

Zhiming Yang

EDUCATION:

Ph.D., Environmental Science, 2005

The Oklahoma State University, Stillwater, OK

M.S., Environmental Science, 2000

The Ohio State University, Columbus, OH

PROFESSIONAL AND ACADEMIC WORK EXPERIENCE

Department of Environmental, Earth and Geospatial Sciences, North Carolina Central University

- Associate Professor (Aug 2010 – Present)

- Teach courses: Physical Geography, Remote Sensing, Water Quality and Control
- Work on one NSF project to improve the correlations between MODIS AOD and ground PM 2.5
- Conducted the detection of surface deformation in New Madrid and Eastern Tennessee Seismic Zones using SAR imagery
- Guide and advise graduate students on the use of remote sensing technology in research
- Develop research proposals on environmental studies using GIS and remote sensing
- Maintain a PM2.5 monitoring station at NCCU and alumni database

Grant Activities

- 2014-2019, \$199,869, Investigating optical properties of urban aerosols for monitoring PM2.5, NSF, PI
- 2014-2015, \$1000, Characterizing the distribution of carbon dioxide concentration in Durham, NC, NCCU CARS, PI.
- 2012-2015, \$188,922, Preparing science educators with climate change literacy through problem-based teaching and learning, NASA, PI

Graduate Students supervised

- Barryn McLaughlin, thesis project, Mapping Deforestation levels in Durham, NC using GIS and Remote Sensing, Sep 2018 – July 2020.
- Joel Gaya, thesis, Improving AOD_PM2.5 Correlation to Map PM2.5 in North Carolina, Sep 2017 – July 2019.
- Sierra Gilliam, thesis project, Analyzing Landsat 4-5 TM imagery to Identify Urban Heat Islands in the Triangle Area of North Carolina, June 2017 – May 2018.
- Andre Jones, thesis, A New Approach to Develop Aerosol Optical Depth (AOD) Product at 1-km resolution, Jan 2015 - Aug 2017.
- Abdela Salem, thesis, Detection of Land Deformation in Eastern Tennessee Seismic Zone Using Persistent Scatterer Interferometry Synthetic Aperture Radar (PSInSAR) Technique, Sep 2012 - May 2014.
- Kinsley Esezobor, thesis, Detecting Deformation in New Madrid Seismic Zone using SAR imagery – a Persistent Scatterer approach, Sep 2011-2014

- Steidrick Baker, project, Identify Snow Coverage change in Western North Carolina, Sep 13-Aug 2014.

Service to department, college and university

- Maintain and update remote sensing software packages used in departmental computer labs from Oct 2010 to present
- Work with other faculty members to revise graduate and undergraduate curriculum
- Served as a senator for NCCU Faculty Senate from Aug 2016 to present
- Served as a member of Academic Policy Committee of NCCU Faculty Senate from Sep 2017-present

Department of Agriculture and Natural Resources, Delaware State University

- Research Associate (May 2005 – Aug 2010)

Grant Activities

- 2010-2012, 141,000, A geospatial teaching laboratory for student education, United States Department of Agriculture (USDA), PI.
- Teach courses: GIS applications in natural resources and Microclimatology
- Guide and advise graduate students on thesis and use of GIS/RS in research
- Maintain GIS and remote sensing software installed on department computers
- Develop research proposals on natural resource studies using GIS and remote sensing
- Quantification of carbon stock alteration due to changes in land use/cover in Delaware
- Mapping Phragmites in Eastern U.S. using remote sensing (RS)
- Detection of changes in wetlands in Delaware using GIS and remote sensing
- Remote sensing of chlorophyll *a* and TSS in coastal waters

Geography Department, Oklahoma State University

- Research Assistant (Sep 2000 – May 2005)

- Detection of greenbug infestation on wheat using remote sensing techniques
- Research on impact of land use/cover on groundwater in Texas County, Oklahoma
- Evaluation of land use/cover change in Oklahoma City, Oklahoma using Landsat images, ArcGIS and GPS
- Modeling Stillwater Creek watershed using SWAT and GIS programming
- Modeling Beaver watershed, Oklahoma using SWAT
- Study on spatial variability of wheat yields in Oklahoma using GIS and remote sensing

Civil and Environmental Engineering Department, Ohio State University

- Research Assistant (Oct 1998 – Aug 2000)

- Impact of highways, highway interchanges and water and sewer lines on land development in suburbanizing area of Medina County, Ohio using Arc/Info
- The selection of study area about *Bythotrephes* in Lake Erie by using processing and interpreting techniques of thermal images and ArcView

Chinese Research Academy of Environmental Science

- Program Manager, Center for Environmental Assessment & Planning, (March 1994 – August 1998)
- Conducted environmental planning for several development districts in China
- Compiled and analyzed historical, topographical, geological, and hydrological information related to potentially hazardous sites
 - Researcher Engineer, Atmosphere Environment Institute (July 1986 – March 1991 and March 1992 – March 1994)
- Performed chemical and physical laboratory tests on collected air and water samples to assess compliance with pollution standards
- Helped modeling of air transport in Chendei and Yangpu, China

SELECTED PUBLICATIONS:

Peer-reviewed Papers (published)

1. Yang, Z., Zdanski, C., Farkas, D., Bang, J., Williams, H. 2020. Evaluation of Aerosol Optical Depth (AOD) and PM_{2.5} associations for air quality assessment, Remote Sensing Applications: Society and Environment. Vol 20(100396).
2. Yang, Z., Reiter, M., and Munyeic, N., A. 2017. Estimation of chlorophyll-a concentrations in diverse water bodies using ratio-based NIR/Red indices. Journal of Remote Sensing Applications: Society and Environment. Vol. 6: 52-58
3. Yang, Z., Salem, A. 2016. Examination of land surface deformation in the Eastern Tennessee Seismic Zone (ETSZ) using persistent scatterers interferometric synthetic aperture radar (PSInSAR). Journal of Geography, Environment and Earth Science. Vol. 6(4): 1-18.
4. Yang, Z., Williams, H. 2016. Exploring the possibility of using MODIS AOD data for PM_{2.5} monitoring, Journal of Environmental and Earth Science. Vol. 3, Issue 1, 1-7.
5. Yang, Z., Anderson, Y. 2016. Estimating chlorophyll-a concentration in a freshwater lake using Landsat 8 imagery, Journal of Environment and Earth Science. Vol.6, Issue 4, 134-142.
6. Yang, Z., Anoruo, A. 2010. Carbon stock loss due to forest clearing in the state of Delaware. Journal of Environmental Monitoring and Restoration. Vol. 6:74-84.
7. Rao, M., Yang, Z. 2010. Groundwater impacts due to conservation reserve program in Texas County, Oklahoma. Applied Geography. Vol 30(3), 317-328,
8. Elliott, N., Mirik, M., Yang, Z., Jones, D., Phoofolo, C., V., Giles, K., Michels Jr. G.J. 2009. Airborne remote sensing to detect greenbug1 stress to wheat. Southwestern Entomologist. Vol. 34, Issue 3, pg(s) 205-211 doi: 10.3958/059.034.0301.
9. Yang, Z., Rao, M.N., Elliott, N.C., Kindler, D., Popham. 2009. Differentiating stress induced by greenbugs and Russian wheat aphids in wheat using remote sensing. Journal of Computers and Electronics in Agriculture. Vol.67, No. 1-2, 64-70.
10. Yang, Z., M. Reiter and A.O. Anoruo. 2008. Application of ArcGIS to examine the relationship between forest fragmentation and land development in the state of Delaware. Journal of Environmental Monitoring and Restoration. Vol.5, 213-224.

11. Fan, L., Hai R., Wang, W., Lu, Z. and Yang, Z.. Application of computational fluid dynamic to model the hydraulic performance of subsurface flow wetlands. *Journal of Environmental Science*. Vol 20(12), 1415-1422.
12. Elliott, N., M. Mirik, Z. Yang, T. Dvorak, M. Rao, J. Michels, T. Walker, V. Catana, M. Phoofolo, K. Giles, and T. Royer. 2007. Airborne multi-spectral remote sensing of Russian wheat aphid injury to wheat. *Southwestern Entomologist*. Vol. 32, 213–219.
13. Yang, Z and Reiter, M. 2007. Estimating chlorophyll *a* concentrations in the coastal St. Jones River watershed using AISA images. *Journal of Environmental Monitoring and Restoration*. Vol.4, 89-102.
14. Yang, Z and Reiter, M. 2007. Land use/cover changes within riparian buffers in the State of Delaware. *Journal of Environmental Monitoring and Restoration*, Vol.4, 39-52.
15. Yang, Z., Rao, M.N., Elliott, N.C., Kindler, D., Popham, T.W. 2005. Using ground-based multispectral radiometry to detect stress in wheat caused by greenbug (*Homoptera: Aphididae*) infestation. *Computers and Electronics in Agriculture*, Vol.47, No. 2, 121-135.
16. Yang, Z., Rao, M.N., Kindler, D., Elliott, N.C. 2004. Remote sensing to detect plant injury, with particular reference to injury caused by the greenbug: a review. *Southwestern Entomologist*, Vol. 29 No. 3, 227-236.
17. Yang, Z. 1996. Study on spreading the Best Practicable Technique of Environmental Protection. *Huanjing Daobao*, No.3, 27-28.
18. Yang, Z. 1996. Spreading the extending of the Best Practicable Technique of Environmental Protection by depending on environmental management regulations. *Chinese Environmental Management*, No.1, 42 – 44.
19. Yang, Z. 1996. Study on economic estimate of acid deposition damage to materials. *Shanghai Environmental Science*, Vol.15 No.8, 14-17.
20. Yang, Z. 1996. Application of thinking for Cleaner Production in Environmental Impact Assessment. *Environmental Protection*, No.11, 18-20.
21. Yang, Z. 1994. Vertical distribution of airborne SO₂ in Guangzhou City, China. *Research of Environmental Science*, Vol.7 No.1, 19-23.

Conference proceedings

Zhiming Yang, Harris William. An Innovative Approach to Use MODIS AOD Data for PM_{2.5} Monitoring. *Proceedings from the 8th International Conference on Environmental Science and Technology*, held on June 6-10, 2016 in Houston, Texas, USA. ISBN 978-1-5323-2259-4

Zhiming Yang, Exploring the possibility of using MODIS image data for PM_{2.5} monitoring, *IGTF 2015 Proceedings. ASPRS Annual Meeting*, Tampa, Florida, May 4-8, 2015

SO₂ Control and Emission Trade in China, *The International Conference on Energy and the Environment (ICEE)*.

Conference presentations

1. Yang, Z., Williams, H. Utilization of MODIS AOD data for PM2.5 monitoring, AAG Conference, April 12, 2018, New Orleans.
2. Yang, Z., Williams, H. Forest Fragmentation in Jordan Lake Watershed and Environmental Impact, NCGIS 2015 Conference, Feb 26, 2015
3. Yang, Z., Williams, H. Improve Climate Change Literacy at Minority Institutions Through Problem-based Teaching and Learning" at Fall 2013 AGU Meeting on Dec 10, 2013
4. Yang, Z., Rao, M. Onset of Greenbug Infestation Using Field-based Remote Sensing. The annual meeting of the Association of American Geographers, March 19, 2002, Los Angeles

Books

1. Compilation of National Best Practicable Technology of Environmental Protection. (1993). Chinese Environmental Science Publishing House
2. Outline for traffic environmental protection. (1993). Chinese Environmental Science Publishing House

Book Chapters

Chapter: Relationship between Land Use and Water Quality and Its Assessment Using Hyperspectral Remote Sensing in Mid-Atlantic Estuaries in "Water Quality", InTech, 2016.

PROFESSIONAL AFFILIATIONS

Association of American Geographers

Association of Chinese Environmental Science