

CURRICULUM VITAE of Guangxing Wang

I. PROFESSIONAL AFFILIATION AND CONTACT INFORMATION

- A. Present University Department or Unit:
Geographic Information Sciences (GIS)/(Remote Sensing)
Department of Geography and Environmental Resources
- B. Office Address:
College of Liberal Arts
Southern Illinois University Carbondale (SIUC)
Faner Hall 4442, MC 4514
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II. EDUCATION

- Ph.D.** Remote Sensing of Forest Resources, University of Helsinki, Finland, 1996
Major advisor: Dr. Simo Poso
Dissertation title: An expert system for forest resource inventory and monitoring using multi-source data
- M.Sc.** Forest Biometrics, Central South University of Forestry and Technology, China, 1985
Major advisor: Professor Zichun Cheng
Thesis title: Forest growth modeling for Chinese fir plantations
- B.S.** Forestry, Central South University of Forestry and Technology, China, 1982

III. PROFESSIONAL EXPERIENCE

- 2015 Jul - Present, Professor of Remote Sensing and GIS, Department of Geography and Environmental Resources, Southern Illinois University Carbondale, Illinois, USA
- 2011 July – 2015 June, Associate Professor of Remote Sensing and GIS, Department of Geography and Environmental Resources, Southern Illinois University Carbondale, Illinois, USA
- 2013 June – December (sabbatical), visiting professor, Central South University of Forestry and Technology, China
- 2007 August – 2011 June, Assistant Professor of Remote Sensing and GIS, Department of Geography and Environmental Resources, Southern Illinois University Carbondale, Illinois, USA
- 1998 – August 2007, Postdoctoral Research Associate and Academic Research Scientist, Department of Natural Resources and Environmental Sciences, University of Illinois at Urbana-Champaign, Illinois, USA
- 1996 - 1997, Research Scientist, Department of Forest Resources Management, University of Helsinki, Finland
- 1992 - 1996, Research Assistant (Ph.D. candidate), Department of Forest Resources Management, University of Helsinki, Finland

- 1991 - 1992, Visiting Scholar, Department of Forest Resources Management, University of Helsinki, Finland
- 1994 - 1996, Associate Professor of forest biometrics, College of Forestry, Central South University of Forestry and Technology, China
- 1985 - 1993, Lecturer of forest biometrics, College of Forestry, Central South University of Forestry and Technology, China

IV. RESEARCH AND CREATIVE ACTIVITY

A. Interests and Specialties

Remote sensing, GIS, spatial statistics and their applications to geography, natural and environmental resources with the specific areas:

- Land use and land cover change detection;
- sampling design strategies;
- human activity and natural disaster induced vegetation disturbance and soil erosion, environmental quality assessment;
- forest and city vegetation carbon sequestration modeling and mapping;
- wetland classification and dynamics monitoring;
- desertification trend monitoring
- quality assessment and spatial uncertainty analysis of remote sensing and GIS products

B. Current Projects

1. PI: Unmanned Aircraft Systems (UASs) Based Vegetation Cover and Disturbance Mapping and Dynamic Monitoring, and Comparisons with Other Methods for Military Installations. Great River Cooperative Ecosystem Studies Units (CESU) National Network through Construction Engineering Research Laboratory (CERL), US\$185,969, 08/01/2018 – 07/31/2022.
2. PI: Multi-source and Multi-scale Data Analysis and Quality Assessment for mapping and dynamically monitoring permafrost vulnerability for the installations of Alaska. Great River Cooperative Ecosystem Studies Units (CESU) National Network through Construction Engineering Research Laboratory (CERL), US\$159,489, 01/01/2017 – 03/31/2020.

C. Grants Received and Completed

1. PI: Annual monitoring model of desertification trend based on remote sensing and ground observation for Beijing-Tianjin sandstorm source control area. State Forestry Administration of China, RMB¥500,000 Yuan (about US\$72,000), 01/01/2014 – 08/31/2018 (summers).
2. PI: Shenzhen City vegetation carbon modeling. XianHu Botanic Garden of Shenzhen, China, RMB¥370,000 Yuan (about US\$57,800), 01/01/2014 – 12/31/2015 (summers).
3. PI: Advancing remote sensing based forest resources inventory and monitoring. Central South University of Forestry and Technology, China, RMB¥600,000 Yuan (about US\$97,000), 01/01/2013 – 12/31/2015 (sabbatical and summers).

4. PI: Navigation system and cloud service based technology for collection of forest resources data. Department of Education, Hunan of China, RMB¥150,000 Yuan (about US\$25,000), 09/2013 – 09/2015 (sabbatical and summers).
5. PI: Spatial assessment of cumulative vehicle use impacts and identification of superfluous roads: part II – tasks 6-7. Great River Cooperative Ecosystem Studies Units (CESU) National Network through Construction Engineering Research Laboratory (CERL), US\$107,622.00, 01/2011 – 05/2013.
6. PI: Southern IL GIS Mapping for Next Generation 911 Based on NENA Standard Data Formats. Co-PI: Matthew Therrell, The Counties of Southern Illinois LLC, US\$65,203, 08/16/2010 – 08/15/2012.
7. Co-PI: Satellite image and continuous forest resource inventory based forest carbon modeling and spatial uncertainty analysis. PI: Dr. Maozhen Zhang (Zhejiang Forestry University of China), National Natural Science Foundation of China, Chinese Yuan ¥320,000 (about US\$47,000), 01/01/2010 – 12/31/2012 (summers).
8. PI: Spatial assessment of cumulative vehicle use impacts and identification of superfluous roads: part I – tasks 1 – 3, 5. Great River Cooperative Ecosystem Studies Units (CESU) National Network through Construction Engineering Research Laboratory (CERL), US\$71,355.00, 09/2008 – 12/2010.
9. PI: IL Statewide Healthcare and Educational Dataset Maintenance. The US Department of Commerce through Partnership for a Connected Illinois, Inc., US\$96,866, 12/01/2009 – 11/30/2011.
10. PI: Illinois Statewide Healthcare and Education Mapping. IL Department of Commerce and Economic Opportunity (DCEO) through Partnership for a Connected Illinois, US\$30,731.00, 07/2009-08/2010.
11. PI: Mapping and Spatial Uncertainty Analysis of Forest Carbon: Combining National Forest Inventory Data and Satellite Images. Seed grant from Southern Illinois University Carbondale, US\$15,623.40, 06/2009 – 05/2010.
12. Senior: II-New: Southern Illinois High Performance Computing (HPC) Infrastructure (SIHPCI). PI: Shaikh S. Ahmed, Co-PIs: Tonny Oyana, Mark S. Byrd, Qiang Cheng, Mesfin Tsige, National Science Foundation (NSF), US \$360,779, 08/01/2009–08/01/2011.
13. PI: Image based land change detection and vegetation carbon modeling. Start-up grant, Southern Illinois University Carbondale, US\$71,999, 08/2007 – 07/2009.
14. Investigator: Carrying capacity and military impact assessment of Engineer Research and Development Center - Construction Engineering Research Laboratory (ERDC-CERL) data. PI: Dr. George Gertner, University of IL at Urbana-Champaign, Great River Cooperative Ecosystem Studies Units (CESU) National Network through the U.S. Army Construction Engineering Research Laboratory (US Army CERL), summer of 2008.
15. Academic Research Scientist: Carrying capacity and military impact assessment of ERDC-CERL data. PI: Dr. George Gertner, University of IL at Urbana-Champaign, Great River Cooperative Ecosystem Studies Units (CESU) National Network through the U.S. Army Construction Engineering Research Laboratory (US Army CERL), US\$183,950, 12/2005-12/2007.
16. Co-PI: Improving the RUSLE (Revised Universal Soil Loss Equation) model using remote sensed crop residue maps. PI: Dr. Haibo Yao at the Institute for Technology

- Development, Stennis Space Center, National Aeronautics and Space Administration (NASA), US\$18,000 (sub-contract), 2006.
17. Academic Research Scientist: Land suitability and Impacts analysis. PI: Dr. George Gertner, University of IL at Urbana-Champaign, Great River Cooperative Ecosystem Studies Units (CESU) National Network through the U.S. Army Construction Engineering Research Laboratory (US Army CERL), US\$151,744, 12/2004-07/2006.
 18. Academic Research Scientist: Range&Impact area sampling protocols. PI: Dr. George Gertner, University of IL at Urbana-Champaign, Great River Cooperative Ecosystem Studies Units (CESU) National Network through the U.S. Army Construction Engineering Research Laboratory (US Army CERL), US\$77,947, 01/2004-12/2004.
 19. Academic Research Scientist: LCTA (Land Condition Trend Analysis) inventory methods analysis Using Historical Data: Part II. PI: Dr. George Gertner, University of IL at Urbana-Champaign, Great River Cooperative Ecosystem Studies Units (CESU) National Network through the U.S. Army Construction Engineering Research Laboratory (US Army CERL), US\$148,005, 11/2002 -03/2004.
 20. Academic Research Scientist: LCTA (Land Condition Trend Analysis) inventory methods analysis Using Historical Data: Part I. PI: Dr. George Gertner, University of IL at Urbana-Champaign, Great River Cooperative Ecosystem Studies Units (CESU) National Network through the U.S. Army Construction Engineering Research Laboratory (US Army CERL), US\$90,000, 12/2002 -12/2003.
 21. Academic Research Scientist: Scale and resolution effect and uncertainty analysis for ecological modeling and resource management. PI: Dr. George Gertner, University of IL at Urbana-Champaign (UIUC), UIUC \$50,000 and IL C-FAR (Council on Food and Agricultural Research), US\$18,000, 2002.
 22. Team Leader and Postdoctoral Research Associate: Error and uncertainty analysis for ecological modeling and simulation. PI: Dr. George Gertner, University of IL at Urbana-Champaign, US Strategic Environmental Research and Development Program (SERDP) and the U.S. Army Construction Engineering Research Laboratory, US\$1,491,195, 1998 – 2001.
 23. Research Scientist: Forest habitats classification using remotely sensed data. PI: Dr. Markus Holopainen, University of Helsinki, Finnish Foundation of Culture, about US\$70,000, 1996-1997.
 24. Research Scientist: A remote sensing and GIS based forest resources inventory and management system. PI: Dr. Simo Poso, University of Helsinki; Department of Finnish Agriculture and Forestry, About US\$40,000, 1996-1997.
 25. Ph.D. candidate: Optimization of forest resource inventory and monitoring using multi-source data. Center for International Mobility (CIMO) and Department of Finnish Agriculture and Forestry, Fellowship, about US\$48,000, Ph.D. study, 1992 – 1995.
 26. Team Leader: Forest growth modeling and management planning system for Pinus Massoniana. PI: Professor Zichun Cheng, Central South University of Forestry and Technology of China, Chinese Ministry of Forestry, about US\$20,000, 1985-1990.

E. Honors and Awards

1. Visiting professor, Central South University of Forestry and Technology, China (sabbatical: June 2013 – Dec. 2013)

2. Team Award: 2009 Research, Development, or Operational Support Team Award for research in support of the ATTACC (Army Training and Testing Area Carrying Capacity) program. The U.S. Army Construction Engineering Research Laboratory (US Army CERL). 2009.
3. The U.S. Army Engineer Research and Development Center (ERDC) 2003 Research and Development Achievement Award. The U.S. Army ERDC. 2003.
4. Team awards: 2002 US SERDP (Strategic Environmental Research and Development Program) Year Award: “Error and Uncertainty analysis for Ecological Modeling and Simulation”, US SERDP, 2002.
5. Team award: 2001 Research and Development Team Award for research in support of the ATTACC (Army Training and Testing Area Carrying Capacity) program. The U.S. Army CERL. 2001.
6. Finnish International Research Fellowship (1992-1995)
7. National recognized forest science and technology prize, Ministry of Forestry, China (1990)

F. Papers and Presentations at professional meetings (presenter underlined)

1. Cui, Y., Hua Sun, Guangxing Wang, Xiaoyu Xu, Sijun Lei. 2019. Comparative analysis of spectral unmixing methods for improvement of mapping vegetation cover for arid and semi-arid areas. *AAG 2019 annual meeting Washington DC April 3-April 7, 2019.*
2. Hua Sun, Qing Wang, Guangxing Wang, Hui Lin, Jiping Li, Siqi Zeng, Xiaoyu Xu, Langxiang Ren. 2018 Improving the Accuracy of Mapping Vegetation Cover for Monitoring Land Degradation and Desertification for arid and semi-arid areas Using images. *AAG 2018 annual meeting Boston April 9-April 15, 2018.*
3. Du, Kai, Hui Lin, Guangxing Wang, Jiangping Long, Jia Li and Zhaohua Liu. 2018. The impact of vertical wavenumber on stand height estimation by PolInSAR. The Fifth International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2018), Xi’An, China, June 18-20, 2018.
4. Cui, Yunlei, Hua Sun, Guangxing Wang, Xiaoyu Xu, Sijun Lei. 2018. A Novel Vegetation Cover Estimation Method for Desertification Area Based on Nonlinear Unmixing Analysis. The Fifth International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2018), Xi’An, China, June 18-20, 2018.
5. Ou, Guanglong, Chao Li, Anchao Wei, Yanyu Lv, Hexian Xiong, Hui Xu and Guangxing Wang. 2018. Improving Forest Aboveground Biomass Estimation by Incorporating Age Dummy Variable and Using Landsat 8 OLI Images for *Pinus densata* forests in Yunnan of Southwestern China. The Fifth International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2018), Xi’An, China, June 18-20, 2018.
6. Sun, Hua, Guangxing Wang, Qing Wang, Xiaoyu Xu and Lanxian Ren. 2018. Mapping vegetation cover for monitoring land degradation and desertification. The Fifth International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2018), Xi’An, China, June 18-20, 2018.

7. Chen, Chuanshi, Hua Sun, **Guangxing Wang**, Chengjie Li and Fugen Jiang. 2018. Improving Spatial Simulation of Urban Vegetation Carbon Density by Optimizing Local Sample Sizes. The Fifth International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2018), Xi'An, China, June 18-20, 2018.
8. Li, Jia, Hui Lin, **Guangxing Wang**, Jiangping Long, Kai Du and Chengjie Li. 2018. Impacts of Position Errors on Accuracy of Single Tree Volume Inversion of *Cunninghamia lanceolata* based on GF-2 Data.
9. Fan, Shudi, Zhenhua Liu, **Guangxing Wang**, and Yueming Hu. 2018. Down-scaling of land surface temperature using SMACC method. The Fifth International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2018), Xi'An, China, June 18-20, 2018.
10. Sun, H., G. Qie, **G. Wang**, Y. Tan, Y. Peng, Z. Ma, C. Luo. 2016. Increasing Accuracy of Mapping Urban Forest Carbon Density by Combining Spatial Modeling and Spectral Unmixing Analysis. *AAG 2016 annual meeting San Francisco March 28-April 2, 2016*.
11. Qie, G., **G. Wang**, M. Wang, Y. Tan. 2016. Improving the Accuracy of Mapping Urban Vegetation Carbon Density by combining Shadow Remove, Spectral Unmixing Analysis and Spatial Modeling. *AGU 2016 Fall meeting San Francisco Dec. 12-16, 2016*.
12. Wang, M., C. Xu, C.D. Allen, **G. Wang**, N.G. McDowell. 2016. Quantification of forest mortality and associated impacts on carbon storage by major disturbance types for the CONUS. *AGU 2016 Fall meeting San Francisco Dec. 12-16, 2016*.
13. Sun, H., Z. Ma, **G. Wang**, S. Rijal, G. Qie, and M. Wang. 2016. Desertification mapping and dynamic monitoring for Beijing-Tianjin sandstorm source control area using MODIS data and spectral mixture analysis. The Fourth International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2016), Guangzhou, China, July 4-6, 2016.
14. **Wang, G.** 2015. Applications and Challenges of Vegetation Optical Remote Sensing. *International Conference on Carbon Cycle and Global Change*. LinAn, Hangzhou, China. June 10-12, 2015.
15. Sun, H., G. Qie, **G. Wang**, Y. Tan, Y. Peng, Z. Ma, C. Luo. 2015. Improvement of City Vegetation Carbon Mapping by Combining Spectral Unmixing Analysis and Regression Modeling. *International Conference on Carbon Cycle and Global Change*. LinAn, Hangzhou, China. June 10-12, 2015.
16. Hua Sun, Zhonggang Ma, **Guangxing Wang**, Santosh Rijal, Guangping Qie, and Minzi Wang. 2015. Improvement of Desertification Mapping for Beijing-Tianjin Sandstorm Source Control Area Using Spectral Unmixing Analysis at Multi-resolution. *AAG 2015 annual meeting Chicago April 21-25, 2015*.
17. Guangping Qie, **Guangxing Wang**, Hua Sun, Yifang Tan, Yougui Peng, Minzi Wang. Improvement of City Forest Carbon Mapping by Combining Spectral Unmixing Analysis and Regression Modeling. *AAG 2015 annual meeting Chicago April 21-25, 2015*.
18. Sun, H., **G. Wang**, H. Lin, Z. Zang, H. Zhang, and H. Ju. 2014. Retrieval and accuracy assessment of stand parameters for Chinese fir plantations using terrestrial Laser Scanning. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2014 annual Conference*. March 22- 27, 2014, Louisville, KY.

19. Feng, G., **G. Wang**, and J. Schoof. 2014. Monitoring the drought intensity in Illinois with a combined index. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2014 annual Conference*. March 22- 27, 2014, Louisville, KY.
20. Wang, M. and **G. Wang**. 2014. Monitoring Wetland Changes of Dongting Lake, China. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2014 annual Conference*. March 22- 27, 2014, Louisville, KY.
21. Rijal, S., and **G. Wang**. 2014. Developing Image Derived Indices for quantifying Land Condition Recovery in a Military Disturbed Land - Fort Riley Installation, KS. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2014 annual Conference*. March 22- 27, 2014, Louisville, KY.
22. Feng, G., **G. Wang**, and J. Schoof. 2014. Monitoring the drought intensity in Illinois with a combined index. *AAG (Association of American Geographers) Annual Meeting held at Tampa, FL*, April 7 – 11, 2014.
23. Lin, H., **G. Wang**, H. Sun, and E. Yan. 2014. An introduction to the Research Center of Forestry Remote Sensing & Information Engineering, Central South University of Forestry and Technology, CHINA. *The Third International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2014)*, June 11-14, Changsha, Hunan, China.
24. Sun, H., **G. Wang** and H. Lin. 2014. Retrieval and accuracy assessment of stand parameters for Chinese fir plantations using terrestrial Laser Scanning. *The Third International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2014)*, June 11-14, Changsha, Hunan, China.
25. Chen, L., H. Lin, **G. Wang** and H. Sun. 2014. Spectral unmixing and improvement of endmember extraction for forest classification of Hunan using MODIS data. *The Third International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2014)*, June 11-14, Changsha, Hunan, China.
26. Yan, E., **G. Wang**, H. Lin and H. Sun. 2014. Multi-scale simulation and accuracy assessment of forest carbon using Landsat and MODIS data. *The Third International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2014)*, June 11-14, Changsha, Hunan, China.
27. Rijal, S., **G. Wang**, Heidi R. Howard, Alan B. Anderson, and Scott A. Tweddale. 2013. Assessment of military training induced impacts on land condition recovery of Fort Riley Installation by comparison with Konza Prairie ecosystem. *American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America Journal* 2013 conference, Nov. 3-6, 2013, Tampa, Florida.
28. **Wang, G.**, S. Rijal, H. Howard, A.B. Anderson, and S.A. Tweddale. 2013. Assessment of Fort Riley's land condition recovery under military training induced disturbance. *AAG (Association of American Geographers) Annual Meeting held at Los Angeles, CA*, April 9 – 13, 2013.
29. Rijal, S., **G. Wang**, H.R. Howard, A.B. Anderson, and S.A. Tweddale. 2012. Assessment of Fort Riley's land condition recovery under multiple disturbances due to military training, burning, and haying. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2012 Fall Conference*. Oct. 29-Nov. 1, 2012, Tampa, FL.
30. **Wang, G.**, M. Zhang, H. Lin, S. Zeng, and J. Li. 2012. Impacts of Plot Location Errors on Mapping and Up-scaling Aboveground Forest Carbon by Combining National Forest

- Inventory Plot Data and Landsat TM Images. *The Second International Workshop on Earth Observation and Remote Sensing Applications (EORSA2012)*. June 8-11, 2012, Shanghai, China.
31. **Wang, G.** 2012. Integration of geostatistics and remote sensing for modeling human-environment interactions and analyzing spatial uncertainty. *The Second International Workshop on Earth Observation and Remote Sensing Applications (EORSA2012)*. June 8-11, 2012, Shanghai, China. (Invited)
 32. **Wang, G., D.** Murphy, H. Howard, and A.B. Anderson. 2012. Spatial and temporal assessment of cumulative disturbance impacts on land condition of a military installation. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2012 Annual Conference*, March 16-23, 2012. Sacramento, CA.
 33. **Wang, G., M.** Zhang. 2011. Spatial uncertainty analysis for GIS and remote sensing mapping by combining sequential Gaussian co-simulation and polynomial regression. *AAG (Association of American Geographers) conference 2011 in Seattle*, April 12-16, 2011.
 34. **Howard, H.R., G. Wang,** S. Singer, and A.B. Anderson. 2011. Modeling and Prediction of Land Condition for Fort Riley Military Installation. *International Symposium on Erosion and Landscape Evolution*, Anchorage, Alaska, September 18-21, 2011.
 35. **Barrett, W.L., G. Wang.** 2011. Southern IL GIS Mapping for Next Generation 9-1-1 Based on NENA Standard Data Format. *West Lakes AAG 2011 conference in DePaul University*, Chicago, November 10-12, 2011.
 36. **Oller, A., G. Wang.** 2011. Automatic Mapping of Off-road Vehicle Trails and Paths Using Images at Fort Riley Installation, Kansas. *West Lakes AAG 2011 conference in DePaul University*, Chicago, November 10-12, 2011.
 37. Singer, S., **G. Wang,** H. Howard, and A.B. Anderson. 2010. Challenges and Methodological Development for Comprehensive Assessment of Environmental Quality: application to military land management. *American Geophysical Union (AGU) 2010 Fall Conference*, Dec. 13-17, 2010. San Francisco.
 38. **Fleming A. G. Wang,** R. McRoberts. 2010. Mapping and spatial uncertainty analysis of forest carbon: combining national forest inventory data and Landsat TM images. *IL GIS Association Fall conference*, October 20-21, 2010, Northern Illinois University, Naperville Campus.
 39. **Wang, G., M.** Zhang, G.Z. Gertner, T., Oyana, and R.E. McRoberts. 2010. Uncertainties of Mapping Forest Carbon Using National Forest Inventory and Remotely Sensed Data due to Plot Locations. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2010 Annual Conference*, April 28 – April 30, 2010, San Diego.
 40. **Wang, G., G.** Gertner, H. Howard, and A.B. Anderson. 2010. Determining Optimal Spatial Resolutions for GIS and Remote Sensing Mapping. *IL Geographic Information System Association (IL-GISA) Spring 2010 conference*, April 14-15, 2010. Champaign, IL.
 41. **KC, B. G. Wang,** and R. Duncan. 2010. Illinois Statewide Infrastructure Mapping: Educational Service (poster). *IL Geographic Information System Association (IL-GISA) Spring 2010 conference*, April 14-15, 2010. Champaign, IL.
 42. **Singer, S., G. Wang,** H. Howard, and A.B. Anderson. 2009. Assessment of cumulative training impacts for sustainable military land carrying capacity and environment:

- Quantifying quality of environment and landscape. ASA-CSSA-SSSA (*American Society of Agronomy, Crop Science Society of America, Soil Science Society of America*) Annual Meetings, Nov. 1-5, 2009, Pittsburgh, Pennsylvania.
43. Fan, C., **G. Wang**, G. Gertner, H. Howard, and A.B. Anderson. 2009. Lidar-derived DEMs and uncertainty analysis. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2009 Annual Conference*, March 9 – March 13, 2009, Baltimore.
 44. **Wang, G.**, M. Zhang, G.Z. Gertner, and R.E. McRoberts. 2009. Uncertainties due to Plot Locations for Mapping Forest Carbon Using National Forest Inventory Plot and Remotely Sensed Data. Extending Forest Inventory and Monitoring over Space and Time *International Union of Forest Research Organization (IUFRO) Division 4 meeting*. May 19-22 2009, Quebec City, Canada.
 45. **Wang, G.**, T. Oyana1, M. Zhang, S. Adu-Prah, S. Zeng, H. Lin, and J. She. 2008. A Methodology for Mapping and Uncertainty Analysis of Forest Carbon by Combining Images and National Forest Inventory Data. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2008 Annual Conference* April 28 – May 2, 2008 - Portland, OR.
 46. **Wang, G.**, G.Z. Gertner, A.B. Anderson, H. Howard, Gebhart, D. Althoff, T. Davis, and P. Woodford. 2008. Spatio-temporal modeling of soil erosion relevant vegetation cover factor by combining multi-temporal TM images and permanent plot data. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2008 Annual Conference* April 28 – May 2, 2008 - Portland, OR.
 47. **Wang, G.**, G. Gertner, A.B. Anderson, and H.R. Howard. 2007. Effect and uncertainty of spatial resolution on prediction and mapping of soil erosion using RUSLE. *The Annual Meeting of the West Lakes Division, Association of American Geographers*. Champaign, IL, Nov. 8-10, 2007.
 48. **Anderson, A.B.**, H. Howard, **G. Wang**, G. Gertner, and P. Woodford. 2007. Image-Aided Simulation of Cumulative Off-Road Traffic Impacts and Land Repair Identification. *2007 International Annual Meetings of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America* in New Orleans, Louisiana, Nov. 4-8, 2007.
 49. **Anderson, A.B.**, H. Howard, P. Ayers, **G. Wang**, G., Gertner. P. Woodford. 2007. Assessing Vehicle Impacts at U.S. Army Installations. *2007 International Annual Meetings of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America* in New Orleans, Louisiana, Nov. 4-8, 2007.
 50. **Wang, G.**, G.Z. Gertner, A.B. Anderson, and H. Howard. 2007. Comparison of methods for determining optimal spatial resolution for collection of ground data and remote sensing mapping of a soil erosion cover factor. *American Society for Photogrammetry and Remote Sensing (ASPRS) 2007 Annual Conference* May 7-11, 2007 - Tampa, FL.
 51. **Gertner, G. Z.**, **Wang, G.**, Anderson, A.B., Howard H. 2006. Sampling and Mapping Soil Erosion Cover Factor by Integrating Stratification and an Up-Scaling Method-Block Cokriging with Images. *International Conference on Ecological Informatics*. Santa Barbara, CA, December 3-7, 2006.
 52. **Wang, G.**, G.Z. Gertner, A.B. Anderson, and H. Howard. 2006. Assessment and implication for improvement of RTLA/LCTA plot inventory methods I: optimal spatial and temporal resolutions. *2006 International Annual Meetings of the American Society of*

- Agronomy, Crop Science Society of America, and Soil Science Society of America in Indianapolis, Indiana, Nov. 12-16, 2006.*
53. **Wang, G.**, G.Z. Gertner, A.B. Anderson, and H. Howard. 2006. Assessment and implication for improvement of RTLA/LCTA plot inventory methods II: optimal sample sizes. *2006 International Annual Meetings of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America in Indianapolis, Indiana, Nov. 12-16, 2006.*
 54. **Wang, G.**, and G.Z. Gertner. 2006. Image-aided spatial co-simulation algorithm for sampling design, mapping, up-scaling, and uncertainty analysis of natural resources, ecological and environmental systems. *Remote sensing and crop residue survey workshop*. New Orleans, USA, September 19, 2006.
 55. Fan, C., **G. Wang**, G.Z. Gertner, H. Yao, D. G. Sullivan, and M. Masters. 2006. Mapping Crop Residue Using Sequential Gaussian Co-simulation with Hyperion Images (poster). *Remote sensing and crop residue survey workshop*. New Orleans, USA, September 19, 2006.
 56. **Wang, G.**, A.B. Anderson, and G.Z. Gertner. 2006. Sampling design over time based spatial variability of images for mapping and monitoring soil erosion cover factor. *American Society of Photogrammetry and Remote Sensing (ASPRS) 2006 Annual Conference*, Reno, Nevada, May 1-6, 2006.
 57. **Wang, G.**, G.Z. Gertner, and A.B. Anderson. 2005. Towards optimization of sampling and mapping a soil erosion relevant cover factor by integrating stratification and cokriging with TM imagery. *American Society of Photogrammetry and Remote Sensing (ASPRS) 2005 Annual Conference*, Baltimore, Maryland, March 7-11, 2005.
 58. **Fang, S.**, G. Z. Gertner, **G. Wang**, and A. B. Anderson 2005. Spatial variability in aggregation based on geostatistical analysis. In: reviewed Proceedings entitled, *Seventeenth Annual Kansas State University Conference on Applied Statistics in Agriculture*.
 59. Gertner, G.Z., **G. Wang**, and A.B. Anderson. 2004. Optimal re-measure frequency for sampling and monitoring vegetation cover using multi-temporal TM images. *American Society of Photogrammetry and Remote Sensing (ASPRS) 2004 Annual Conference*, Denver, Colorado, May 25-28, 2004.
 60. **Yao, H.**, L. Tian, **G. Wang**, and I.A. Colonna. 2003. Soil Nutrient Mapping Using Aerial Hyperspectral Image and Soil Sampling Data – A Geostatistical Approach. Proceedings of 2003 *American Society of Agricultural and Biological Engineers (ASAE) Annual International Meeting*, Las Vegas, Nevada, USA, 27- 30 July 2003.
 61. **Wang, G.**, G.Z. Gertner, S Fang, and A.B. Anderson. 2003. A general methodology for spatial uncertainty analysis of remote sensing products. *American Society of Photogrammetry and Remote Sensing (ASPRS) 2003 Annual Conference – Technology: Converging at the Top of the World*, Anchorage, Alaska, May 5-9, 2003.
 62. **Wang, G.**, G.Z. Gertner, S. Wentz, and A.B. Anderson. 2001. Vegetation classification and accuracy assessment using image-aided sequential indicator co-simulation. *Proceedings (CD) of the American Society of Photogrammetry and Remote Sensing (ASPRS) 2001 Annual Conference*, April 23-27, America's Center St. Louis, Missouri, USA.

63. **Gertner, G.**, S., Fang, **G.**, **Wang** , and A.B., Anderson. 2001. An uncertainty analysis procedure for spatially joint simulation of multiple attributes. *Proceedings of the 13th annual Kansas State University Conference on applied statistics in agriculture*, April 30 - May 2, 2001.
64. **Wang, G.**, S. Fang, **G.Z. Gertner** & A.B. Anderson. 2000. Uncertainty propagation and partitioning in spatial prediction of topographical factor for RUSLE. *Proceedings of the 4th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences*, July 12-14, 2000, at Amsterdam, the Netherlands. p.717-722.
65. **Wang, G.**, G.Z. Gertner, V., Singh, and P., Parysow. 2000. Temporal and spatial prediction and uncertainty of rainfall-runoff erosivity for revised universal soil loss equation. *Modeling Complex Systems Conference*, July 31 – August 2, 2000, in Montreal, Canada.
66. **Gertner, G.Z.**, **G. Wang**, P. Parysow, & A.B. Anderson. 2000. Application and comparison of three spatial statistical methods for mapping and analyzing soil erodibility. *Proceedings of the Twelfth annual - Kansas State University Conference on applied statistics in agriculture*, April 30 - May 2, 2000 p.66-79.

G. Invited presentations

1. **Wang, G.** 2019. Feature space based indicator simulation for land use and land cover classification. *Xinan University of Forestry, Kunming, Yunnan of China*. In December of 2019.
2. **Wang, G.** 2019. Feature space based indicator simulation for land use and land cover classification. *Hunan University of Science and Technology, Xiangtan, Hunan, China*. In August of 2019.
3. **Wang, G.** 2018. Mapping vegetation cover for monitoring land degradation and desertification. *Hunan University of Science and Technology, Xiangtan, Hunan, China*. In August of 2018.
4. **Wang, G.** 2018. Writing skills for publications of SCI journal articles. *Central South University of Forestry and Technology, Changsha, Hunan of China*. In August of 2018.
5. **Wang, G.** 2018. Writing skills for publications of SCI journal articles. *Xinan University of Forestry, Kunming, Yunnan of China*. In August of 2018.
6. **Wang, G.** 2017. How to publish research articles in SCI journals. *Central South University of Forestry and Technology, Changsha, Hunan of China*. In May of 2017.
7. **Wang, G.** 2017. Challenges and Solutions of Optical Remote Sensing for mapping carbon density of forest ecosystems. *South China Agricultural University, Guangzhou, China*. In May of 2017.

8. **Wang, G.** 2017. Challenges and Solutions of Optical Remote Sensing for mapping carbon density of forest ecosystems. *Chinese Academy of Forestry, Beijing, China*. In July of 2017.
9. **Wang, G.** 2017. How to publish research articles in SCI journals. *Chinese Academy of Forestry, Beijing, China*. In July of 2017.
10. **Wang, G.** 2017. Challenges and Solutions of Optical Remote Sensing for mapping carbon density of forest ecosystems. Southwest Forestry University, *Kunming, Yunnan of China*. In July of 2017.
11. **Wang, G.** 2017. RUSLE and remote sensing based soil erosion modeling and risk assessment. *Zhejiang A&F University*. In August of 2017.
12. **Wang, G.** 2017. Improving selection of spectral variables for wetland vegetation classification using images. *Zhejiang A&F University*. In December of 2017.
13. **Wang, G.** 2016. Remote Sensing Based Monitoring of Ecosystems for Source Areas of Yangtze River, Yellow River and Lanchang River, Department of Science and Technology, Xining, Qinghai of China. July 11, 2016.
14. **Wang, G.** 2016. Challenges of Optical Remote Sensing for mapping carbon density of forest ecosystems. International Symposium of Global Change and Ecological Prediction, *Central South University of Forestry and Technology, Changsha, Hunan of China*. July 8-9, 2016.
15. **Wang, G.** 2016. How to get your articles published in SCI Journals. *South China Agricultural University, Guangzhou, China*. May, 2016.
16. **Wang, G.** 2015. Scientific writing in English. *Central South University of Forestry and Technology, China*. August 12, 2016.
17. **Wang, G.** 2015. Informatization in the US: Implications for Forestry Informatization of China. *The 3rd Chinese national forestry informatization symposium. Beijing Forestry University, Beijing, China*. July 9, 2015.
18. **Wang, G.** 2015. Geostatistics based forest carbon modeling: challenges of traditional methods applied to remote sensing mapping. *Chinese Academy of Forestry, Beijing, China*. June 25, 2015.
19. **Wang, G.** 2015. Scientific writing in English. *Chinese Academy of Forestry, Beijing, China*. June 24, 2015.
20. **Wang, G.** 2015. Applications and Challenges of Vegetation Optical Remote Sensing: Lidar Perspective. *Hunan University of Science and Technology, Xiangtan, Hunan, China*.
21. **Wang, G.** 2015. The Past, Present and Future of Forest Resource Remote Sensing. *The Institute of Forestry Survey and Design, Guangdong Province*. Jan. 12, 2015.

22. **Wang, G.** 2014. Forest Resource Management and Informatization in the US: Implications for China. Forestry Association of Hunan Province. Dec. 30, 2014.
23. **Wang, G.** 2014. Mapping human activity induced vegetation disturbance and soil erosion using RUSLE. *Central South University of Forestry and Technology*. July 10, 2014.
24. **Wang, G.** 2014. Mapping human activity induced vegetation disturbance and soil erosion using RUSLE. *Central South University of Forestry and Technology*. July 10, 2014.
25. Feng, G., **G. Wang**, and J. Schoof. 2014. Monitoring the drought intensity in Illinois with a combined index. *Zhejiang A&F University*. June 17, 2014.
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27. **Wang, G.** 2014. Global climate change and forest carbon modeling: Methods and Challenges. *Central South University of Forestry and Technology*. June 9, 2014.
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29. **Wang, G.** 2013. Informatization in the US: Implications for Forestry Informatization of China. *Central South University of Forestry and Technology*, November 14, 2013.
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31. **Wang, G.** 2012. Spatial uncertainty analysis methods and their applications for mapping natural resources. *Zhejiang A&F University*. May 28, 2012.
32. **Wang, G.**, M. Zhang, and L. Hui. 2011. Uncertainties of Mapping Forest Carbon due to Plot Locations by Combining National Forest Inventory and Remotely Sensed Data. *Central South University of Forestry and Technology*. July 15, 2011.
33. **Wang, G.**, M. Zhang, and H. Ge. 2011. Mapping and Spatial uncertainty analysis of forest carbon stocks. *Zhejiang A&F University*. July 22, 2011.
34. **Wang, G.**, M. Zhang, G.Z. Gertner, T., Oyana, and R.E. McRoberts. 2010. Uncertainties of Mapping Forest Carbon due to Plot Locations by Combining National Forest Inventory and Remotely Sensed Data. *Chinese Academy of Forestry*. June 21, 2010.
35. **Wang, G.**, M. Zhang, G.Z. Gertner, T., Oyana, and R.E. McRoberts. Uncertainties of Mapping Forest Carbon due to Plot Locations by Combining National Forest Inventory and Remotely Sensed Data. College of Natural Conservation, *Beijing Forestry University*, China. June 21, 2010.
36. **Wang, G.**, and M. Zhang. 2010. Forest Carbon Mapping and Spatial Uncertainty Analysis by Combining National Forest Inventory and Remotely Sensed Data. College of Natural Resources and Environment, *Zhejiang A&F University*, Linan, Zhejiang of China. June 17, 2010.
37. **Wang, G.**, T. Oyana1, M. Zhang, S. Adu-Prah, S. Zeng, H. Lin, and J. She. 2008. A Methodology for Mapping and Uncertainty Analysis of Forest Carbon by Combining Satellite Images and National Forest Inventory Data. Forest Remote Sensing and Information Engineering Research Center, *Central South University of Forestry and Technologies*. June 12, 2008.

38. **Wang, G.** 2007. Past, present, and future for remote sensing of forest resources. College of Natural Resources and Environment, Zhejiang Forestry University, Linan, *Zhejiang of China*. June 11, 2007.
39. **Wang, G.** 2007. Past, present, and future for remote sensing of forest resources. Tropical Forest Research Institute, *Chinese Academy of Forestry*, Guangzhou, Guangdong of China. June 6, 2007.
40. **Wang, G.** 2007. Past, present, and future for remote sensing of forest resources. College of Resources and Environment, *Central South University of Forestry and Technologies*. May 28, 2007.
41. **Wang, G.** 2006. Improvement in sampling, inventory, estimation, and mapping of forests and natural resources by spatial co-simulation. Department of Forestry, Wildlife and Fisheries, *University of Tennessee*, March 15, 2006.
42. **Wang, G.** 2002. Geostatistical methods and comparison to traditional classification and regression for modeling and mapping forest and natural resources. Department of Forest Resources Management, *University of British Columbia*, May 23, 2002.
43. **Wang, G.** 2002. Improvement in Image Aided Mapping and Accuracy Assessment of Vegetation Cover. Raytheon - *US Geological Survey, Earth Resources Observation and Science Center*, April 15, 2002.
44. **Wang, G.** 2001. Mapping and spatial uncertainty of multiple vegetation variables by joint co-simulation with TM image. Department of Forestry, *University of Kentucky*, Nov. 7, 2001.

V. PUBLICATIONS AND CREATIVE WORKS

A. Books

1. **Wang, G.**, and Q. Weng (Eds.). 2013. Remote Sensing of Natural Resources. CRC Press, Taylor & Francis Group. Boca Raton, FL. 532 p.
2. **Wang, G.**, S. Poso, & M. Waite. 1997. SMI user's Guide for Forest Inventory and Management. Note: SMI is an abbreviation of Satelliittikuvat Metsien Inventorinnissa in Finnish – remote sensing based forest inventory and management in English. University of Helsinki, Department of Forest Resource Management, PUBLICATIONS 16. ISBN 951-45-7841-4. 336 p.
3. Cheng, Z., L. Chen, **G. Wang**, S. Zeng, and S. Fang. 1992. Forest growth and yield modeling and management planning system for Pinus Massoniana. Chinese Forestry Press, Liu-hai-hu-tong 7, Beijing. 183 p. (in Chinese).
4. Cheng, Z., Y. Zhou, and **G. Wang**. 1990. Multivariate analysis and applied computer programs. Chinese Forestry Press, Liu-hai-hu-tong 7, Beijing. 576 p. (in Chinese).

B. Articles in Professional Journals (Peer-reviewed)

Published

1. Long, S., S. Zeng, F. Liu, **G. Wang**. 2020. Influence of slope, aspect and competition index on the H-DBH relationship of *Cyclobalanopsis glauca* trees for improving prediction of H in mixed forests. *Silva Fennica* (accepted).
2. Zhan, Y., F. Liu, X. Peng, **G. Wang**. 2020. The effects of different fire intensities on soil

properties during recovery stage of forests in subtropical China. *Journal of Soil and Water Conservation* (accepted)

3. Zhang, F., **G. Wang**, Yueming Hu, Liancheng Chen, A-xing Zhu. 2020. Design of an Integrated Remote Sensing and Ground Sensing Monitoring System for Accessing Farmland Quality. *Sensors* 20, 336; doi:10.3390/s20020336
4. Wang, Q., H. Sun, R. Li., **G. Wang**. 2019 A new stochastic simulation algorithm for image-based classification: Feature-space indicator simulation. *ISPRS Journal of Photogrammetry and Remote Sensing*. 152: 145-165.
5. Yu, H., R Li, **G. Wang**, Q Wang. 2019. Current development of landscape geochemistry with support of geospatial technologies: A review. *Critical Reviews in Environmental Science and Technology* 49(9): <https://doi.org/10.1080/10643389.2018.1558890>.
6. Mundia, C.W., Silvia Secchi, Kofi Akamani, **G. Wang**. 2019. A Regional Comparison of Factors Affecting Global Sorghum Production: The Case of North America, Asia and Africa's Sahel. *Sustainability* 2019, 11(7), 2135; <https://doi.org/10.3390/su11072135>.
7. Yu, H., Xiangmeng Liu, Bo Kong, Ruopu Li, **G. Wang**. 2019. Landscape ecology development supported by geospatial technologies: A review. *Ecological informatics*. 51:185-192.
8. Yu, H., Bo Kong, Zheng-Wei He, **G. Wang**, Qing Wang. 2019. The potential of integrating landscape, geochemical and economical indices to analyze watershed ecological environment. *Journal of Hydrol. Earth Syst. Sci.* 124298.\.
9. Pan, Z., **G. Wang**, Yueming Hua, Bin Cao. 2019. Characterizing urban redevelopment process by quantifying thermal dynamic and landscape analysis. *Habitat International* 86: 61–70.
10. Pan, Z., Y. Hu, **G. Wang**. 2019. Detection of short-term urban land use changes by combining SAR time series images and spectral angle mapping. *Frontiers of Earth Science*. 1–15.
11. Liu, Q., L Fu, **G Wang**, S Li, Z Li, E Chen, Y Pang, K Hu. 2019. Improving Estimation of Forest Canopy Cover by Introducing Loss Ratio of Laser Pulses Using Airborne LiDAR. *IEEE Transactions on Geoscience and Remote Sensing* 58 (1), 567-585.
12. Zhang, J., Chi Lu, Hui Xu, and **G. Wang**. 2019. Estimating aboveground biomass of *Pinus densata*-dominated forests using Landsat time series and permanent sample plot data. *J. For. Res.* (2019) 30(5):1689–1706, <https://doi.org/10.1007/s11676-018-0713-7>.
13. Cui, Y., Hua Sun, **G. Wang**, Chengjie Li and Xiaoyu Xu. 2019. A Probability-Based Spectral Unmixing Analysis for Mapping Percentage Vegetation Cover of Arid and Semi-Arid Areas. *Remote Sens.* 11, 3038; doi:10.3390/rs11243038.
14. Yan, E., Yunlin Zhao, Hui Lin, **G. Wang** and Dengkui Mo. 2019. Improving the Estimation of Forest Carbon Density in Mountainous Regions Using Topographic Correction and Landsat 8 Images. *Remote Sens.* 11, 2619; doi:10.3390/rs11222619.
15. Long, J., Hui Lin, **G. Wang**, Hua Sun, Enping Yan. 2019. Mapping Growing Stem Volume of Chinese Fir Plantation Using a Saturation-based Multivariate Method and Quad-polarimetric SAR Images. *Remote Sens.* 2019, 11, 1872; doi:10.3390/rs11161872.
16. Peng, Y., Li Zhao, Yueming Hu, **G. Wang**, Lu Wang and Zhenhua Liu. 2019. Prediction of Soil Nutrient Contents Using Visible and Near-Infrared Reflectance Spectroscopy. *ISPRS Int. J. Geo-Inf.* 8, 437; doi:10.3390/ijgi8100437.
17. Liu, S., Yiping Peng, Ziqing Xia, Yueming Hu, **G. Wang**, A-Xing Zhu. 2019. The GA-

- BPNN-Based Evaluation of Cultivated Land Quality in the PSR Framework Using Gaofen-1 satellite data. *Sensors* 19, 5127; doi:10.3390/s19235127.
18. Xia, Z., Yiping Peng, Shanshan Liu, Zhenhua Liu, **G. Wang**, A-Xing Zhu and Yueming Hu. 2019. The Optimal Image Date Selection for Evaluating Cultivated Land Quality Based on Gaofen-1 Images. *Sensors* 19, 4937; doi:10.3390/s19224937.
 19. Liu, Z. Y. Lu, Y. Peng, L. hao, **G. Wang**, Y. Hu. 2019. Estimation of Soil Heavy Metal Content Using Hyperspectral Data. *Remote Sens.* 2019, 11, 1464; doi:10.3390/rs11121464.
 20. Wang, M, Q. Liu, L. Fu, **G. Wang**, X. Zhang. 2019. Airborne LIDAR-Derived Aboveground Biomass Estimates Using a Hierarchical Bayesian Approach. *Remote Sens.* 2019, 11, 1050; doi:10.3390/rs11091050.
 21. Ou, G., Y. Lv, H. Xu, **G. Wang**. 2019. Improving Forest Aboveground Biomass Estimation of *Pinus densata* Forest in Yunnan of Southwest China by Spatial Regression using Landsat 8 Images. *Remote Sens.* 2019, 11, 2750; doi:10.3390/rs11232750.
 22. Ou, G., Chao Li, Yanyu Lv, Anchao Wei, Hexian Xiong, Hui Xu, **G. Wang**. 2019. Improving Aboveground Biomass Estimation of *Pinus densata* Forests in Yunnan Using Landsat 8 Imagery by Incorporating Age Dummy Variable and Method Comparison. *Remote Sens.* 2019, 11, 738; doi:10.3390/rs11070738.
 23. Liu, P., Z Liu, Y Hu, Z Shi, Y Pan, L Wang, **G Wang**. 2019. Integrating a Hybrid Back Propagation Neural Network and Particle Swarm Optimization for Estimating Soil Heavy Metal Contents Using Hyperspectral Data. *Sustainability* 11 (2), 419
 24. Ameer H. Al-Ahmadi, Arjun Subedi, **G. Wang**, Ruplal Choudhary, Ahmad Fakhoury, Dennis G. Watson. 2018. Detection of Charcoal Rot (*Macrophomina phaseolina*) Toxin Effects in Soybean (*Glycine max*) Seedlings using Hyperspectral Spectroscopy. *Computers and Electronics in Agriculture* 150(2018) 188-195.
 25. Sun, H., Qing Wang, **Guangxing Wang***, Hui Lin, Peng Luo, Jiping Li, Siqu Zeng, Xiaoyu Xu, Langxiang Ren. 2018. Optimizing kNN for Mapping Vegetation Cover of Arid and Semi-arid Areas using Landsat image. *Remote Sensing* 10(8), 1248; <https://doi.org/10.3390/rs10081248>
 26. Gao, Y., Dengsheng Lu, Guiying Li, **G. Wang**, Qi Chen, Lijuan Liu, Dengqiu Li. 2018. Comparative Analysis of Modeling Algorithms for Forest Aboveground Biomass Estimation in a Subtropical Region. *Remote Sensing* 10, 627; doi:10.3390/rs10040627.
 27. Rijal, S., **G. Wang**, Philip B. Woodford, Heidi R. Howard, J.M. Shawn Hutchinson, Stacy Hutchinson, Justin Schoof, Tonny J. Oyana, Ruopu Li, Logan O. Park. 2018. Detection of gullies in Fort Riley Military Installation using LiDAR derived high resolution DEM. *Journal of Terramechanics* 77, 15-22.
 28. Lu, W., D. Lu, **G. Wang**, J. Wu, J. Huang, and G. Li. 2018. Examining Soil Organic Carbon Distribution and Dynamic Change in a Hickory Plantation Region with Landsat and Ancillary Data. *Catena* 165, 576-589. <https://doi.org/10.1016/j.catena.2018.03.007>.
 29. Yu, H., Bo Kong, **Guangxing Wang**, Hua Sun, Lu Wang. 2018. Hyperspectral Data-Based Prediction of Ecological Characteristics for Grass Species of Alpine Grasslands. *Rangelands* <https://doi.org/10.1071/RJ17084>.
 30. Yu, H., B Kong, **G Wang**, R Du, G Qie. 2018. Prediction of soil properties using a hyperspectral remote sensing method. *Archives of Agronomy and Soil Science* 64 (4), 546-559.

31. Fu, L., Qingwang Liu, Hua Sun, Zengyuan Li, Erxue Chen, Yong Pang, Shouzheng Tang, Xinyu Song, **Guangxing Wang***. 2018. Developing a system of compatible individual tree diameter and aboveground biomass prediction models using error-in-variable regression and airborne LiDAR data. *Remote Sensing* 10, 325; doi:10.3390/rs10020325.
32. Zhang, M., H Lin, **G Wang**, H Sun, J Fu. 2018. Mapping Paddy Rice Using a Convolutional Neural Network (CNN) with Landsat 8 Datasets in the Dongting Lake Area, China. *Remote Sensing* 10 (11), 1840.
33. Song, R., H. Lin*, **G. Wang***, E. Yan. 2018. Improving selection of spectral variables for vegetation classification of East Dongting Lake, China, using Gaofen-1 images. *Remote Sensing* 10(1), 50; doi:[10.3390/rs10010050](https://doi.org/10.3390/rs10010050).
34. Liu, Z. M. Hu, Y. Hu, **G. Wang**. 2018. Estimation of Net Primary Productivity of Forests by modified CASA model and remotely sensed data. *International Journal of Remote Sensing* 39(4), 1092-1116.
35. Liao, J., Yueming Hu, Hongliang Zhang, Luo Liu, Zhenhua Liu, Zhengxi Tan and **Guangxing Wang**. 2018. A Rice Mapping Method Based on Time-Series Landsat Data for the Extraction of Growth Period Characteristics. *Sustainability* 2018, 10(7), 2570; <https://doi.org/10.3390/su10072570>.
36. Zhao, L., YM Hu, W Zhou, ZH Liu, YC Pan, Z Shi, L Wang, **GX Wang**. 2018. Estimation Methods for Soil Mercury Content Using Hyperspectral Remote Sensing. *Sustainability* 10 (7), 2474.
37. Fan, SD, YM Hu, L Wang, ZH Liu, Z Shi, WB Wu, YC Pan, **G. Wang**, et al. 2018. Improving Spatial Soil Moisture Representation through the Integration of SMAP and PROBA-V Products. *Sustainability* 10 (10), 3459.
38. Xu, X. H. Sun, **G. Wang***, H. Lin, Y. Cui. 2018. Mapping leaf area index using GF-1 and Landsat 8 images for Kangbao County. *Journal of Central South University of Forestry & Technology* 38(1).
39. Rijal, S., **G. Wang***, P.B. Woodford, H.R. Howard, J. Schoof, T. Oyana, L.O. Park, and R. Li. 2017. Comparison of military and non-military land condition using an image derived soil erosion cover factor. *Journal of Soil and Water Conservation* 72(5):425-437.
40. Fu, L., W. Xiang, **G. Wang**, K. Hao, S. Tang. 2017. Additive crown width models comprising nonlinear simultaneous equations for Prince Rupprecht larch (*Larix principis-rupprechtii*) in northern China. *Trees* (2017) 31(6):1959–1971, DOI 10.1007/s00468-017-1600-0.
41. Xiang, J., R. Li, **G. Wang**, G. Qie, Q. Wang, L. Xu, M. Zhang and M. Tang. 2017. Modeling Urban PM_{2.5} Concentration by Combining Regression Modeling and Spectral Unmixing Analysis. *Water, Air & Soil Pollution* 228(7), 250.
42. Huan Yu, Bo Kong, **Guangxing Wang**, Rongxiang Du, and Guangping Qie. 2017. Prediction of Soil Properties Using a Hyperspectral Remote Sensing Method. *Archives of Agronomy and Soil Science*, DOI: 10.1080/03650340.2017.1359416.
43. Zhu, J., Z. Huang, H. Sun and **G. Wang***. 2017. Mapping forest ecosystem biomass density for Xiangjiang River Basin by combining plot and remote sensing data and comparing spatial extrapolation methods. *Remote Sensing* 9(3), 241; doi:10.3390/rs9030241.
44. Fu, L., R.P. Sharma, **G. Wang**, and S. Tang. 2017. Modelling a system of nonlinear

additive crown width models applying seemingly unrelated regression for Prince Rupprecht larch in northern China. *Forest Ecology and Management*, 386, 71-80. <http://dx.doi.org/10.1016/j.foreco.2016.11.038>.

45. Fu, L., H. Zhang, R.P. Sharma, L. Pang, **G. Wang***. 2017. A generalized nonlinear mixed-effects height to crown base model for Mongolian oak in northeast China. *Forest Ecology and Management*, 384, 34-43. <http://dx.doi.org/10.1016/j.foreco.2016.09.012>. *
46. Liu, F., **G. Wang***, X. Zhou, and P. Luo. 2017. Modeling the Relationship of Soil Water Repellency with Soil Moisture for *Pinus massoniana* and *Schima superb* Secondary Forests. *Journal of Soil and Water Conservation* 72(4), 308-316.
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52. Lu, D., Q. Chen, **G. Wang***, L. Liu, and E. Moran. 2016. A Survey of Remote Sensing-Based Aboveground Biomass Estimation Methods. *International Journal of Digital earth*, 9(1), 63-105.
53. Fu, L., Y. Lei, **G. Wang***, et al. 2016. Comparison of seemingly unrelated regressions with errors-in-variables models for developing a system of nonlinear additive biomass equations. *Trees – structure and function*, 30 (3) :839-857.
54. Sun, H., G. Qie, **G. Wang***, Y. Tan, J. Li, Y. Peng, Z. Ma and C. Luo. 2015. Increasing the Accuracy of Mapping Urban Forest Carbon Density by Combining Spatial Modeling and Spectral Unmixing Analysis. *Remote Sensing* 2015, 7, 15114-15139; doi:10.3390/rs71115114.
55. Yan, E., **G. Wang***, H. Lin, C. Xia, and H. Sun. 2015. Phenology-assisted classification of vegetation cover types in Northeast China with MODIS NDVI time series. *International Journal of Remote Sensing* 36(2), 489-512.
56. Sun, H., **G. Wang***, H. Lin, J. Li, H. Zhang, H. Ju. 2015. Retrieval and accuracy assessment of stand parameters for Chinese fir plantations using terrestrial Laser Scanning. *IEEE Geoscience and Remote Sensing Letters* VOL. 12, NO. 9, SEPTEMBER 2015.

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62. Tan, Y., G. Qie., M. Wang, **G. Wang**, et al. 2014. Comparison of methods for mapping Shenzhen City forest carbon density. *Journal of Central South University of Forestry & Technology* 34(11):140-144.
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64. Fleming, A. **G. Wang**, R. McRoberts. 2014. Comparison of methods toward multi-scale forest carbon mapping and spatial uncertainty analysis: combining national forest inventory plot data and landsat TM images. *European Journal of Forest Research*, DOI 10.1007/s10342-014-0838-y.
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68. Gao, J., G. Lei, X. Xu, **G. Wang**. 2014. Can ¹³C abundance, water-soluble carbon and light fraction carbon as potential indicators of soil organic carbon dynamics in alpine wetlands? *Catena*, **119**, 21–27.
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119. **Wang, G.,** S. Poso, M. Waite, & M. Holopainen. 1998. Use of Digitized Aerial Photographs and Local Operation for Classification of Stand Development Classes. *Silva Fennica*, **32(3)**, 215-225.
120. Holopainen, M. & **G. Wang.** 1998a. Calibration of digital aerial photographs for forest inventory and monitoring. *International Journal of Remote Sensing*, **19(4)**, 677-696.
121. Holopainen, M. & **G. Wang.** 1998b. Accuracy of digitized aerial photographs for assessing forest habitats at plot level. *Scandinavian Journal of Forest Research*, **13**, 499-508.
122. **Wang, G.** 1990. Forest growth modeling for Chinese fir plantations. *Collection of Excellent Theses for M.Sc. Degrees, Journal of Central South Forestry University*, **1**, 79-91. (in Chinese).
123. Cheng, Z. & **G. Wang.** 1986a. A new method of stem analysis on longitudinal section of tree. *Journal of Central South Forestry University*, **6(2)**, 111-120. (in Chinese).
124. Cheng, Z. & **G. Wang.** 1986b. A mathematical model of mean dominant height for Chinese fir. *Forest Science and Technology of China*, **2**, 4-7. (in Chinese).
125. **Wang, G.** 1985. Error analysis of regression estimation. *Forest Resource Management of China*, **5**, 30-34. (in Chinese).

C. Creative Contributions

D. Dissertation

- Wang, G.** 1996. An expert system for forest resource inventory and monitoring using multi-source data. University of Helsinki, Department of Forest Resource Management, PUBLICATIONS 10 (Ph.D. dissertation), ISBN 951-45-7289-0. 173 p.

E. Chapters in Professional books

1. **Wang, G.,** M. Zhang. 2014. Upscaling with conditional co-simulation for mapping aboveground forest carbon. In Q. Weng (Ed.) *Scale issue in remote sensing*. John Wiley and Sons. Hoboken, New Jersey. Pp. 108-125.

2. **Wang, G.,** G.Z. Gertner. 2013. Remote Sensing application for sampling design of natural resources. In G. Wang, and Q. Weng (Eds.) *Remote Sensing of Natural Resources*. CRC Press, Taylor & Francis Group. Boca Raton, FL. Pp. 23-44.
3. **Wang, G.,** G.Z. Gertner. 2013. Spatial uncertainty analysis when mapping natural resources using remotely sensed data. In G. Wang, and Q. Weng (Eds.) *Remote Sensing of Natural Resources*. CRC Press, Taylor & Francis Group. Boca Raton, FL. Pp. 89-112.
4. Singer, S. **G. Wang,** H.R. Howard, and A.B. Anderson. 2013. Assessing Military Training Induced Landscape Fragmentation and Dynamics of Fort Riley Installation Using Spatial Metrics and Remotely Sensed Data In G. Wang, and Q. Weng (Eds.) *Remote Sensing of Natural Resources*. CRC Press, Taylor & Francis Group. Boca Raton, FL. Pp. 209-225.
5. Fan, C., **G. Wang,** G.Z. Gertner, H. Yao, D.G. Sullivan, and M. Masters. 2013. Mapping and Uncertainty Analysis of Crop Residue Cover Using Sequential Gaussian Co-simulation with QuickBird Images. In G. Wang, and Q. Weng (Eds.) *Remote Sensing of Natural Resources*. CRC Press, Taylor & Francis Group. Boca Raton, FL. Pp. 355-376.

F. Popular and Creative Writing

G. Book Reviews

H. Peer-Reviewed articles in proceedings

1. Li, J., H Lin, **G Wang,** E Yan, J Long, K Du, C Li. 2018 Impacts of Position Errors on Accuracy of Single Tree Volume Inversion of *Cunninghamia lanceolata* based on GF-2 Data. 2018 Fifth International Workshop on Earth Observation and Remote Sensing Applications (EORSA), June 10-20. Xian, China.
2. K Du, H Lin, **G Wang,** J Long, J Li, Z Liu. 2018. The Impact of Vertical Wavenumber on Forest Height Inversion by PolInSAR. 2018 Fifth International Workshop on Earth Observation and Remote Sensing Applications (EORSA), June 10-20. Xian, China.
3. Lin, H., Yan, E., **Wang, G.,** & Song, R. (2014, June). Analysis of hyperspectral bands for the health diagnosis of tree species. In Earth Observation and Remote Sensing Applications (EORSA), 2014 3rd International Workshop on (pp. 448-451). 978-1-4799-4184-1/14/\$31.00 ©2014 IEEE.
4. Yan, E., Lin, H., **Wang, G.,** & Sun, H. (2014, June). Multi-scale simulation and accuracy assessment of forest carbon using Landsat and MODIS data. In Earth Observation and Remote Sensing Applications (EORSA), 2014 3rd International Workshop on (pp. 195-199). 978-1-4673-1946-1/12/\$31.00 ©2014 IEEE.
5. Chen, L., Lin, H., **Wang, G.,** Sun, H., & Yan, E. (2014, June). Spectral unmixing of MODIS data based on improved endmember purification model: application to forest type identification. In Earth Observation and Remote Sensing Applications (EORSA), 2014 3rd International Workshop on (pp. 234-238). 978-1-4673-1946-1/12/\$31.00 ©2014 IEEE.
6. Hu, J., Zhang, H., Ling, C., Lin, H., Sun, H., & **Wang, G.** (2014, June). Wetland information extraction of the East Dongting Lake using mean shift segmentation. In Earth

Observation and Remote Sensing Applications (EORSA), 2014 3rd International Workshop on (pp. 479-483). 978-1-4799-4184-1/14/\$31.00 ©2014 IEEE.

7. Anderson, A.B., P.D. Ayers, **G. Wang**, G.Z. Gertner, H.R. Howard, S. Fang, and P. Woodford. 2007. Assessing Vehicle Impacts at Multiple Scales on US Army Installations Using Fort Riley, Kansas as an Example. In: *Innovations in Terrain and Vehicle Systems in the Joint North American, Asia-Pacific ISTVS Conference and Annual Meeting of the Japanese Society for Terramechanics*, Fairbanks, AK, 23-26 June 2007.
8. **Wang, G.**, M. Holopainen, & E. Lukkarinen. 1998. Data fusion of Landsat TM and IRS images in forest classification. *Integrated Tools for Natural Resource Inventories in the 21st Century – Proceedings of the International Conference on the Inventory and Monitoring of Forested Ecosystems*. August 16-20, 1998, Boise, Idaho, USA. p.654-663.
9. **Wang, G.** 1996. An expert system for forest resource inventory and monitoring in the frame of multi-source data. *Caring for the Forest: New Thrusts in Forest Inventory*, Proceedings of the Subject Group S4.02-00 "Forest Resource Inventory and Monitoring" and Subject Group S4.12-00 "Remote Sensing Technology" Volume I, *IUFRO XX World Congress* 6-12 August 1995, Tampere, Finland. EFI Proceedings No. 7:171-183.
10. Cheng, Z., L. Chen, **G. Wang**, S. Zeng, and S. Fang. 1996. Study on the simulation of forest management system for Pinus Massoniana. *IUFRO XX World Congress* 6-12 August 1995, Tampere, Finland.
11. Holopainen, M. & **G. Wang**. 1996a. Digitized aerial photographs for assessing forest bio-diversity. *Proceedings for Assessment of Bio-diversity for improved Forest Planning*. Monte Verita Conference, 7-11 October 1996.
12. Holopainen, M. & **G. Wang**. 1996a. Regression Calibration of Digitized Aerial Photos. *Proceedings for Application of Remote Sensing in European Forest Monitoring*. October 14-16, 1996, Vienna, Austria.

H. Technical reports

1. **Wang, G.**, G.Z., Gertner, A.B. Anderson, and H. Howard. 2006. Sampling and mapping soil erosion cover factor for Fort Richardson, Alaska: Integrating stratification and an up-scaling method. *US Army Corps of Engineers, Engineer Research and Development Center, Construction Engineering Research Laboratories, ERDC/CERL TR-06-5*.
2. **Wang, G.**, G., Gertner, V., Singh, S., Shinkareva, P. Parysow, and A.B., Anderson. 2001. Spatial and temporal prediction and uncertainty analysis of rainfall and runoff erosivity for revised universal soil loss equation. *US Army Corps of Engineers, Engineer Research and Development Center, Construction Engineering Research Laboratories, ERDC/CERL TR-01-39*.
3. Xu, C., G. Z. Gertner, and **G. Wang**. 2008. Uncertainty Analysis for the LIDAR-based Forest Inventory System. *ImageTree Corporation Report*.

VI. TEACHING EXPERIENCE

A. Teaching Interests and Specialties

Undergraduate courses

Introduction to GIS (Geog 401) (Spring of 2008 - 2014)

Spatial analysis (Geog 404) (Spring 2015 - 2019)
Introduction to remote sensing (Geog 406) (Fall of 2007 – 2012, 2014 - 2019)
Advanced remote sensing (Geog 408) (Spring of 2008 - 2019)
Cartographic design (Geog 416) (Fall of 2007 – 2012, 2014 - 2019)
Reading in Geography (Geog 490, Fall 2008, Summer 2009, Spring 2010 (2), Summer 2010 (1), Fall 2012 (1), Spring 2014(1), Fall 2014(2), Spring 2015(1))

Graduate courses

Seminars in Geography and environmental research [Geog 501, Spring 2012 (2), Spring 2013 (2), Spring 2014(1), Spring 2015(3), Spring 2016(1), Spring 2018 (2)]
Individual Research [ERP 599, Summer of 2009 , Fall 2009 (1), Summer 2010 (1), Spring 2014(1)]
GIS Portfolio/Capstone Project [Geog 528, Summer 2019 (1)]
Independent studies [Geog 591, Spring 2010 (1), Summer 2010(1), Summer of 2011 (2), Fall 2011 (1), Spring 2012 (1), Summer 2012 (4), Fall 2012(2), Spring 2013(1), Summer 2013(3), Spring 2014(1), Summer 2014(2), Spring 2015(1), Summer 2015(1), Fall 2015(1), Spring 2016(1), Summer 2016(1), Fall 2016(2), Spring 2017(2), Summer 2017(1), Spring 2018(1), Summer 2018 (2), Spring 2019(1), Summer 2019 (2)]
Research GIS [Geog 593B, Spring 2016 (1)]
Seminar in GIS and Environmental Modeling [ERP 595, Spring 2009, Spring 2010 (1)]
Thesis [Geog 599 - 709, Fall 2009 (3), Spring 2010 (3), Spring 2011(2), Fall 2011(1), Spring 2012 (2), Summer 2012 (1), Fall 2012 (1), Spring 2013(1), Fall 2013(1), Summer 2013 (1), Spring 2014(1), Summer 2014(2), Fall 2014(1), Spring 2015(1), Summer 2015(1), Fall 2015(3), Spring 2016(3), Summer 2016(1), Fall 2016(2), Spring 2017(1), Fall 2018(2), Spring 2019(2), Fall 2018(1), Spring 2019(2)]
Dissertation [ERP 600 – 702: Fall 2013(2), Spring 2014(2), Summer 2014(2), Fall 2014(3), Spring 2015(3), Summer 2015(3), Fall 2015(4), Spring 2016(2), Summer 2016(1), Fall 2016(4), Spring 2017(4), Summer 2017 (2), Fall 2017(4), Spring 2018 (3), Summer 2018 (2), Fall 2018 (3), Spring 2019(1)]

Workshop

Global Positioning System (GPS) workshop at the Department of Civil and Environmental Engineering (one week - Summer 2011)

C. Teaching and training grants

D. Teaching Awards and Honors

- Distinguished visiting professor, Central South University of Forestry and Technology, China (sabbatical: June 2013 – Dec. 2013)
- A prize for excellence in teaching, Central South University of Forestry and Technology, China (1987-1988)

E. Current graduate faculty status

Direct Dissertation Status in SIUC since Fall 2007

F. Names of Students who have completed Master's Theses and Doctoral Dissertations under my direction in SIUC

Master's students who completed

- Shishir Manandhar, Micheal Burk, Brando Polk, Diane Benbella, Tarig Mohamed, Ms. Ashley Suiter, Mr. Kushendra Shah, Ms. Dana Murphy, Mr. William Barrett, Mr. Adam Oller, Mr. Andrew Lawrence Fleming, Mr. Steve Singer, Ms. Binita K.C.

Ph.D. students who completed

- Dr. Santosh Riji, Dr. Minzi Wang, Dr. Qing Wang, Dr. Clara Mundia, Dr. Guangping Qie

VII. PROFESSIONAL SERVICE

A. Conference organization

- *Program Committee Co-chair*, The Fifth International Workshop on Earth Observation and Remote Sensing Applications 2018 (EORSA2018) held in Xian, Shangxi of China, on June 18-20, 2018. The Overall Theme “Ecological Civilization and Sustainable Development - Contributions of Remote Sensing” <http://eorsa2018.org/>
- *Program Committee Co-chair*, The Fourth International Workshop on Earth Observation and Remote Sensing Applications 2016 (EORSA2016) held in Guangzhou, Guangdong of China, on July 4-6, 2016. The Overall Theme “Societal and Economic Benefits of Earth Observation Technologies” <http://eorsa2016.org/>
- As an *Organizing Committee Co-Chair* and a *Program Committee Co-chair*, I organized the Third International Workshop on Earth Observation and Remote Sensing Applications 2014 (EORSA2014) held in Changsha, Hunan of China, on June 11-14, 2014. The Overall Theme of the conference was “Global Change and Sustainable Development: A Remote Sensing Perspective”. More than 200 scientists from China, USA, Canada, Italy, Germany, Japan, Brazil, India, South Korea, Switzerland, Greece, and so on, including one Fellow of the Royal Society of Canada, and two fellows of Chinese Academy of Sciences, attended this conference. <http://www.eorsa2014.org/>
- *Program Committee Member* of EORSA 2012 (Second International Workshop on Earth Observation and Remote Sensing Applications 2012) held in Shanghai, China, on June 8-11, 2012.

B. Editorial board

- Editor for Journal: Remote Sensing. 2018-2019
- Associate Editor for American Journal of Environmental Sciences. 2017-2019
- A Guest Editor for special issue of IEEE JSTARS “*Remote Sensing for Environmental Sustainability in the Asian-Pacific Region*”. 2019-2020.
- A Guest Editor for
 - Special Issue in [Remote Sensing: Carbon Cycle, Global Change, and Multi-Sensor Remote Sensing](#), 2015

- Special Issue in [**Remote Sensing: Digital Forest Resource Monitoring and Uncertainty Analysis**](#), 2015-2016
- Special Issue in [**Remote Sensing: Societal and Economic Benefits of Earth Observation Technologies**](#), 2016
- Special Issue in [**Remote Sensing: Modeling Saturation of Spectral Reflectance and Radar Data and Developing Corresponding Methods for Biomass Estimation of Various Forests**](#), 2018-2019
- Special Issue in [**Remote Sensing: Advances in Remote Sensing for Global Forest Monitoring**](#), 2019-2020