, and further to make an action plan to restore and optimize ecosystem services through eco-compensation measures and PWS in the CRB. A number of demonstrating projects to practice the PWS are under construction, including reforestation on steep farmlands, organic farming to minimize pollutant discharges to rivers, and wetland restoration for improving water quality and biodiversity conservation. I have been working with the local institutions and governments to collect data on climate, soil, vegetation, hydrology, agriculture, forestry, biodiversity, and socioeconomic activities. I will use the data for validating and driving my process-based ecosystem services model which is spatially explicit and temporally dynamic. Spatial optimization techniques and scenario analyses will also be adopted for assisting the PWS implement in the CRB.
- I also server on the Scientific Steering Committee of the project for providing consultation to the governments, GEF-China Office, and local communities on restoring forests and wetlands, conserving biodiversity, protecting rivers and water bodies, and environmental education. In addition, I have also collaborated with my Chinese colleagues to co-direct graduate students working on the project.

Jan. 2011 - 2016, Exchanges of Greenhouse gases (GHGs) between the Atmosphere and Terrestrial Ecosystems in the Yangtze River Basin (YRB): Patterns, Processes, and Management (funded by the National Basic Research Program, Ministry of Science and Technology of China, $6,350,000, 2011-2016, Co-PI).

- The overall objectives of the project are to: 1) understand the mechanisms and processes controlling GHG (CO2, CH4, N2O, NH3, NOx) emissions in various ecosystems in the YRB; 2) examine the effects of human activities (e.g. irrigation, fertilization, land conversion, diversity of crop species and cultivars) on GHG emissions; and 3) develop process-based models to estimate GHG emissions and facilitate the management of ecosystems and the GHGs.
- As a Co-PI, I have led a sub-project on investigating the effects of land conversion and biodiversity (cultivar, species, and ecosystem levels) on GHG emissions in the YRB. I have also collaborated with the modeling group to develop an integrated watershed management model, where I have focused on modeling photosynthesis, respiration, and decomposition.
- Established 144 plots (10 × 10 m) for different types of land conversions, such as orchid to

rice paddies, rice paddies to vegetable lands/orchids, sloped farming lands to forests, shrub lands to forests, and forests to grasslands; performed in situ measurements of GHG fluxes at each plot; monitored microclimate and hydrological processes with a wireless network.

- ❖ Field measurements on plant growth and physiological parameters (photosynthesis, respiration, fluorescence, enzymes) for improving ecosystem models.
- ❖ Monitored community diversity with field plots and ecosystem diversity at landscape level with fine resolution satellite images.
- ❖ Designed and fabricated automated systems for measuring soil and stem respiration in forests to elucidate the carbon cycle in forests.
- ❖ Investigated soil microbial communities and diversity using high-throughput DNA sequencing techniques to improve our understanding on the interactions between the observed GHG fluxes and land management practices.

Jan. 2012 - 2015, Valuation of Ecosystem Services and Assessment of Ecological Assets in Qinghai Province, China (funded by Qinghai Provincial Government, $3.2 Million, Co-PI)

- ❖ The goal of the project is to use process-based models and various data sources to build a dynamic model-data fusion system for ecosystem service accounting and ecological assets assessment in Qinghai Province which is located in the north of the Tibetan Plateau with an area of about twice of Germany. I led a team focusing on developing the model-data fusion system. I was also involved in project design, field campaign, data analyses, and report writing.
- ❖ Collected socio-economic and statistical data, such as products, yields, and local market prices for agriculture, forestry, livestock, and fishery, for every county and district in the province since 1995. Built an integrated database on the products and corresponding costs, such as labor, fertilizers, pesticides, seeds, machinery, and water and electricity consumptions.
- ❖ Collected forest inventory data, including plot- and stand-based inventories, with thousands of plots measured since early 1980s.
- ❖ Collected species composition and biome data for >1000 plots in grasslands, wetlands and deserts.
- ❖ Established 327 temporary vegetation plots representing the major biomes and ecosystems in the province. Field measurements of species composition and biomass, litter production, carbon and nitrogen contents for leaf, stem, and roots, soil temperature and moisture, and soil respiration were conducted in each plot.
- ❖ More than 10000 soil cores were made in the plots for measuring soil organic and inorganic carbon contents and nutrient concentration.
- ❖ Leaf photosynthesis and dark respiration were measured on about 30 plant species to estimate the Vcmax and Jmax for parameterizing the Farquhar photosynthesis model.
- ❖ Field surveys at 14 parks and nature reserves for estimating the values of cultural services in the province.
- ❖ Improved an ecosystem model by coupling with a frozen soil model and a disturbance model.
- ❖ Using habitat models to estimate species (71 rare-and-endangered species) distribution and population density (field survey data) and further to estimate the biodiversity conservation

value of various ecosystems.

- ❖ Analyzed the co-benefits of biodiversity conservation (e.g. parks and nature reserves) and ecosystem services, such as carbon sequestration, soil protection, and water production and quality.
- ❖ Proposed strategic plans for optimizing/enhancing ecosystem services in the province under different scenarios of climate change and economic development

July 2011 –2014, Adaptation to Climate Change in Agriculture: Experiences and Lessons from China (funded by USDA, $99,000, 2011-2014, PI, with Prof. Bingru Huang as Co-PI)

- ❖ Collected data and information on traditional organic farming methods in northwestern China, such as the lithic mulch technique in Gansu Province.
- ❖ Visited local villages and communities to record local knowledge and skills on surface water collection, storage, and purification in arid and semi-arid regions in northwestern China
- ❖ Collected and processed historical climate and socioeconomic data in NW China
- ❖ Examined the adaptation measures local communities have taken to mitigate the impacts of climate change in the region in the past decades. Identified maladaptation cases in remote villages where climate and climate change information were lacking.
- ❖ Took students to visit field sites where different climate change adaptation measures have been practiced and implemented.
- ❖ After synthetic analyses of the information collected in China, a report was developed on climate change adaptation in arid and semi-arid regions.

July 2011 – June 2014, Collaborative Research: Quantifying Feedbacks Affecting High Altitude Climate Change (funded by NSF, $570,000, Co-PI, with Prof. James Miller at Rutgers as PI and Prof. Catherine Naud from Columbia University as Co-PI)

- ❖ In many mountain regions there is evidence that temperatures are changing at different rates than the global average. Three questions arise: Are temperatures in mountain regions increasing faster than the global average? Within mountain regions are warming rates dependent on elevation? And if the answers to the above are yes, why do such differences occur? Several different feedbacks can contribute, including those related to snow-albedo, atmospheric water vapor, cloud cover, and cloud properties. These feedbacks are difficult to quantify because the relationships between two climate variables are invariably interconnected with other variables as well. The scarcity of observations in high-altitude regions exacerbates this difficulty. As a Co-PI I collected and analyzed climate data in the Tibetan Plateau in addition to other activities, such as proposal development and publishing the results.
- ❖ This project combined surface-based and satellite observations with climate model simulations and a neural network analysis scheme to (1) quantify some of the principal relationships that contribute to feedbacks on temperature in high altitude regions, and (2) investigate how these relationships and feedbacks might change through the 21st century in response to increasing atmospheric greenhouse gases. The focus will be on the Tibetan Plateau and the Rocky Mountains in southwestern Colorado. The neural network analysis

calculates partial derivatives between pairs of climate variables (e.g., downward longwave radiation and cloud cover) so that the strength of the various links in a feedback loop can be determined.

- Broader impacts of this work include: (1) The neural network can be utilized in other regions to enable researchers to quantify important feedbacks in the climate system and analyze non-linear processes; (2) By combining surface-based and satellite observations, a new spatially and temporally expanded observational data base will be available to the research community; (3) A better understanding of climate change in mountain regions will benefit the public by improving management practices that affect the future of water resources, agriculture, tourism, and ecosystems in high altitude regions.

Sept. 2009 –2011, Development of the National Biodiversity Conservation and Climate Change Mitigation Strategy and Action Plan for China (funded by The EU - China Biodiversity Program (ECBP), $345,500, PI)

- The ultimate goal of the project was to integrate biodiversity and climate change into national planning processes in China. As the PI of the project, I lead more than two dozens of experts from China, EU, and North America to develop a technical report to the National Development and Reform Commission (NDRC).
- To provide specific, feasible action priorities for climate change mitigation and biodiversity conservation/sustainable utilization, in the context of the National Climate Change Plan and other related national policies.
- To provide a national guide for the improvement of related policies and regulations, as well as coordination and cooperation between the sectors relating to climate change mitigation and biodiversity conservation/sustainable utilization.
- The action plan assessed the impacts of climate change on biodiversity in China, the impacts of climate change mitigation activities on biodiversity, climate change adaptation strategies and their feasibility for biodiversity conservation, the impacts of alternative energy and earth engineering on biodiversity, and the co-benefits of biodiversity conservation. Climate change adaptation strategies, technologies, and actions were proposed by considering their costs and feasibility for biodiversity conservation. In addition, institutional improves, such as the laws, regulations, programs, and administration components relating to climate change and biodiversity, were also proposed in the action plan to ensure the proposed measures to be properly implemented.

Aug. 2010 –2013, Development and Application of Regional Forest Carbon Accounting System in Sichuan Province, China (funded by The Nature Conservancy and Sichuan Provincial Government, $425,000, PI) (This project won the "First-class Award of Science and Technology Advancement" by the Sichuan provincial government in 2013)

- The goal of the project is to quantify the annual carbon sequestrations or emissions in forest ecosystems in Sichuan Province using forest inventory data, statistical data, remote sensing data, and process-based modeling tools.
- The project also serves as a pioneering demonstration model for MRVing greenhouse gas

emissions/sequestrations in the forest sector in China.

- Traditional growth-yield models for major tree and shrub species were used for the quantification of biomass carbon based on inventory data.
- A process-based ecosystem model was developed and calibrated against measurements for quantifying CO2 fluxes and carbon stocks in various forests in the province. The process model was coupled with the growth and yield model in order to take advantage of the forest inventory data.
- A disturbance model was developed and coupled with the ecosystem model to consider the effects of land use/cover change on carbon emissions/sequestrations.
- 128 trees/shrubs were selected for measuring photosynthetic rates (A_Ci curves and light curves) and leaf, stem, and root respiration in order to parameterize the ecosystem model.
- Field samples were collected in 646 forest inventory plots for measuring leaf chemistry, litter production, and soil carbon contents.
- More than 17 million stands were used as our mapping/modeling units resulted from the stand-level forest inventory, and >7000 permanent forest plots were used to calibrate and validate the model.
- Developed new biomass equations for 15 species functional groups based on >1300 trees whose biomass including leaf, branch, stem, and root biomass was measured using the destructive method through the collaboration with the National Biomass Program.
- Analyzed the co-benefits of giant panda reserves (67) in sequestrating and conserving carbon in Sichuan Province and proposed new reserves for enhancing panda protection and ecosystem services.

Jan. 2010 –2014, Modeling climate and ecosystem interactions: Development of the next generation of coupled-climate-ecosystem models (funded by The Nature Conservancy and the Ministry of Science and Technology of China, $2,941,176, Co-PI)

- The main objective of this project is to develop a new super-computer based model by coupling climate, ocean, ecosystem, and hydrological processes for predicting climate change and its impacts at regional and global scales.
- The feedback from ecosystems (through biogeochemical cycles and radiative forcing) and human activities, such as greenhouse emissions, large-scale reforestation and deforestation, and land use/cover change, to the climate system was highlighted in the new model.
- Model assimilation and model-data fusion techniques were used in the new model to take advantage of various data sources, such as multi-platform remote sensing data, ground-based monitoring, and historical records.
- The model was used to examine the impact of climate change on ecosystem dynamics and functions from local to global scales. Adaptation measures to climate change can also be investigated with the model.
- My work has focused on developing physiology-based ecosystem models, including the responses and adaptations of key physiological/ecological processes to future climate change

Jan. 2008 – 2012, Measuring and Modeling Greenhouse Gas Emissions in China's Wetland

Ecosystems (Funded by the State Forestry Administration of China, $635,000, Co-PI)

- The overall goal of the project was to develop new techniques for measuring GHG fluxes on water surfaces and in typical wetlands; and, based on the measurements and the most recent national wetland survey, to estimate the annual GHG emissions in the wetlands in China. As a Co-PI, I was in charge of the measuring and modeling work in the Poyang Lake, the largest freshwater lake in China.
- Five typical wetlands have been selected across the country for field measurements.
- A new portable system was fabricated and tested to sample CH4, N2O, and CO2 fluxes simultaneously with a portable chamber.
- A new floating chamber system was developed to sample CH4, N2O, and CO2 fluxes simultaneously on water surfaces, such as lakes, rivers, and coastal oceans.
- Both statistic and process-based models were developed to scale the measurements to a national scale. Plant physiological parameters (e.g. Vcmax, Jmax and dark respiration) were measured from major wetland species to parameterize the process model.
- I was in charge of a sub-project in the Poyang Lake, the largest freshwater lake in China, and we found that the GHG emissions in the lake were significantly and negatively correlated with microbial diversity (high diversity in nature reserves) in the lake sediments, suggesting biodiversity conservation might reduce GHG emissions in wetlands.

July 2009 –2015, Conserving Giant Panda under Human Disturbance and Climate Change (funded by Chinese Academy of Sciences, PI) (Covered by CBS, NewScientist, and China Daily)

- Climate, hydrology, vegetation, land cover, topographical, and socioeconomic data were collected in Southwestern China for modeling giant panda habitats.
- A ground-based survey of more than 3000 plots of bamboo forests and the second national survey on the giant panda serve as the critical data sources for mapping the current giant panda habitats. Three habitat models were used for this purpose and for inter-model comparison. Human disturbances, such as land use/cover change, urbanization, road construction, and deforestation/reforestation, were also considered in the models.
- A regional climate model (RegCM3) is used for predicting future climate (21st century) in the study area with three scenarios (IPCC climate change scenarios).
- Our preliminary results showed that climate change would significantly reduce the area of high quality habitats by more than 50% and that the new habitats would move northwestwards beyond most of the current nature reserves. We also proposed new protection policies and strategies to the local and central Chinese governments for better conserving this flagship species in China, such as building a conservation network of nature reserves, protecting climate change corridors, and restoring bamboo forests in southwestern China.

2008-09, Impacts of Climate Change on the Priority Areas for Biodiversity Conservation in China (funded by The Nature Conservancy, PI)

- The main objective of this project was to examine the responses of vegetation distribution

and ecosystem functions to future climate change in the terrestrial ecosystems in China. The impacts of climate change on biodiversity and natural reserves, especially the national key protected species and ecosystems, were highlighted in this project.

- The BIOME4 model was modified to simulate the vegetation dynamics under future climate change. Physiological thresholds to extreme climates (tolerance) of key species were determined through lab-based experiments for parameterizing the model.
- Species habitat models were calibrated and validated against field survey data (presence only). The models were driven by climate, vegetation type and coverage, topography, and human disturbances.
- A regional climate model, RegCM3, was used to downscale GCM outputs for the 21st century to 25km X 25km resolution. Then, statistic techniques were used to further downscale the results to 1km X 1km scale.
- Landscape dynamics under future climate change were simulated with a spatially-explicit dynamic vegetation model and landscape features were characterized with spatial analysis tools.

2007 –09, Climate Change Vulnerability and Adaptation in the Yangtze River Basin (YRB), China (funded by World Wildlife Fund, PI) (Covered by >200 media networks, including BBC, Science Times and Xinhua News Agency)

- The project was attended by >20 scientists in this field in China and supported by experts from Europe, North America, and Australia. Multiple sectors including agriculture, forestry, grasslands, wetlands, water resources, and coastal cities were assessed based on observation data and model simulations.
- Examined the impact of and adaptation to historical climate changes of different ecosystems in the YRB.
- Identified the most vulnerable ecosystems and sectors to climate change in the basin by developing a set of sensitivity, adaptability and vulnerability indices.
- Predicted the possible response of major ecosystems to future climate change
- Proposed specific adaptation measures for each sector to deal with future climate change based on the simulations of climate models, ecosystem models, and hydrological models.

2007 – 2010, Effect of Climate Change on the Carbon Sequestration Capacity in the Natural Ecosystems in China (funded by NSFC, PI)

- Using forest inventory and ground-based survey data to estimate the current biomass carbon in various ecosystems in China
- Using the National Soil Survey data to estimate current soil carbon capacity
- Climate data in the past 50 years were obtained from the China Meteorological Administration and future climate scenarios were obtained by ensembling multiple GCM outputs.
- Remote sensing data were used to map current vegetation cover.
- Forest growth and yield models and process-based ecosystem models were used to estimate the steady state carbon stocks under current and future climate.

2005 – 2008, Development and Field Validation of Innovative Instrumentation for Measurement and Partitioning of Ecosystem Carbon Exchange Using Isotopic Fluxes of CO_2 Species (funded by NSF, $768,838, Co-PI, with Prof. Daniel Murnick at Rutgers as PI)

- Measuring total ecosystem flux alone is insufficient for ascertaining the mechanisms controlling ecosystem/atmospheric gas exchange. Partitioning contributions of distinct ecological processes in a net ecosystem exchange (NEE) is essential to basic understanding of ecosystem function and formulating environmentally sound management practices. Partitioning NEE of CO2 into two opposing processes (gross primary productivity (GPP) and ecosystem respiration) is critical to the understanding of the mechanisms behind ecosystem carbon cycling. Furthermore, respiration needs to be decomposed into its autotrophic and heterotrophic components. An ability to quantify and distinguish between GPP and ecosystem respiration is needed because environmental and physiological controls over these mechanisms differ, thereby differentially affecting ecosystem carbon cycling and its response to natural environmental variation and global climate change.
- This project has developed and validated field-capable instrumentation capable of high frequency (10 Hz) sampling of isotopic fluxes of carbon dioxide (^{12}CO2 and ^{13}CO2). Current, state-of-the-art studies of atmospheric gases, atmospheric chemistry, and global carbon cycle would greatly benefit from accurate, precise, and high-speed measurements of isotopic fluxes. This instrumentation will enable long-term measurement of net ecosystem exchange (NEE) of carbon with concurrent, real-time partitioning of NEE into its photosynthetic and respiratory components when coupled to existing high frequency eddy covariance (EC) micrometeorological techniques. Real-time partitioning of carbon flux, unfeasible using current stable isotope measurement technology, is critical for understanding the mechanisms controlling ecosystem carbon cycling. Successful development of this instrumentation would enable more accurate monitoring and forecasting of changes in atmospheric greenhouse gases, and enable the development of predictive, mechanistic models to better assess the large-scale climatic and ecological impacts of these atmospheric changes.
- Using new Laser Assisted Isotope Ratio Analysis (LARA) techniques, we have achieved an accuracy of 0.5ppmv on CO2 concentration and 0.1δ on ^{13}C/^{12}C ratio at a frequency of 1 Hz. We have extended the project by developing a new field model to couple with my automatic soil respiration system for real-time continuous measurements of isotopic (^{13}C) flux. The major role that I play in this collaborative project is to couple the LARA system with the tower-based EC system and validate the LARA partition of NEE by scaling up chamber-based measurements of respiration and photosynthesis to ecosystem level.

2004 – 2009, Historical Climate Change in China in the Past 50/100 Years (funded by Rutgers University and NSFC, PI)

- Analyzed the daily climate data from 730 weather stations over China and found: (1) South China has been cooling in the past 50 years while the overall temperature in China has increased significantly during the same period; (2) Diurnal temperature range (DTR), global solar radiation, and pan evaporation have declined dramatically; (3) The hydrological cycle in

China (except Northwest China) was not as affected by global warming as North America was, since the total precipitation amount barely increased in south China and significantly decreased in North China; and (4) The Eastern Asia (EA) monsoon has weakened, as evidenced by the significant decline of surface wind speed in the area. The decline of the EA summer monsoon might have contributed to the flooding in south China and the drought in north China as seen in recent decades.

- A regional climate model (RegCM3) was fully coupled with an ecosystem model (Biome-BGC) to estimate the human contribution, such as green-house gas, aerosol emissions, and land use change, to the observed trends in the climate signal. Air pollution, especially aerosols, may have played a critical role in shifting China's rainfall pattern in the past decades. Remote sensing and historical land use data were used to parameterize the ecosystem model.

2004 – 08, Ecosystem Carbon/Nitrogen Cycles in an Oak Forest in New Jersey Pinelands (funded by Rutgers University, PI)

- Developed a new automatic chamber system for long-term continuous measurement of soil surface CO_2 efflux. 16 pairs of chambers (30 cm in diameter and 15 cm in height) were installed at the site to sequentially measure CO_2/NOx effluxes every 2 hours. Soil moisture was controlled at 3 different levels to separate the interaction effect between soil moisture and temperature on soil CO_2 production. The trenching method was applied to separate root and soil heterotrophic/microbial respiration.
- Simultaneous measurements of CO_2, NO, and NO_2 fluxes were obtained using the same chamber system by diverting air samples to a CO_2 and a NOx analyzer respectively.
- Developed a new system for long-term continuous measurement of stem and branch respiration. 21 trees are currently measured at the site. Both systems have been patented by Rutgers University.
- Leaf level physiological measurements, such as A-Ci curves and light response curves, were periodically conducted on different species to scale up leaf level measurements to ecosystem level through process-based photosynthetic models.
- Net ecosystem exchange and energy balance at different heights were monitored by 2 towers at the site (in collaboration with the USDA Forest Service).

2004 – 07, Modeling Vegetation and Landscape Fire Dynamics in Mapping Zone 60 (New Jersey and part of Pennsylvania) (funded by the US Department of Agriculture, $195,000, PI, with Prof. Rick Lathrop at Rutgers and Dr. John Hom from USDA-FS as Co-PIs).

- We developed a cluster of 32 nodes to run the Fire-BGC model
- We also develop the software for supporting parallel computation with the cluster
- The model was modified to work with the cluster using parallel computing techniques
- Land use patterns and changes were obtained based on multi-year high-resolution remote sensing data
- Fuel load and ET simulated from the spatially-explicit process model were further used to drive a fire model

- Fire behavior and dynamics were predicted at landscape and regional scales based on climate, vegetation, topography and hydrological conditions
- Wild-fire prevention and management plans were proposed for the region based on the model simulations

2002 – 07, Modeling Ecosystem Carbon and Water Dynamics in the State of New Jersey (funded by USDA-ERS and Busch Foundation, $55,000, PI, with Prof. Rick Lathrop from Rutgers as Co-PI)

- Modified current ecosystem models (Biome-BGC and CASA models) to improve the estimation of carbon, nitrogen, and water cycles in the major ecosystems in NJ. We ran the model at a spatial resolution of 30m by 30m.
- A new sub-model was developed to estimate evapotranspiration (ET) based on stomatal controls of CO2 and water molecules at leaf level. Remote sensing data can be directly used to drive the model.
- Used historical land use/cover maps and fire maps to refine the estimation of carbon pools.
- The outputs from a regional climate model (MM5) were used to drive the ecosystem model.
- Intensive field measurements, such as tower-based flux data (eddy covariance) and plot level inventory data, were used to validate the model.

2000 – 2004, Modeling the Carbon Dynamics of the Terrestrial Ecosystems in China from 1982 to 1999 Using Remote Sensing, GIS, and Ground Measurements (funded by USDA, $245,000, Major participant)

- Examined the carbon balance of terrestrial ecosystems in China from 1982 to 1999 by comparing different ecosystem models. Remote sensing data was used to drive the models and GIS provided a platform to run the models.
- Vegetation/ecosystem types were based on a vegetation map of China published in 1982.
- Vegetation/land use changes were detected using remote sensing (AVHRR) data and calibrated using ground maps.
- Climate variables were obtained by interpolating ground weather station data (> 500 stations) and processed to 8km * 8km grids in GIS (Arc/Info).
- Soil carbon pools were estimated based on about 2000 soil profiles conducted in the 1980s. Soil profile data were spatially interpolated according to soil types and topography.
- Forest inventory data (about 25,000 plots) and field measurements of physiological and ecological processes were used to independently calibrate the models, especially for NPP.
- Developed a new method to estimate heterotrophic respiration.
- All the model components were implemented in Arc/Info AML programming.

1997 – 2002, Carbon Measurement, Modeling, and Management in a Forest Ecosystem in Northern California (Ph.D. Dissertation Project)

- Measured soil respiration, microbial biomass, soil physical and chemical properties, and fine root biomass in a young ponderosa pine plantation.
- Developed a new technique to measure stem and branch respiration easily and accurately.

- Monitored microclimates from soil to canopy.
- Measured ecosystem biomass and productivity using allometric methods.
- Examined plant phenology, litter decomposition, and the dynamics of the leaf area index (LAI).
- Developed an ecosystem carbon management model, based on the frame of MAESTRA, for ecosystem carbon management groups that are considering different potential global warming scenarios.
- Applied the ecosystem carbon management model to landscape management using remote sensing, GIS, and spatial statistics techniques.

1994 – 97, Landscape Characteristics and Microclimate in Southeastern Missouri Ozarks (funded by Missouri Department of Conservation, $525,000, Major participant)

- The main objective of my work was to examine the effects of different ecosystem management practices on landscape carbon sequestration, microclimate, and biodiversity. I measured microclimate variables, litter decomposition rates, and plant diversity from stand to landscape scales in Southeast Missouri Ozarks. Microclimate variables were measured using mobile weather stations and litter decomposition was measured using the cotton strip method.
- Mapped major microclimate variables in a forested landscape in Southeast Missouri using remote sensing (Landsat TM) and 21 mobile weather stations representing different landscape patch types. A semi-empirical model was developed to estimate air and soil temperatures in different elements of the landscape using remote sensing and GIS techniques.
- Made a 10km transect across the landscape and measured microclimate and biodiversity every 10m along the transect. I used the transect to calibrate our empirical temperature model. The transect data was also used to examine the scale effect on the relationship between microclimate and landscape structure and to test the "species richness-energy" theory at landscape scales.
- Examined the effects of different forest harvesting treatments (e.g. clear-cut, group opening, and selecting cut) on major ecological processes and functions, such as microclimate, decomposition, productivity, and biodiversity.
- Applied spatial modeling in landscape structure analysis using remote sensing and GIS techniques.
- Collaborated with foresters, climatologists, wildlife managers, soil scientists, hydrologists, and botanists.

1991 – 94, Investigating and Optimizing the Structure, Function, and Stability of a Watershed Ecosystem in Southwestern Beijing, China (funded by CMA, $294,000, Co-PI)

- Diagnosed ecosystem-degradation problems by examining nutrient cycling, energy flow, and major disturbances, detected "bottleneck" factors which limited ecosystem functions, such as productivity and energy-use efficiency, and prescribed measures to improve the structure and

function of the watershed ecosystem.

- ❖ Measured and modeled major ecological processes such as soil erosion, water production, primary productivity, secondary productivity, and nutrient (N, P, and K) cycling in agriculture, forest, and grassland ecosystems.
- ❖ Analyzed and optimized ecosystem structure and function using multiple objective programming and dynamic programming in terms of ecological and economic principles.
- ❖ Proposed a landscape/watershed optimization design by adjusting the area and proportion of woodlands, grasslands, shrublands, croplands, and wetlands to enhance the ecosystem productivity and economic outputs, especially increasing fodder production to reduce soil erosion due to overgrazing across the landscape.

1991 – 94, Measurement and Utilization of Climatic Resources in Puwa Basin, Beijing, China (funded by Beijing Municipal Government, Co-PI)

- ❖ Measured and modeled the potential climatic resources in the basin to increase land use efficiency and direct agricultural activities. The model was used to map major climatic variables in the basin, such as active accumulated temperature, solar radiation, and soil water and nutrient dynamics.
- ❖ Created microclimatic databases which were critical to agricultural and ecological zoning and natural resources management in the basin.
- ❖ Monitored extreme climatic events and natural disasters in the Puwa basin.

1990 – 93, The Effects of Elevated CO_2 Concentration in the Atmosphere on Climate, Agriculture, and Forestry in China (funded by the UNDP and the Chinese government, $231,000, Major participant)

- ❖ Estimated possible future climate changes in China due to elevated CO_2 concentration in the atmosphere by using GCM outputs.
- ❖ Conducted field experiments on winter wheat with different CO_2 concentrations by pumping CO_2 into experimentally controlled fields.
- ❖ Evaluated the potential impacts of future climate change on agriculture, forestry, and natural ecosystems in China.
- ❖ Proposed to the Chinese government a number of strategies and measures to avoid or reduce the possible negative impacts of global warming.
- ❖ Proposed possible government policies to respond to future anthropogenic climate change.

1987 - 1990, Comparing Energy and Water Balances in Five Different Ecosystems on the Loess Plateau Using Bowen-ratio and Aerodynamic Methods (MS Thesis Project)

- ❖ The major goal of the project was to examine the effects of different vegetation types (coniferous forest, deciduous forest, shrub, grass, and crop) on partitioning energy and extracting water in a semi-arid area.

- Measured solar radiation, reflectance, air temperature, and humidity gradients at different heights along a tower (up to 30m) in each ecosystem. Measured bole temperature, soil temperature, and soil moisture at different depths in the soil, and soil heat flux at surface. Monitored ecological parameters, such as leaf area index, biomass, productivity, and nutrient content in vegetation and soils at each site.
- Studied solar spectral radiation above, within, and under the canopy utilizing a spectrometer to examine the effects of vegetation type on light intensity and quality (spectral regime) within the canopies.
- Built an evapotranspiration model for each vegetation type in terms of vegetation, climate and soil variables.
- Estimated runoff with a water balance model at watershed scale.
- Examined the effects of different silviculture treatments and management practices on soil erosion and water production using the above models.

PROFESSIONAL AFFILIATIONS

- Member, American Geophysical Union
- Member, New Jersey Big Data Alliance
- Member, International Society for Computational Biology
- American Society of Plant Physiologist
- Member, American Meteorological Society
- Member, the Society of American Foresters
- Member, Ecological Society of America
- Member, Soil Science Society of America

GRANTS

- Develop Biodiversity Information System for Qinghai Province, China (funded by Global Environment Facility (GEF), UNDP, $613,000, 2014-2017, PI)
- Effects of Land Conversion on Greenhouse-gas Emissions in the Yangtze River Basin (funded by Ministry of Science and Technology of China, $6,350,000, 2011-2015, Co-PI).
- Adaptation to Climate Change in Agriculture: Experiences and Lessons from China (funded by USDA-ISE,$99,000 , 2011-2014, PI)
- Assessment and Valuation of Ecosystem Services in Qinghai Province, China (funded by Qinghai Provincial Government, $3,174,600, 2012- 2015, Co-PI)
- Quantifying Feedbacks Affecting High-Altitude Climate Change (funded by NSF, $570,000, 2010-2014, Co-PI)
- Development of National Biodiversity and Climate Change Strategy and Action Plan for China (funded by The EU - China Biodiversity Program (ECBP), $345,500, 2009-2011, PI)
- Development and Application of Regional Forest Carbon Accounting System (funded by The

Nature Conservancy and Sichuan provincial government, $425,000, 2011-2013, PI)

- ❖ Modeling climate and ecosystem interactions: Development of the next generation of integrating climate and ecosystem models (funded by The Nature Conservancy and the Ministry of Science and Technology of China, $2,941,176, 2008-2013, Co-PI)
- ❖ Climate Change Vulnerability and Adaptation in the Yangtze River Basin, China, funded by World Wildlife Fund, RMB2,000,000, 2008-2010 (PI).
- ❖ Effect of Climate Change on the Carbon Sequestration Capacity in the Natural Ecosystems in China, funded by National Science Foundation of China, RMB350,000, 2007-2010 (PI).
- ❖ Development and Field Validation of Innovative Instrumentation for Measurement and Partitioning of Ecosystem Carbon Exchange Using Isotopic Fluxes of CO_2 Species, funded by National Science Foundation, $768,838, 2005-2008 (Co-PI).
- ❖ Modeling Vegetation and Landscape Fire Dynamics in Mapping Zone60, funded by the US Department of Agriculture, $195,000, 2005-2006 (PI).
- ❖ Field Validation of Ground Penetrating Radar in Measuring Root Biomass in New Jersey Pinelands, funded by USDA, $20,800, 2006-2008 (PI).
- ❖ Effects of Land Use Change on the Energy and Water Balance of the Semi-arid Region of Inner Mongolia, funded by NASA, $605,000, 2005-2008 (Co-PI).
- ❖ Physiological Response of Indicator Species to Water Stress in NJ Pinelands, funded by NJ Pinelands Commission, 2004-06, $98,649 (PI).
- ❖ Biogenic Emissions of Nitrogen Oxides (NOx) from a Forest Ecosystem in New Jersey Pinelands, funded by Busch Foundation, $19,900, 2003-05 (PI).

SERVICES

Scientific Committees:

Aug. 2007 to present, Member of the Steering Scientific Committee, Qianyanzhou Ecological Research Station, Chinese Academy of Sciences

Aug. 2007- 2012, Director（Adjunct）, Global Carbon Project (GCP) – Beijing Office

Aug. 2007 to July 2012, Member of the Steering Scientific Committee of the GCP activity on "Regional Carbon Cycle Assessment and Processes (RECCAP)"

2007-2012, Chair, Climate Change Committee, WWF-China

Board Member of Scientific Journals:

2008-present, Journal of Plant Ecology
2014-present, Acta Geographica Sinica

***Manuscript Review*:**

I review >10 manuscripts each year for various journals, including Global Change Biology, Ecology Letters, Journal of Geophysical Research, Geophysical Research Letter, Biogeochemical Cycles, Journal of Climate, International Journal of Climate, International Journal of Remote Sensing, Agricultural and Forest Meteorology, Climatic Change, Climate Research, Landscape Ecology, Tree Physiology, and Forest Science.

Proposal Review:

I have reviewed proposals for multiple government and non-government agencies, such as USDA, NASA, DOE, EPA, NSF, NSFC, Kearney Foundation, WWF, TNC, Paulson Institute, Academy of Natural Sciences, Strategic Environmental Research and Development (SERDP), and the University of North Carolina at Chapel Hill. I also served on panels on reviewing proposals organized by different government agencies, such as NASA, DOE, and USDA.

University Services:

2002 – 2006, Admissions Committee, Graduate Program in Ecology and Evolution, Rutgers University
2005 – 09, Affirmative Action, Diversity and Equal Opportunity Committee, Cook College, Rutgers University
2005 – 08, New Brunswick Faculty Council, Rutgers University.

Conference (Workshop) Organization

Aug. 22, 2017, Symposium Co-Chair, Sustainable and Climate-Smart Land Management to Enhance Dryland Ecosystems Services, INTECOL 2017, Beijing, China
Nov. 18, 2016, Planning Committee Member, Rutgers Climate Symposium 2016: Climate Change, Ecology and Health, Livingston Campus, Rutgers University
2014, Symposium organizer with Dr. Xiaoquan Zhang of The Nature Conservancy for a Symposium on "Forest Carbon Accounting" at the UN-FCCC Climate Change Conference, June 6, 2014, Bonn, Germany
2013, Organizer, International Symposium on "Adaptation to Climate Change: Experiences and Lessons", Oct. 25, 2013, Rutgers University, New Brunswick, NJ
2013, Conference organizer with Prof. Jianping Huang of Lanzhou University for the International Conference on "Climate Change Adaptation: Challenges and Opportunities", May 23, 2013, Lanzhou, China
2011, Workshop organizer, International Workshop on "Biodiversity Conservation and Climate Change", August 2-3, 2011, Beijing, China
2009, Co-organizer (with Dr. Josep Canadell of the CSIRO Marine and Atmospheric Research, Australia and Prof. Ye Qi of Tsinghua University), The 9th Scientific Steering Committee Meeting of the Global Carbon Project (GCP), June 23-25, 2009, Beijing, China

Conference Session Moderator and Poster Judge

2016，July 13-14, Session Chair, First International Conference on Biodiversity Conservation in the Qinghai-Tibetan Plateau, Yushu, Qinghai, China
2015, Poster Judge, The 4th International Conference on Agriculture & Horticulture, July 14, Beijing, China
2010, Session Moderator, International Conference on Climate Change, July 18-20, 2010, Anqing, China
2007, Session Chair, Sino-Swiss Workshop on Land and Ecosystem Management in the Loess Plateau, Oct. 23-27, 2007, Qingyuang China
2006, Session Moderator, International Workshop on Sustainable Development and Biodiversity Conservation: Consequences of Land-Use Policy, July, 22-29, 2006, Xishuangbanna, China

CONFERENCE AND INVITATED PRESENTATIONS

- 2017, Aug. 22, Application of process-based models for ecosystem service assessment, Symposium on Sustainable and Climate-Smart Land Management to Enhance Dryland Ecosystems Services, INTECOL 2017, Beijing, China (**Keynote Speaker**)
- 2016，July 13, Climate change impacts and adaptation strategies on biodiversity in Qinghai Province, China, First International Conference on Biodiversity Conservation in the Qinghai-Tibetan Plateau, Yushu, Qinghai, China (**Invited Speaker**)
- 2016, July 4, Using Process-based Models to Estimate Ecosystem Services and Their Values in Qinghai Province, China, Hebei University of Engineering, Handan, China
- 2016, June 20, Valuation of Ecosystem Services and Accounting of Ecological Capital in Qinghai Province, China, Zhejiang University of Finance and Economics, Hangzhou, China
- 2015, Oct. 26, Plant and Microbial Responses and Acclimation to Experimental Warming in Various Ecosystems, 2nd International Symposium on Forest Soils, Fuzhou, China (**Invited Speaker**)
- 2015, July 25, Global Climate Change: The Frontier of Environmental Interpretation, Workshop on National Parks and Environmental Interpretation, Shanghai (**Invited Speaker**)
- 2015, July 24, Measuring and Modeling Forest Carbon Cycles in Sichuan Province, East China Normal University, Shanghai
- 2015, July 13, The optimal atmospheric CO2 concentration for the growth of winter wheat (Triticum aestivum), 4th International Conference on Agriculture & Horticulture, Beijing, China (**Keynote Speaker**)
- 2014, June 18, Adaptation to Climate Change: Responses of Ecosystem Patterns and Processes, Anhui Normal University
- 2014, June 6, Application of Process-based Ecosystem Models to Forest Carbon Accounting in Sichuan Province, China, UN-FCCC Climate Change Conference, Bonn, Germany.
- 2014, February 24, Ecosystem Adaptation to Climate Change: Mechanisms and Processes, Queens College, City University of New York
- 2013, May 24, Climate Change Impacts and Adaptation in Arid Ecosystems, Institute of Arid

Meteorology, China Meteorological Administration, Lanzhou, China

- 2013, May 23, Climate Change Adaptation: Challenges and Opportunities, Lanzhou University, Lanzhou, China
- 2012, Oct. 30, Plant Acclimation/Adaptation Mechanisms to Global Warming, Annual Meeting of the China Ecosystem Network Observation and Modeling, Beijing, China
- 2012, Oct. 15-16, Ecosystem-based Adaptation to Climate Change in in Western China, Workshop on Climate Change Adaptation, Beijing (**Keynote Speaker**).
- 2011, Aug. 4, Vulnerability and Adaptation of Biodiversity to Climate Change, International Workshop on Biodiversity and Climate Change, WWF-China, Beijing **(Invited Speaker).**
- 2011, Aug. 2-3, National Biodiversity Conservation and Climate Change Mitigation Strategy for China, International Symposium on Biodiversity and Climate Change, Beijing (**Keynote Speaker and Organizer**).
- 2011, July 23. Vulnerable Regions to Climate Change: Challenges and Adaptation Strategies, International Youth Summit on Energy and Climate Change, Beijing **(Keynote Speaker).**
- 2011, July 16. Carbon Accounting and Monitoring for Forest Ecosystems, Eco Forum Global Annual Conference Guiyang 2011, Guiyang, China (**Invited Speaker**).
- 2010, Dec. 11, Challenges and Opportunities for Phenology Studies Under Climate Change, Workshop on Phenology and Climate Change, Beijing (**Invited Speaker**).
- 2010, July 18-20, Adaptation Strategies to Climate Change in the Yangtze River Basin, International Conference on Climate Change, Anqing, China (**Keynote Speaker**).
- 2009, Nov. 13, Modeling Land-use Change and Forest Carbon Cycle: Applications in China, International Conference on Forest Carbon Accounting, Beijing (**Keynote Speaker).**
- 2009, Nov. 10, Climate Change Vulnerability and Adaptation in the Yangtze River Basin, Press Conference, Beijing **(Speaker on behalf of the project).**
- 2009, Aug. 3, China's Ecological Observation Network and Its Role in Regional Climate Change Adaptation, Second Interim Steering Committee Meeting, Asia Pacific Regional Climate Change Adaptation Network, Tokyo, Japan **(Invited speaker)**
- 2008, July. 21-23, Ecosystem Carbon Budget on the Tibetan Plateau: Past, Present and Future, International Conference on Biogeochemical Cycling in Grassland Ecosystems on the Tibetan Plateau, Xining, China (**Keynote Speaker**)
- 2008, Jan. 4, Modeling major ecosystem functions under climate change, The Graduate School, Chinese Academy of Sciences, Beijing
- 2007, Oct. 23-27, Modeling ecosystem processes under global climate change, Sino-Swiss Workshop on Land and Ecosystem Management in the Loess Plateau, Qingyuang China (**Session Chair**).
- 2007, Sept. 11-14, China's energy demand and the potential of bioenergy production in China's terrestrial ecosystem, US-China Workshop on Environmental Aspects of Bioenergy Production and Sustainability, Knoxville Conference Center, Knoxville, Tennessee, USA, Convened by the China-U.S. Joint Research Center for Ecosystem and Environmental Change, Sponsored by National Science Foundation, Oak Ridge National Laboratory, and the University of Tennessee, Invited by Dr. Gary Sayler, workshop chairman (**plenary address**).
- 2007, August 20-23, Synthesis of China's terrestrial ecosystem carbon cycle, 7th Meeting of

the Scientific Steering Committee of the Global Carbon Project (GCP), 20-22 August 2007, Kruger NP, South Africa.

- 2007, March 5, Challenges in Measuring Ecosystem Respiration, University of California at Riverside, Riverside, California
- 2006, Aug. 15-18, International Conference on Regional Carbon Budgets, Global Carbon Project, Beijing, China
- 2006,July 22-29, Land-use and ecosystem processes, Workshop on Sustainable Development and Biodiversity Conservation: Consequences of Land-Use Policy, Xishuangbanna, Yunnan, China (**Keynote Speaker**)
- 2005, Sept. 27, Ecosystem Response to Climate Change: Results from Field Experiments and Model Simulation, Department of Biology, Rutgers University, Newark Campus.
- 2005, Aug. 2-11, Precipitation change in China from 1960 to 2000, International Association of Meteorology and Atmospheric Sciences, Beijing, China.
- 2005, Aug. 16-18, Climate change and carbon cycle in China's terrestrial ecosystems, Association of Chinese Geographers, Beijing, China.
- 2004, Oct. 28, Climate Change in China in the Past Half Century, Department of Geography, Rutgers University, New Brunswick.
- 2004, Nov. 12, Global Warming in China: Evidences from Historical Records, Department of Environmental Science, Rutgers University.
- 2002, December 9, Climate change, vegetation, and dust storms in Northwest China: Who is to blame, humans or nature? Invited presentation at the Institute of Agroenvironment and Sustainable Development, Chinese Academy of Agricultural Sciences, Beijing, China.
- 2002, December 8, Terrestrial ecosystem response to global climate change, invited presentation at the Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China.
- 2002, May 30-June 3, Carbon balance in China's terrestrial ecosystem (1982-1998), presented at Geoinformatics 2002, Nanjing, China.
- 2002, Feb 14-15, Ecosystem Respiration: Measurement and Modeling in a Young Ponderosa Pine Plantation in Northern California, **University of Illinois at Urbana-Champaign**
- 2002, Feb 5-6, Ecosystem Carbon Dynamics: Measurement and Modeling in Northern California, **University of North Carolina, Chapel Hill**
- 2001, December 18-19, Measurement and Modeling of Ecosystem Processes for Forest Management: A Case Study in Sierra Nevada, California, **University of Toronto, Canada**
- 2001, December 10-14, Q10 and its variation in a forest ecosystem in Sierra Nevada, California, presented at America Geophysical Union annual meeting, San Francisco.
- 2001, December 3-5, Measuring and Modeling Ecosystem Processes at Multiple Scales, **University of Wyoming, Laramie**
- 2000, December 15-19, Ecosystem respiration in a young ponderosa pine plantation in northern California, presented at America Geophysical Union annual meeting, San Francisco.
- 2000, March 21-22, Topics on "Ecosystem/landscape modeling and management through integrated ecosystem measurements", **University of Wisconsin, Madison**.

- 1999, December 13-17, Soil surface CO2 efflux and its variation in a forest ecosystem in Northern California, presented at America Geophysical Union annual meeting, San Francisco.
- 1999, July 29 – August 3, Scale effects on the hierarchical relationships between landscape structure and microclimate, presented at the 5th World Congress of International Association for Landscape Ecology, Snowmass Village, Colorado, USA.

PUBLICATIONS

(Publications have been cited about 6500 times in Google Scholar database (H-index: 38) and more than 3000 times in SCI database (H-index: 30)

Peer-reviewed Journal Articles: (* indicates first author is a student or postdoc)

Publications in English (peer-reviewed)

1. *Zheng, Y., Xu, M., Sun, J., Burgess, P., Huang, B. 2017. Growth, physiological, and biochemical responses of three grass species to elevated carbon dioxide concentrations. ***Acta Physiologiae Plantarum***. (in press)
2. *Zheng, Y., Li, F., Hao, L., Shedayi, A.A., Guo, L., Ma, C., Huang, B., Xu, M. 2017. The optimal CO2 concentrations for the growth of three perennial grass species, ***BMC Plant Biology*** (in press).
3. Zeng, W., **Xu, M**., Wang, X., Cheng, Z., Yao, S. 2017. Developing individual-tree-based models for estimating aboveground biomass of five key coniferous species in China, ***Journal of Forestry Research*** (in press)
4. Wu, X., Liu, H., Fu, B., Wang, Q., Xu, M., Wang, H., Yang, F., Liu, G. 2017. Effects of land-use change and fertilization on N2O and NO fluxes, the abundance of nitrifying and denitrifying microbial communities in a hilly red soil region of southern China, ***Applied Soil Ecology*** 120: 111-120.
5. **Xu, M**., and Shang, H. 2016. Contribution of soil respiration to the global carbon equation, ***Journal of Plant Physiology*** 203: 16–28.
6. Liu H, Liu G, Li Y, Wu X, Liu D, Dai X, **Xu M**, Yang F. 2016. Effects of land use conversion and fertilization on CH4 and N2O fluxes from typical hilly red soil. ***Environ Sci Pollut Res Int.*** 23(20): 20269-20280, PMID: 27447473
7. Li, R., **Xu, M**., Powers, R., Jetz, W., Wen, H., Sheng, Q., Qui, S. 2017. Co-benefits of species conservation and climate change mitigation in giant panda habitats, ***Scientific Report*** (in press)
8. *Zhou, H., **Xu, M**., Zheng, Y., Chi, Y., Hou, R., Ouyang, Z. 2017. Thermal acclimation of photosynthesis to experimental warming is season-dependent for winter wheat (Triticum aestivum L.), ***Global Change Biology*** (in revision)
9. *Yang, Q., Zhang, W.D., Xu, M., Chi, Y., Wang, S. 2016. Thinning effect on photosynthesis depends on needle ages in a Chinese fir (Cunninghamia lanceolata) plantation, ***Science of the Total Environment*** doi.org/10.1016/j.scitotenv.2016.12.036
10. Li, R., **Xu, M**. 2016. Spatial-temporal assessment of forest biomass carbon sinks through random forests in Sichuan Province, China, ***Journal of Environmental Quality 46 (1), 64-71*** doi:10.2134/jeq2016.07.0261
11. *Liu, L., **Xu, M**., Shao, R. 2017. Timescale dependence of environmental controls on methane efflux in Poyang Lake, China, ***Biogeosciences*** 14, 2019-2032
12. *Shen, R., Xu, M., Chi, Y., Yu, S., Wan, S., He, N. 2017. Microbial membranes and enzymes not microbial community structure related to the thermal acclimation of soil

heterotrophic respiration in a temperate steppe in northern China, ***Soil Biology and Biochemistry*** (in revision)

13. *Zheng, Y., **Xu, M.** 2016. The optimal temperature for the growth of blueberry (Vaccinium corymbosum L.), ***Pakistan Journal of Botany*** 49(3): 965-979
14. *Shao, R., **Xu, M**., Liu, L. 2017. Cropping system and duration affect the nitrogen fertilization effect on CH4 emissions in rice paddies, ***Agriculture, Ecosystems and Environment*** (in press)
15. *Zhang, L., **Xu, M.**, Qiu, S., Li, R., Lai, C., Zhang, W. 2016. Improving the estimate of forest biomass carbon by combining two forest inventory systems in Sichuan Province, China, ***Scandinavian Journal of Forest Research*** DOI: 10.1080/02827581.2016.1226946
16. *Shedayi, A.A., **Xu, M.**, Naseer, I., Khan, B. 2016. Altitudinal gradients of soil and vegetation carbon and nitrogen in a high altitude nature reserve of Karakoram ranges. ***SpringerPlus***, 5:320: DOI 10.1186/s40064-016-1935-9
17. *Liu, L., Xu, M., Li, R. 2017. Modeling temporal patterns of methane effluxes using multiple regression and random forest in Poyang Lake, China, ***Wetlands Ecol Manage,*** DOI 10.1007/s11273-017-9558-7
18. *Shedayi, A. A., **Xu, M.**, Naseer, I., Sadia, S., Bano, S., Hussain, F., Elahi, I. 2017. Diversity and distribution pattern of plant species along altitudinal gradients of a high altitude park of the Karakoram mountain ranges, ***Plant Ecology & Diversity*** (in press)
19. *Shedayi A. A, Xu, M., Hussain, F., Sadia, S., Naseer, I., Bano, S. 2016. Threatened Plant Resources: Distribution and Ecosystem Services in the World's High Elevation Park of the Karakoram Ranges. ***Pak. J. Bot.***, 48(3): 999-1012
20. *Yuan, Y., Dai, X., Wang, H., **Xu, M.**, Fu, X., Yang, F. 2016. Effects of Land-Use Conversion from Double Rice Cropping to Vegetables on Methane and Nitrous Oxide Fluxes in Southern China. ***PLoS ONE*** 11(5): e0155926. doi:10.1371/journal.pone.0155926
21. *Liu, L., **Xu, M**. 2016. Microbial biomass in sediment affects greenhouse gas effluxes in the Poyang Lake in China, ***Journal of Freshwater Ecology,*** 31 (1), 109-121 DOI:10.1080/02705060.2015.1046511.
22. *Zhou, H., **Xu, M**., Pan, H., Yu, X. 2015. Leaf age effects on temperature responses of photosynthesis and respiration of an alpine oak, Quercus aquifolioides in southwestern China, ***Tree Physiology*** 35 (11): 1236-1248.
23. **Xu, M**. 2015. The optimal atmospheric CO2 concentration for the growth of winter wheat (Triticum aestivum), ***Journal of Plant Physiology*** 184: 89-97.
24. *Yuan, Y., Dai, X., **Xu, M.**, Wang, H., Fu, X., Yang, F., 2015. Responses of microbial community structure to land-use conversion and fertilization in southern China, ***European Journal of Soil Biology*** 70:1-6.
25. *Shedayi, A.A., Ahmad, S., Xu, M., Sadia, S., Ehsan, S. 2015. Physico-chemical and bacteriological analysis of drinking water quality of Nomal, Gilgit-Baltistan, Pakistan, ***Journal of Biodiversity and Environmental Sciences*** 7(2): 81-87.

26. *Shen, R., **Xu, M**., Zhao, F., Li, R., Sheng, Q. 2015. *S*patial variability of soil microbial biomass at high elevation sites - the positive trend with elevation is reversed on Three-River Headwaters Region on Qinghai-Tibetan Plateau, ***Applied Soil Ecology*** 95: 191–203.
27. *Xu, B., Xie, P., **Xu, M**., Jiang, L., Shi, C., You, R. 2015. A validation of Passive Microwave Rain Rate Retrievals from the Chinese FengYun (FY) 3B Satellite, ***Journal of Hydrometeorology*** 16, 1886–1905.
28. *Liu, L., **Xu, M**., Qiu, S., Shen, R. 2015. Spatial patterns of benthic bacterial communities in a large lake, ***International Review of Hydrobiology*** 100, 97–105
29. *Yang, Q., Liu, L., Zhang, W., **Xu, M**., Wang, S. 2015. Different responses of stem and soil CO2 efflux to pruning in a Chinese fir (Cunninghamia lanceolata) plantation, ***Trees***, 29:1207–1218.
30. *Li, R., **Xu, M.**, Wong, M.H.G., Qiu, S., Sheng, Q., Li, X., Song, Z. 2015. Climate change-induced decline in bamboo habitats and species diversity: implications for giant panda conservation, ***Biodiversity and Distributions***, 21(4): 379-391.
31. *Li, R., **Xu, M**., Wong, M.H.G., Qiu, S., Li, X., Ehrenfeld, D., Li, D. 2015. Climate change threatens giant panda protection in the 21st century, ***Biological Conservation*** 182：93-101. (Covered by CBS, NewScientist, and China Daily)
32. *Qiu, S., **Xu, M**. 2015. Climatic information improves statistical individual-tree mortality models for three key species of Sichuan Province, China, ***Annals of Forest Science*** 72: 443-455.
33. *Qiu, S., **Xu, M**., Zheng, Y., Li, R., Wong, M.H.G., Shedayi, A.A. 2015. Earthquake-induced impacts on tree mortality and forest carbon pool in southwest China, ***Natural Hazards*** DOI 10.1007/s11069-015-1653-6.
34. *Shedayi AA, Jan N, Riaz S, **Xu M**. 2015. Drinking water quality status in Gilgit, Pakistan and WHO standards. Sci. Int., 27(3): 2305-2311.
35. Naud, C. M., Rangwala, I, **Xu, M**., Miller, J. R. 2015. A satellite view of the radiative impact of clouds on surface downward fluxes in the Tibetan Plateau, ***Journal of Applied Meteorology and Climatology*** 54: 479-493.
36. Liu, X., Liu, B., Henderson, M., **Xu, M**., Zhou, D. 2015. Observed changes in dry day frequency and prolonged dry episodes in Northeast China, ***International Journal of Climatology*** 35(2): 196-214.
37. *Shedayi, A.A., Xu, M., Gulraiz, B. 2014. Traditional medicinal uses of plants in Gilgit-Baltistan, Pakistan, ***Journal of Medicinal Plants Research*** 8(30): 992-1004.
38. *Shen, R., **Xu, M**., Chi, Y., Yu, S., Wan. S. 2014, Soil microbial responses to experimental warming and nitrogen addition in a temperate steppe of northern China. ***Pedosphere*** 24(4): 427-436.
39. *Chi, Y., **Xu, M**., Shen, R., Wan, S. 2013. Acclimation of leaf dark respiration to nocturnal and diurnal warming in a semiarid temperate steppe, ***Functional Plant Biology*** 40：1159–1167

40. *Yang, Q., **Xu, M.,** Chi, Y., Zheng, Y., Shen, R., Wang, S. 2013. Effects of freeze damage on litter production, quality and decomposition in a loblolly pine forest in central China, ***Plant & Soil*** 374: 449-458.
41. Li, S., Xu, M., Sun, B. 2014. Long-term hydrological response to reforestation in a large watershed in southeastern China, ***Hydrological Processes*** 28: 5573-5582.
42. *Zheng, Y., **Xu, M**., Hou, R., Shen, R., Qiu, S., Ouyang, Z. 2013. Effects of experimental warming on stomatal traits in leaves of maize (Zea may L.). ***Ecology and Evolution*** **3(9): 3095-3111**. doi: 10.1002/ece3.674.
43. *Zheng, Y., **Xu, M**., Shen, R., Qiu, S. 2013. Effects of artificial warming on the structural, physiological, and biochemical changes of maize (Zea mays L.) leaves in northern China, ***Acta Physiol Plant***, 35(10): 2891-2904, DOI 10.1007/s11738-013-1320-z
44. *Chi, Y., **Xu, M**., Shen, R., Yang, Q., Huang, B., Wan, S. 2013. Acclimation of foliar respiration and photosynthesis in response to experimental warming in a temperate steppe in northern China, **PLoS ONE** 8(2): e56482. doi:10.1371/journal.pone.0056482
45. Li, X., Tian, H., Wang, Y., Li, R., Song, Z., Zhang, F., **Xu, M**. and Li, D. 2013. Vulnerability of 208 endemic or endangered species in China to the effects of climate change, ***Regional Environmental Change*** 13: 843-852**,** DOI 10.1007/s10113-012-0344-z
46. *Liu, L., **Xu, M**., Lin, M. and Zhang, X. 2013. Spatial variability of greenhouse gas effluxes and their controlling factors in the Poyang Lake in China, ***Pol. J. Environ. Stud.*** 22 (3): 749-758.
47. *Zhao, F., **Xu, M**., Zheng, Y., Huang, H., and Chi, Y. 2013. Improving the Environmental Kuznets Curve for evaluating the relationships between CO2 emissions and economic development, ***Journal of Food, Agriculture and Environment*** 11 (2): 1193-1199.
48. *Wong, M., **Xu, M**., Li, R. and Long Y. 2013. An integrative approach to assessing the potential impacts of climate change on the Yunnan snub-nosed monkey, ***Biological Conservation*** 158: 401-409.
49. Wang, C., Lv, L., and **Xu, M**. 2012. Carbon Dioxide Fumigation for Controlling Bed Bugs, ***J. Med. Entomol.*** 49(5): 1076-1083.
50. *Zheng, Y, Yang, Q., **Xu, M**., Chi, Y., Shen, R., Li, P., and Dai, H. 2012. Responses of Pinus massoniana and Pinus taeda to freezing in temperate forests in central China, ***Scandinavian Journal of Forest Research***, 27:6, 520-531.
51. Zhao, H., Kang, X., Guo, Z., Yang, H. and Xu, M. 2012. Species Interactions in Spruce–Fir Mixed Stands and Implications for Enrichment Planting in the Changbai Mountains, China, ***Mountain Research and Development***, 32(2):187-196.
52. Piao, S. L., Ito, A., Li, S. G., Huang, Y., Ciais, P., Wang, X. H., Peng, S. S., Nan, H. J., Zhao, C., Ahlström, A., Andres, R. J., Chevallier, F., Fang, J. Y., Hartmann, J., Huntingford, C., Jeong, S., Levis, S., Levy, P. E., Li, J. S., Lomas, M. R., Mao, J. F., Mayorga, E., Mohammat, A., Muraoka, H., Peng, C. H., Peylin, P., Poulter, B., Shen, Z. H., Shi, X., Sitch, S., Tao, S., Tian, H. Q., Wu, X. P., **Xu, M**., Yu,

G. R., Viovy, N., Zaehle, S., Zeng, N. and B. Zhu. 2012. The carbon budget of terrestrial ecosystems in East Asia over the last two decades, ***Biogeosciences***, 9, 3571-3586, doi:10.5194/bg-9-3571-2012

53. *Yu, J.J., Wang, M.H., Xu, M., and Ho, Y.S. 2012. A bibliometric analysis of research papers published on photosynthesis:1992-2009, ***Photosynthetica*** 50 (1): 5-14, DOI: 10.1007/s11099-012-0010-1
54. *Yu, J.J., Du, H.M., **Xu, M**., and Huang, B.R. 2012. Metabolic Responses to Heat Stress under Elevated Atmospheric CO2 Concentration in a Cool-season Grass Species, ***J. Amer. Soc. Hort. Sci.*** 137(4):221–228.
55. *Yu, J.J., Chen, L.H., **Xu, M**., and Huang, B.R. 2012. Effects of Elevated CO2 on Physiological Responses of Tall Fescue to Elevated Temperature, Drought Stress, and the Combined Stresses, ***Crop Sci.*** 52:1848 – 1858, doi: 10.2135/cropsci2012.01.0030
56. *Yang, Q., Xu, M., Chi, Y., Zheng, Y., Shen, R., Li, P. and Dai, H. 2012. Temporal and spatial variations of stem CO2 efflux of three species in subtropical China***, *Journal of Plant Ecology***, 5(2): 229-237.
57. *Zheng, Y., **Xu, M**., Zhao, J. 2011. Effects of inoculated Microcoleus vaginatus on the structure and function of biological soil crusts of desert, ***Biology and Fertility of Soils***, 47:473 – 480, DOI 10.1007/s00374-010-0521-5
58. *Zheng, Y., Xu, M., Zhao, J. and Bei, S. 2011. Morphological adaptations to drought and reproductive strategy of the moss Syntrichia caninervis in the Gurbantunngut desert (China), ***Arid Land Research and Management***, 25: 2, 116 -127
59. *Miao, Z., Lathrop Jr., R. G., **Xu, M.**, La Puma, I. P., Clark, K. L., Hom, J., Skowronski, N. and Van Tuyl, S. 2011. Simulation and sensitivity analysis of carbon storage and fluxes in the New Jersey Pinelands, ***Environmental Modelling & Software*** 26: 1112-1122.
60. Liu, B., Henderson, M., **Xu, M**., and Zhang, Y. 2010. Where have all the showers gone? Regional declines in light precipitation events in China, 1960-2000, ***International Journal of Climatology***, DOI: 10.1002/joc.2144.
61. *Guo, H., **Xu, M.**, and Hu, Q. 2010. Changes in Near Surface Wind Speed in China: 1969-2005, ***International Journal of Climatology*** 24: 1359–1374, DOI: 10.1002/joc.1073.
62. *Liu, B., Henderson, M., **Xu, M.**, and Zhang, Y. 2010. Observed changes in precipitation on the wettest days of the year in China, 1960-2000, ***International Journal of Climatology,*** DOI: 10.1002/joc.2089.
63. Matsushita, B., **Xu M**., Onda1, Y., Otsuki1 Y., Toyota, M. 2010. Detecting Forest Degradation in Kochi, Japan: Ground-based Measurements versus Satellite (Terra/ASTER) Remote Sensing, ***Hydrological Processes*** 24(5): 588-595.
64. *Liu, B., Henderson, M., Zhang, Y., and **Xu, M**. 2010. Spatiotemporal change in China's climatic growing season: 1955–2000, ***Climatic Change***, 99:93–118, DOI 10.1007/s10584-009-9662-7.

65. Rangwala, I., Miller, J., Russell, G., and **Xu, M**. 2009. Warming in the Tibetan Plateau: Possible influences of the changes in surface water vapor, ***Geophysical Research Letters***, 36, L06703, doi:10.1029/2009GL037245.
66. Rangwala, I., Miller, J., Russell, G., and **Xu, M**. 2009. Using a global climate model to evaluate the influences of water vapor, snow cover and atmospheric aerosol on warming in the Tibetan Plateau during the 21st century, ***Climate Dynamics***, 33, DOI 10.1007/s00382-009-0564-1.
67. *Zhang, Y., Xu, M., Adams, J. and Wang, X. 2009. Can Landsat imagery detect tree line dynamics?, ***International Journal of Remote Sensing***, 30(5): 1327-1340.
68. *Miao, Z., **Xu, M**., Lathrop, R., Wang, Y. 2009. Comparison of the A_Cc curve fitting methods in determining maximum ribulose 1·5-bisphosphate carboxylase/oxygenase carboxylation rate, potential light saturated electron transport rate and leaf dark respiration, ***Plant, Cell & Environment*** 32 (2), 109-122.
69. *Zhang,Y., **Xu, M.**, Chen,H., Adams, J. 2009. Global pattern of NPP/GPP ratio derived from MODIS data: effects of ecosystem types, locations and climate. ***Global Ecology and Biogeography, 18, 280-290,*** DOI: 10.1111/j.1466-8238.2008.00442.x.
70. *Liu, B. and **Xu, M.** 2008. Spatiotemporal change in China's frost days and frost-free season, 1955-2000, ***Journal of Geophysical Research***, 113, D12104, doi:10.1029/2007JD009259.
71. Qi, Y., Li, H.M., **Xu, M.** 2008. Accounting Embodied Carbon in Import and Export in China, ***Population, Resources and Environment*** 18 (3): 8-13.
72. Qi, Y., Li, H.M., **Xu, M**. 2008. Accounting Embodied Energy in Import and Export in China, ***Population, Resources and Environment*** 18 (3): 69-75.
73. *Ge, S., **Xu, M.,** Anderson, G., Carruthers, R. 2007. Estimating Yellow Starthistle (Centaurea solstitialis) Leaf Area Index and Aboveground Biomass with the Use of Hyperspectral Data， ***Weed Science***, 55: 671-678.
74. **Xu, M**., Chang, C-P, Fu, C., Qi, Y., Robock, A., Robinson, D., and Zhang, H-M. 2006. Steady Decline of East Asian Monsoon Winds, 1969 - 2000: Evidence from Direct Ground Measurements of Wind Speed, ***Journal of Geophysical Research***, 111, D24111, doi:10.1029/2006JD007337.
75. Rangwala, I., Miller, J., Russell, G., and **Xu, M.** 2006. Analysis of global climate model experiments to elucidate past and future changes in surface insolation and warming in China, ***Geophysical Research Letters*** 33. L20709, doi:10.1029/2006GL027778.
76. Matsushita, B., **Xu, M**., Fukushima, T. 2006. Characterizing the Changes in Landscape Structure in the Lake Kasumigaura Basin, Japan Using a High-quality GIS Dataset, ***Landscape and Urban Planning*** 78: 241-250.
77. *Li, Y., **Xu, M**., Zou, X. 2006. Heterotrophic soil respiration in relation to environmental factors and microbial biomass in two wet tropical forests, ***Plant and Soil*** 281: 193-201.
78. Qian, Y., Kaiser, D. P., Leung, L. R., **Xu, M**. 2005. More frequent cloud-free sky and less surface solar radiation in China from 1955-2000, ***Geophysical Research Letters*** VOL. 33, L01812, doi:10.1029/2005GL024586.

79. *Li, Y., **Xu, M**., Zou, X. 2005. Effects of nutrient additions on ecosystem carbon cycle in a Puerto Rican tropical wet forest, ***Global Change Biology*** 12, 284–293, doi: 10.1111/j.1365-2486.2005.01096.x.
80. Misson, L., Tang, J., **Xu, M**., McKay, M. and Goldstein, A. 2005. Influences of recovery from clear-cut, climate variability, and thinning on the carbon balance of a young ponderosa pine plantation, ***Agriculture and Forest Meteorology*** 130: 207-222.
81. *Liu, B., **Xu, M.,** Henderson M. 2005. Observed trends of precipitation amount, frequency, and intensity in China, 1960-2000, ***Journal of Geophysical Research*** **110**, D08103, doi:10.1029/2004JD004864.
82. 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: 783-796.
83. *Li, Y., Xu, M., Zou, X., Sun, O. J. 2005. Comparing soil organic carbon dynamics in plantation and secondary forest in wet tropics in Puerto Rico, ***Global Change Biology*** 11: *239-248.*
84. *Li, Y., **Xu, M.**, X. Zou, W. C. Cui. 2004. Effects of root and litter exclusion on soil respiration and microbial biomass in wet tropical forests. ***Soil Biology and Biochemistry*** 36: 2111-2114.
85. Tang, J., Qi, Y., **Xu, M**., Misson, L., and Goldstein A. H. 2005. Effects of forest thinning on soil respiration in a ponderosa pine plantation in the Sierra Nevada, ***Tree Physiology*** 25: 57-66.
86. Matsushita, B., **Xu, M**., Chen, J., Kameyama, S., Tamura, M. 2004. Estimation of regional net primary productivity (NPP) using a process-based ecosystem model: How important is the accuracy of climate data? ***Ecological Modeling*** 178: 371-388.
87. *Li, Y., **Xu, M**., Zou, X. 2004. Soil CO_2 efflux and fungal and bacterial biomass in a plantation and a secondary forest in wet tropics in Puerto Rico, ***Plant and Soil*** 268: 151-160.
88. *Liu, B., **Xu M**., Henderson M., Qi, Y. and Li, Y. 2004. Taking China's temperature: daily range, warming trends, and regional variations, 1955-2000. ***Journal of Climate*** 17: 4453-4462.
89. *Liu, B., **Xu, M**., Henderson, M., Gong, W. 2004. A spatial analysis of pan evaporation trends in China, 1955-2000, ***Journal of Geophysical Research***, *109*, D15102, doi:10.1029/2004JD004511.
90. Qi, Y., Henderson, M., **Xu, M**. 2004. Evolving core-periphery interactions in urban landscape: Beijing, ***Landscape Ecology*** 19: 375-388.
91. **Xu, M**., Qi, Y., Chen, J., Song, B. 2004. Scale-dependent relationships between landscape structure and microclimate. ***Plant Ecology*** 173: 39-57.
92. Reichstein M, Rey A, Freibauer A, Tenhunen J, Valentini R, Banza J, Casals P, Cheng YF, Grunzweig JM, Irvine J, Joffre R, Law BE, Loustau D, Miglietta F, Oechel W, Ourcival JM, Pereira JS, Peressotti A, Ponti F, Qi Y, Rambal S, Rayment M, Romanya J, Rossi F, Tedeschi V, Tirone G, **Xu M**, Yakir D. 2003. Modeling temporal and large-scale spatial variability of soil respiration from soil water availability, temperature and

vegetation productivity indices, ***Global Biogeochemical Cycles***, 17(4): Art. No. 1104.

93. Yang, X., **Xu, M**. 2003. Biodiversity conservation in Changbai Mountain Biosphere Reserve, northeastern China: status, problem, and strategy. ***Biodiversity and Conservation*** 12: 883-903.
94. Gong, P., **M. Xu**, Jin Chen, Jing M. Chen, Ye Qi, Greg Biging, Jiyuan Liu, Shaoqiang Wang, 2002. A preliminary study on the carbon dynamics of China's terrestrial ecosystems in the past 20 years, ***Earth Science Frontiers***, 9(1):55-61.
95. **Xu, M**., Chen, J., and Y. Qi. 2002. Microclimate along a 10km transect across a forested landscape. ***Climate Research*** 22: 57-72.
96. Qi, Y. and **M. Xu**. 2002. Temperature sensitivity of soil respiration and its impact on ecosystem carbon flux: Measurement and modeling. ***Ecological Modeling*** 153: 131-142.
97. **Xu, M**., and Y. Qi. 2001. Soil surface CO_2 efflux and its variation in a young ponderosa pine plantation in the Sierra Nevada Mountains, California. ***Global Change Biology*** 7: 667-677. **(Top 25 cited articles of all time in GCB)**
98. **Xu, M**., and Y. Qi. 2001. Spatial and seasonal variations of Q_{10} determined by soil respiration measurements at a Sierra Nevadan forest. ***Global Biogeochemical Cycles*** 15: 687-696.
99. Qi, Y. and **M. Xu**. 2001. Separating the effects of moisture and temperature on soil CO2 efflux in a coniferous forest in the Sierra Nevada Mountains. ***Plant and Soil*** 237: 15-23.
100. **Xu, M**., DeBiase, T., Qi, Y., Goldstein, A. and Z. Liu. 2001. Ecosystem respiration in a young ponderosa pine plantation in the Sierra Nevada Mountains, California. ***Tree Physiology*** 21: 309-318.
101. Yi, C., Gong, P., **Xu, M**. and Y. Qi. 2001. The effects of buffer and temperature feedback on the oceanic uptake of CO_2. ***Geophysical Research Letters*** 28: 751-754.
102. **Xu, M**., Qi, Y. and P. Gong. 2000. China's new forest policy. ***Science*** 289: 2049-2050.
103. **Xu, M**., DeBiase, T., and Y. Qi. 2000. A simple technique using a horizontally-oriented soil chamber to measure stem respiration. ***Canadian Journal of Forest Research*** 30: 1555-1560.
104. Goldstein, A.H., Hultman, N.E., Fracheboud, J.M., Bauer, M.R., Panek, J.A., **Xu, M**., Qi, Y., Guenther, A.B., and W. Baugh. 2000, Effects of climate variability on the carbon dioxide, water, and sensible heat fluxes above a ponderosa pine plantation in the Sierra Nevada (CA). ***Agricultural and Forest Meteorology*** 101: 113-129.
105. Zheng, D., J. Chen, B. Song, **M. Xu**, P. Sneed, and R. Jensen. 2000. Effects of silvicultural treatments on forest microclimate in southeastern Missouri Ozarks. ***Climate Research*** 15: 45-59.
106. **Xu, M**., and Y. Qi. 2000. Effects of spatial heterogeneity of microenvironment on plant biodiversity in the Southeastern Missouri Ozarks. ***Geographic Information Science*** 6: 38-47.
107. **Xu, M**. and Y. Qi. 2000. Effects of spatial scale on the relationships between plant species richness and microclimate in the Southeastern Missouri Ozarks, USA. ***Polish Journal of Ecology*** 48: 77-88.

108. **Xu, M**. and J. Chen. 1997. Temperature and its variability in oak forest in Southeast Missouri Ozarks. ***Climate Research*** 8(3): 209-233.
109. **Xu, M**., Saunders, S.C., and J. Chen. 1997. Analysis of landscape structure in Southeast Missouri Ozarks using remote sensing and GIS techniques. General Technical Report, USDA, Forest Service, ***General Technical Report NC***-193: 41-53.
110. Chen, J., **Xu, M**. and K. Brosofske. 1997. Microclimate characteristics in Southeast Missouri Ozarks. ***General Technical Report***, USDA, Forest Service, *General Technical Report NC*-193: 120-133.

Publications in Chinese (peer-reviewed)

1. *Liu, L., Zhang, L., Zhao, F., Zhao, M., Zhao, H., Shao, R., **Xu, M.** 2017. Opportunities and challenges presented by ecological environment data, ***Acta Ecologica Sinica*** 37(14): 4897-4904.
2. *Zhao, F., Zhang, L., Zhao, M., Shao, R., Liu, L., Zhao, H., **Xu, M.** 2017. Architecture and technical exploration of big data platform for ecological environment, ***Chinese Journal of Ecology*** 36(3): 824-832.
3. *Zhao, H., **Xu, M**. 2016. Valuation of the forest ecosystems in conserving biodiversity in Sichuan Province, ***Journal of Natural Resources*** 31(5): 789-799 (in Chinese with English abstract)
4. *Zhao, M., Zhao, S., Zhang, L., Zhao, F., Shao, R., Liu, L., Zhao, H., Xu, M. 2017. Applications of eco-environmental big data: Progress and prospect, Chinese Journal of Applied Ecology 28(5): 1727-1734.
5. *Zhao, M., Zhao, H., Li, R., Zhang, L., Zhao, F., Liu, L., Shen, R., Xu, M. 2017. Assessment on grassland ecosystem services in Qinghai Province during 1998-2012, Journal of Natural Resources 32(3): 418-433 (in Chinese with English abstract)
6. *Li, R., ***Xu, M***., Zhang, L., Zhao, F., Sheng, Q. 2017. Gap analyses for biodiversity conservation in Qinghai Province, China, ***Biodiversity Science*** (in press)
7. *Zhao, M., Xu, M. 2016. Valuation of grassland ecosystem services in Qinghai Province (1998-2012), ***Journal of Natural Resources*** (in Chinese with English abstract) (in press)
8. *Zhao, H., Zhao, M., Xu, M. 2017. Status and development trends of eco-environmental big data, ***Ecology and Environment*** (in Chinese with English abstract) (in press)
9. Shen, R., Zhang, G., Zhang, Y., **Xu, M**. 2015. Factors affecting storm peak flow in small watersheds in the Loess Plateau, ***Science of Soil and Water Conservation*** 13(2): 24-30.
10. *Zheng, Y., **Xu, M**., Wang, J., Wang, H. 2016. Effects of future climate warming on the morphology, structure, and gas exchange of maize leaves in the North China Plain, ***Acta Ecologica Sinica***, 36(6): 1526-1538 (in Chinese with English abstract)
11. *Zheng, Y., Dang, C., Hao, L., Cheng, D., **Xu, M**. 2016. Adaptation of maize leave photosynthesis and respiration to experimental warming in the North China Plain, ***Acta Ecologica Sinica***, 36(16): 5236-5246 (in Chinese with English abstract)

12. *Shen, R., Zhang, G., Zhang, Y., **Xu, M.** 2015. Factors affecting storm peak flow in small watersheds in the Loess Plateau, ***Science of Soil and Water Conservation*** 13(2): 24-30.
13. *Zheng, Y., **Xu, M**., Wang, J., Qiu, S., Wang, H. 2015. Responses of the stomatal traits and gas exchange of maize leaves to climate warming, ***Acta Agronomica Sinica*** 41(4): 601-612. (in Chinese with English abstract)
14. *Zheng, Y., Wang, H., Lou, X., Yang, Q., **Xu, M.** 2014. Changes of non-structural carbohydrates and its impact factors in trees: A review, ***Chinese Journal of Applied Ecology*** 25(4): 1188-1196 (in Chinese with English abstract).
15. *Qiu, S., **Xu, M**., Li, R. 2014. Spatio-temporal simulation of daily solar radiation in Sichuan Province, ***Quaternary Sciences*** 34 (4): 898-904 (in Chinese with English abstract).
16. Zhang, X., Geng, Y., **Xu, M**., Liu, L., Lin, M. 2014. Soil enzyme activity and influencing factors in lakeside wetland of Poyang Lake, Jiangxi Province of eastern China, ***Journal of Beijing Forestry University*** 36(1):34-40 (in Chinese with English abstract).
17. *Yuan, Z., Huang, G., Mo, H., Shen, R., **Xu, M**., Qiu, S., Zhao, F., Li, R. 2014. Dynamic assessment of the plant carbon storage in Baoxing county of Sichuan Province, ***Forest Resources Management*** 11: 82-88 (in Chinese with English abstract).
18. *Zhou, H. R, **Xu, M**., Yu, X. B. 2014. On the Study of acclimation and phenotypic plasticity, ***Journal of Northwest A&F University***, 42(4):215-220 (in Chinese with English abstract).
19. Guo*, Z., Peng, D., **Xu, M**., Qiu, S. 2014. Simulation of Coupling Transmission of Water and Heat in Soil under Seasonal Freezing and Thawing, ***Acta Pedologica Sinica*** 51(4):816-823 (in Chinese with English abstract)
20. Huang, G., Zhao, F., Li, R., **Xu, M**. 2012. Evaluation of ecosystem services: Current status, challenges, and prospects, ***Forest Resources Management*** 9(4): 17-23. (in Chinese with English abstract)
21. Lin, M., Xu, M., Geng, Y., Liu, L., Zhang, X. 2012. Spatial heterogeneity and controlling factors of autumn CH4 flux at water-air interface in Poyang Lake of Jiangxi Province， China, ***Chinese Journal of Ecology*** 31(8) : 2112 -2118 (in Chinese with English abstract).
22. *Yang, Q., **Xu, M**., Liu, H., Wang, J., Liu, L., Chi, Y., Zheng, Y. 2011. Impact factors and uncertainties of the temperature sensitivity of soil respiration, ***Acta Ecologica Sinica***, 31(8): 2301-2311. (In Chinese with English abstract) **(Best Paper Award by the Ecological Society of China in 2013; Selected by "Frontrunner 5000" in 2015)**
23. *Yu, J., Chen, L., **Xu, M**., Guo, Z., Xiang, G. 2010. A Hybrid Model of FVS-BGC: Main Principles and Applications, ***World Forestry Research*** 23(4): 36-40. (In Chinese with English abstract)
24. *Zhao, F., **Xu, M**., Qi, Y. 2010. The Environmental and Economic Benefits of Automotive Restrictions in Beijing, ***Ecological Economy*** 12: 40-44. (In Chinese with English abstract)

25. Liu, H., Liu, H., Wang, Z., Xu, M., Han, X., Li, L. 2008. The temperature sensitivity of soil respiration, ***Progress in Geography*** 27(4): 51-60 (in Chinese with English abstract).
26. Gu, Z., Chen, J., Shi, P. and **Xu, M**. 2007. Correlation analysis of Normalized Different Vegetation Index (NDVI) difference series and climate variables in the Xilingole steppe, China from 1983 to 1999, ***Front. Biol. China*** 2007, 2(2): 218–228, DOI 10.1007/s11515-007-0033-3 (In Chinese with English abstract)
27. **Xu, M**. and X. Pan. 1995. Stability and dynamics of the energy flow in Pu-Wa ecosystem. ***Acta Ecologica Sinica*** 15(1): 72-78 (in Chinese with English abstract).
28. **Xu, M**., Zheng, D. and Z. Liu. 1994. Nutrient cycling and energy flow in Pu-Wa ecosystem. ***Acta Beijing Forestry University*** 16(3): 1-7 (in Chinese with English abstract).
29. **Xu, M.** 1994. Ecosystem design and optimization in Pu-Wa township in Beijing, China. ***Chinese Journal of Ecology*** 13(2): 76-79 (in Chinese with English abstract).
30. **Xu, M**. 1994. Comparison of energy balance over different vegetation types on the Loess Plateau in China. ***Acta Agriculturac Boreali-Sinica*** 9(2): 81-87 (in Chinese with English abstract).

Conference Papers:

1. **Xu, M**., Huang, B. The CO2 fertilization effect on the growth of winter wheat, 4th International Conference on Agriculture & Horticulture, Beijing, China, July 13-15, 2015.
2. **Xu, M**., Chi, Y., Zhou, H., Zheng, Y. Plant Acclimation mechanisms to global warming, Annual Meeting of the China Ecosystem Network Observation and Modeling, Beijing, China, Oct. 30, 2012.
3. **Xu, M**., Li, R. Biodiversity conservation and climate change mitigation strategies and action plan for China, International Symposium on Biodiversity and Climate Change, Beijing, Aug. 2-3, 2011.
4. **Xu, M**., Huang, M., Tao, B. Ecosystem carbon budget on the Tibetan Plateau: Past, present and future, International Conference on Biogeochemical Cycling in Grassland Ecosystems on the Tibetan Plateau, Xining, China, July. 21-23, 2008.
5. Schafer, K. V.; Murnick, D. E.; Hamerlynck, E. P.; **Xu, M.** Innovative Instrumentation for Measuring Isotopic CO2 Fluxes for Ecological Applications, American Geophysical Union, Fall Meeting 2006
6. **Xu, M**., Liu, B., Henderson, M. and Qi, Y. Precipitation change in China from 1960 to 2000, International Association of Meteorology and Atmospheric Sciences, Beijing, China, Aug. 2-11, 2005.
7. **Xu, M.** Climate change and carbon cycle in China's terrestrial ecosystems, Association of Chinese Geographers, Beijing, China, Aug. 16-18, 2005.
8. **Xu, M.,** Guo, Q., Qi, Y. Application of high-resolution remote sensing to detect soil temperature and soil respiration. The 16th Annual Symposium of the US Regional Chapter of the International Association of Landscape Ecology, Arizona, April, 2001.

9. Fisher, J. B., DeBiase, T. A., Qi, Y., Xu, M., Goldstein, A. Evapotranspiration methods compared on a Sierra Nevada forest ecosystem, American Geophysical Union, San Francisco, CA, December 2001.
10. **Xu, M**., Qi, Y., Guo, Q., Tang, DeBiase, T., Henderson, M. Soil surface CO2 efflux and its variation in a forest ecosystem in Northern California, America Geophysical Union annual meeting, San Francisco, December 2000.
11. Guo, Q., Qi, Y., **Xu, M**. The relationship between temperature, precipitation and NDVI in China. AGU conference. San Francisco, December, 1999.
12. **Xu, M**., Qi, Y., Debiase, T., Guo, Q., Tang, J, Henderson, M. Soil CO2 Efflux in a Young Ponderosa Pine Plantation in Sierra Nevada, California. AGU conference. San Francisco, December, 1999.
13. **Xu, M**., Qi, Y., Chen, J. Scale effects on the hierarchical relationships between landscape structure and microclimate, presented at the 5th World Congress of International Association for Landscape Ecology, Snowmass Village, Colorado, USA, July 29 – August 3, 1999.

Books

1. **Xu, M**. 2016. Carbon Accounting in Forest Ecosystem: Methods and applications, China Forestry Publishing House, Beijing, pp 341 (in Chinese) (in press).
2. Zhao, H. and **Xu, M**. 2015. Valuation of Ecosystem Services: Methods and applications, China Forestry Publishing House, Beijing, pp 211 (in Chinese).
3. **Xu, M**. and Ma C. 2009. Climate Change Vulnerability and Adaptation in the Yangtze River Basin, China Water Power Press, Beijing, pp246. (in Chinese)
4. Xiao, W., Luo, Y., **Xu, M.** et al. 2007. Forest Ecology and Environmental Studies, China Forestry Publishing House, Beijing, pp470 (in Chinese).

Book chapters

1. **Xu, M**. 2013. Ecosystem adaptation to global change: Mechanisms and strategies, In: Li, W (ed), Contemporary Ecological Research in China, Science Press, Beijing (in Chinese with English abstract).
2. Pittock, J. and **Xu, M.** 2011. "World Resources Report Case Study. Controlling Yangtze River Floods: A New Approach." World Resources Report, Washington DC.
3. **Xu, M**. and Xin, W. 2010. An invisible killer. In: Moore, K. D. and M. P. Nelson (eds.) MORAL GROUND: Ethical Actions for a Planet in Peril, Trinity University Press, San Antonio, Texas.
4. **Xu, M.** and Guo, H. 2009. Impact of climate change on typical ecosystems in the Yangtze River Basin, In: Yang, G., Ma, C. and Chang, S. (eds.). Yangtze Conservation and Development Report, Yangtze Press, Wuhan, China. p. 81-91. (in Chinese)
5. Gong, P., Chen, J., **Xu**, M. 2004. A preliminary study on the carbon dynamics of China's forest ecosystems in the past 20 years, In: Shiyomi, M. et al. (Eds), Global Environmental

Change in the Ocean and on Land, pp 401-410, TERRAPUB.

6. He, Q. and **M. Xu**. 1994. Effects of climatic change on forest production in China. In: Deng, G. and Yu, H. (eds.), Impacts of Climatic Change on Agriculture and Forestry in China, Meteorological Sciences Press, Beijing (in Chinese with English abstract).

TEACHING EXPERIENCE

Fall 2017, **Global Change Ecology**, Rutgers University
Spring 2017, **Introduction to Ecological and Environmental Modeling**, Rutgers University
Fall 2016, **Global Change Ecology**, Rutgers University
Spring 2016, **China and Its Environment**, Rutgers University
Fall 2015, **Global Change Ecology**, Rutgers University
Spring, 2015, **China's Ecological, Environmental and Agricultural Challenges and Global Impacts**, Rutgers University
Fall 2014, **Global Change Ecology**, Rutgers University
Summer 2014, **Global Change**, Sino-Danish College, Chinese Academy of Sciences, Beijing (Co-instructor, I gave 3 lectures on Plant Physiology and Ecosystem Carbon Cycle; Course organizers: Prof. Jørgen E. Olesen of Aarhus University and Prof. Shenggong Li of Chinese Academy of Sciences)
Spring 2014, **Introduction to Ecological and Environmental Modeling**, Rutgers University
Fall 2013, **Global Change Ecology**, Rutgers University
Summer 2014, **Global Change**, Sino-Danish College, Chinese Academy of Sciences, Beijing (Co-instructor, I gave 3 lectures on Plant Physiology and Ecosystem Carbon Cycle; Course organizers: Prof. Jørgen E. Olesen of Aarhus University and Prof. Shenggong Li of Chinese Academy of Sciences)
Spring, 2013, **China's Ecological, Environmental and Agricultural Challenges and Global Impacts**, Rutgers University
Winter 2012, **Contemporary Ecology**, Chinese Academy of Sciences, Beijing (Course contributor, I gave one lecture on Global Change Ecology, Course organizer: Professor Wenhua Li of the Chinese Academy of Sciences)
Fall 2012, **Global Change Ecology**, Rutgers University
Spring 2012, **China's Ecological, Environmental and Agricultural Challenges and Global Impacts**, Rutgers University
Winter 2011, **Contemporary Ecology**, Chinese Academy of Sciences, Beijing (Course contributor, I gave one lecture on Global Change Ecology, Course organizer: Professor Wenhua Li of the Chinese Academy of Sciences)
Fall 2011, **Introduction to Ecological and Environmental Modeling**, Rutgers University
Climate Change Impacts, Vulnerability and Adaptation, Rutgers University (SAS Honors Program)
Spring 2011, **China's Ecological, Environmental and Agricultural Challenges and Global Impacts**, Rutgers University
Winter 2010, **Contemporary Ecology**, Chinese Academy of Sciences, Beijing (Course

contributor, I gave one lecture on Global Change Ecology, Course organizer: Professor Wenhua Li of the Chinese Academy of Sciences)
Fall 2010, **Introduction to Ecological and Environmental Modeling**, Rutgers University
Spring 2010, **China's Ecological, Environmental and Agricultural Challenges and Global Impacts**, Rutgers University
Fall 2008, **Introduction to Ecological and Environmental Modeling**, Rutgers University
Landscape Ecology, Rutgers University
Fall 2007, **Introduction to Ecological and Environmental Modeling**, Rutgers University
Landscape Ecology, Rutgers University
Fall 2006, **Introduction to Ecological and Environmental Modeling**, Rutgers University
Landscape Ecology, Rutgers University
Fall 2005, **Introduction to Ecological and Environmental Modeling**, Rutgers University
Climate Change in the Past 3,000 Years, Rutgers University (Co-Instructor)
Spring 2005**, Ecophysiology and Ecosystem Modeling** (16:215:586), Rutgers University
Fall 2004, **Introduction to Ecological & Environmental Modeling**, Rutgers University
Spring 2004, **Ecophysiology and Ecosystem Modeling** (16:215:586), Rutgers University
Ecosystem Ecology and Global Climate Change, Rutgers University (Co-Instructor)
Fall 2003, **Introduction to Ecological & Environmental Modeling**, Rutgers University
Fall 2001, Ecosystem Modeling, UC Berkeley (Co-Instructor).

MENTORING EXPERIENCE

Research / Post-Doctoral Associates

Dr. Yangjian Zhang, 2008-2012 (with Dr. Rick Lathrop), "Bairen" Professor, Chinese Academy of Sciences
Dr. Zewei Miao, 2006-2010 (with Dr. Rick Lathrop), Research Assistant Professor, University of Illinois, Urbana-Champaign
Dr. Karina Schafer, 2006 - 09 (with Dr. Erik Hamerlynck at Rutgers Newark), Associate Professor, Rutgers University, Newark
Dr. Shaokui Ge, 2005-07, Biostatistician, National Eye Institute
Dr. Yiqing Li, 2003-2005, Associate Professor, University of Hawaii at Hilo

Graduate Students

Major Dissertation / Thesis Advisor (or Co-advisor)
Rutgers University
Sadia Tijjani (PhD student, 2016, Department of Geography)
Hua Shang (expected to finish by fall 2018)
Nicholas Skowronski (PhD 2011), Research Forester, USDA-Forest Service
Yufei Wang (PhD 2010), Professor, Nanjing Normal University

Han Han (quit due to family issue)
Juan Wang (M.S. 2007), Business Analyst, Wyndham Worldwide Corporation
Jing Luo, 2004-05, Transferred to The Ohio State University
Ruichang Shen (PhD 2015), Assistant Professor, Nanchang University, Nanchang, China
Shuai Qiu (PhD 2015), Beijing, China
Fengxia Zhao (PhD 2014), Assistant Professor, Shanxi Normal University, Linfen, China
Yonggang Chi (PhD 2013), Assistant Professor, Institute of Botany, CAS, Beijing, China
Yunpu Zheng (PhD 2013), Associate Professor, Hebei University of Engineering, Handan, China
Haoran Zhou (M.S. 2013), PhD student, University of Pennsylvania
Lixiang Liu (PhD 2012), Postdoc, CAS, Beijing
Qingpeng Yang (PhD 2011), Assistant Professor, Institute of Applied Ecology, CAS, Shenyang

Dissertation/Qualify Exam Committee Member
Patrick Burgess (Current Ph.D. student, Department of Plant Biology and Pathology)
Inga Parker La Puma (Ph.D. 2012, Ecology)
Monica Marie Palta (Ph.D. 2012, Ecology)
Dinali Nelun Fernando (Ph.D. 2010, Department of Geography)
Gregory Dahle (Ph.D. 2009, Ecology)
Imtiaz Rangwala (Ph.D. 2008, Department of Environmental Science)
Ronald Smith (Ph.D. 2007, Anthropology)
Guangyong Choi (Ph.D. 2007, Geography)
Joe Dunsey (Master, 2005, Ecology)
Sangbum Lee (Ph.D. 2003, EENR)
Stacey Lettini (Ph.D. qualifying examination committee)
Kenneth Elgersma (Ph.D. qualifying examination committee)
Jessica Sanders (Ph.D. qualifying examination committee)
Irene Zager (Ph.D. qualifying examination committee, Department of Geography)
Di Li (Ph.D. qualifying examination committee, IMCS)

Graduate/Undergraduate Student Researchers

Daniel Clark, Ph.D. student, Rutgers University, Forest Soil Carbon Inventory and Modeling (Summer Internship, 2013)
Parth Patel (undergraduate), independent study, senior project – "On the Measurement and Modeling of Soil Respiration in Terrestrial and Wetland Ecosystems". (2014)
Ronak Patel (undergraduate), independent study, senior project – "Automatic Chambers for Measuring Soil Respiration: Problems and solutions". (2014)

Visiting Scholars / Students

Xin Sui, 2015-present, Professor from the Chinese Institute of Water Resources and Hydropower Research
Fang Zhang, 2014-15, Associate Professor from Anhui Normal University

Yunpu Zheng, 2012-14, Ph.D. student from Chinese Academy of Sciences
Xinhai Li, 2012-13, Associate Professor from Chinese Academy of Sciences
Yali Song, 2011-13, Ph.D. student from Beijing Forestry University
Jingjin Yu, 2010-12, Ph.D. student from Beijing Forestry University
Yanhong Liu, 2011-12, Associate Professor from Beijing Forestry University
Yuqing Geng, 2010-11, Associate Professor from Beijing Forestry University
Hongsheng Liu, 2008-2010, Assistant Professor from Chinese Academy of Sciences
Qian Yu, 2004 (summer), Ph.D. student from UC Berkeley
Lin Yang, 2003-05, Professor, Chinese Academy of Social Sciences
Binhui Liu, 2002-03, Professor from Northeast Forestry University, China