

Yuri Kim

Lecturer
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Teaching Interests

Geo-spatial methodology
GEOG-G338/538 (Intro Geographic Information System (GIS)) & GEOG-G438/539 (Adv. GIS)
GEOG-G336/536 Environmental Remote Sensing
GEOG-G237 Mapping Our World
Physical earth science
GEOG-G107 Physical System of Environment

Research Interests

Geographic Information System (GIS) and Remote Sensing (RS)
GIS and RS application to physical and human environment
Watershed hydrology and hydrologic modeling
Water resources back-cast and forecast under climate and human-environmental interaction
Relationship between climate change and vegetation, and its effect on water resources

Professional Preparation

2012 PhD in Geography, Advisor: Lawrence E. Band
University of North Carolina at Chapel Hill
Dissertation: Water Balance Change under Climate and Landuse/landcover Variability in the North Carolina Piedmont

2003 MCP in Graduate School of Environmental Studies, Advisor: Jungook Kim
Seoul National University, Seoul, Korea
Thesis: A Study of Runoff and Nonpoint Source Pollutant Loads in Urban and Suburban Areas at Ansan Watershed by Storm Water Management Modeling (SWMM)

1999 BS in Agricultural & Life Science
Seoul National University, Seoul, Korea

Professional Appointments

2018 – Present *Lecturer*, Department of Geography, Indiana University Bloomington
2017 – 2018 *Research Specialist*, Department of Environmental Sciences, University of Virginia
2017 – 2018 *Adjunct Lecturer*, Department of Geography, Indiana University Bloomington
2012 – 2017 *Research Specialist*, Institute for the environment, University of North Carolina at Chapel Hill
2006 – 2012 *Graduate Research Assistant*, Department of Geography, University of North Carolina at Chapel Hill

- 2006 – 2012 *Teaching Assistant*, Department of Geography, University of North Carolina at Chapel Hill
- 2004 – 2006 *Research Scholar*, Department of Geography, University of North Carolina at Chapel Hill
- 2001 – 2004 *Research Scholar*, Environmental Planning Institute, Graduate School of Environmental Studies, Seoul National University, Seoul, Korea
- 2001 – 2002 *Teaching Assistant*, Environmental Planning Institute, Graduate School of Environmental Studies, Seoul National University, Seoul, Korea

Teaching Experience

Indiana University Bloomington

Lecturer Intro and Adv. Geographic Information Science
 Environmental Remote Sensing
 Physical geography

University of North Carolina at Chapel Hill

Co-lecturer

Watershed hydrology (2013 spring)

- Lecture from basic to advanced hydrology and hydrologic modeling

Graduate Research Consultant

Applied climatology (2011 fall)

- Guest lecture about future climate change modeling
- Guide the class project with climate model output

Teaching Assistant

Introduction to GIS 2 (2008 spring, 2010 fall, 2011 spring)

- Project based GIS course
- Guest lecture about spatial interpolation method
- Guide and grade labs
- Consult class group project theme and method

Introduction to GIS 1 (2006 fall, 2008 fall, 2009 fall)

- From basic to advanced GIS software skill
- Guide and grade labs

Consult class group project theme and method

Advanced GIS (2007 fall, 2010 spring, 2012 spring)

- GIS in Watershed hydrology
- GIS in Medical geography

Introduction to Environmental System (2007 spring)

- Guest lecture about the basic concept of the earth science
- Consult and grade systems perspective essay paper

Seoul National University

Teaching Assistant

Environmental Problems in Modern Industrial Society (2001 fall, 2002 fall)

Peer Reviewed Publications

Gorelick, D. E., Lin, L., Zeff, H. B., **Kim, Y.**, Vose, J. M., Coulston, J. W., et al., 2020. Accounting for adaptive water supply management when quantifying climate and land cover change vulnerability. *Water Resources Research*,

Hwang, Taehee, Katherine L. Martin, James M. Vose, David Wear, Brian Miles, **Yuri Kim**, and Lawrence E. Band, 2018. Non-Stationary Hydrologic Behavior in Forested Watersheds is Mediated by Climate-Induced Changes in Growing Season Length and Subsequent Vegetation Growth. *Water Resources Research*.

Kim, Yuri, Lawrence E. Band, and Darren L. Ficklin, 2017. Projected hydrological changes in the North Carolina piedmont using bias-corrected North American Regional Climate Change Assessment Program (NARCCAP) data. *Journal of Hydrology: Regional Studies* 12: 273-288.

Kim, Yuri, Lawrence E. Band, and Conghe Song, 2014. The Influence of Forest Regrowth on the Stream Discharge in the North Carolina Piedmont Watersheds. *Journal of the American Water Resources Association (JAWRA)* 50(1): 57-73. (reviewed in the Yale Environment Review article – “Forest Regrowth as a counterbalance to climate variability”)

Band, L. E., McDonnell, J. J., Duncan, J. M., Barros, A., Bejan, A., Burt, T., Dietrich, W. E., Emanuel, R. E., Hwang, T., Katul, G., **Kim, Y.**, McGlynn, B., Miles, B., Porporato, A., Scaife, C. and Troch, P. A., 2014. Ecohydrological flow networks in the subsurface. *Ecohydrology*, 7: 1073–1078.

Dissertation and Thesis

Water Balance Change under Climate and Landuse/landcover Variability in the North Carolina Piedmont. 2012. PhD Dissertation in the Department of Geography, University of North Carolina at Chapel Hill.

A Study of Runoff and Nonpoint Source Pollutant Loads in Urban and Suburban Areas at Ansan Watershed by Storm Water Management Modeling (SWMM). 2003. Masters of City Planning and Management degree in the Graduate School of Environmental Studies, Seoul National University.

Presentations

Hwang, Taehee, Katherine L. Martin, James M. Vose, David Wear, Brian Miles, **Yuri Kim**, and Lawrence E. Band, 2018. Non-Stationary Hydrologic Behavior in Forested Watersheds is Mediated by Climate-Induced Changes in Growing Season Length and Subsequent Vegetation Growth, AGU Fall Meeting, San Francisco, California, Dec. 9-13, 2019

David E. Gorelick, Laurence Lin, Harrison B. Zeff, **Yuri Kim**, Lawrence E. Band, and Gregory W. Characklis, Relative impacts of hydrologic changes due to climate and landuse/landcover on water supply management systems, AGU Fall Meeting, Washington, D.C, Dec. 10-14, 2018

Yuri Kim, Anne Trainor, and Tracy Baker, Projecting water resources changes in potential large-scale agricultural investment areas of the Kafue River Basin in Zambia, CUAHSI Biennial Colloquium on Hydrologic Science and Engineering, Shepherdstown, West Virginia, Jul. 29 - Aug. 1, 2018

Yuri Kim, Anne Trainor, and Tracy Baker, Projecting water resources changes in potential large-scale agricultural investment areas of the Kafue River Basin in Zambia, AGU Fall Meeting, New Orleans, Louisiana, Dec. 11-15, 2017

Yuri Kim, The influence of forest on water resources in the North Carolina Piedmont: Past & Future, Geography Colloquium, Bloomington, Indiana, Oct. 27, 2017

Yuri Kim, Taehee Hwang, James Vose, Katherine L. Martin, and Lawrence E. Band, 2016. Characterization of hydrologic partitioning across geographical and inter-annual variation of the Yadkin-PeeDee River Basin using the SWAT model, AGU Fall Meeting, San Francisco, California, Dec. 12-16, 2016

Yuri Kim and Lawrence Band, Hydrological change projection in the North Carolina Piedmont watershed by bias corrected NARCCAP and SWAT, SWAT conference, Purdue, Oct. 14-16, 2015

Yuri Kim and Lawrence Band, Water yield change under future climate and Landuse/landcover in the North Carolina Piedmont, Association of American Geographers, New York City, New York, Feb. 23-27, 2012

Lawrence E. Band, **Yuri Kim**, and Taehee Hwang, Ecosystem processes at the watershed scale: Climate change, ecosystem feedbacks and implication for water resources, International Conference on Climate, Water and Policy (ICCWP), Pusan, South Korea, 2012

Yuri Kim and Lawrence Band, NARCCAP bias correction and its application to hydrologic model in the North Carolina Piedmont watershed, AGU Fall Meeting, San Francisco, California, Dec. 5-9, 2011

Yuri Kim and Lawrence Band, Evaluation and Bias Correction of NARCCAP Temperature over the Carolinas in Southeast US, AGU Fall Meeting, San Francisco, California, Dec. 13-17, 2010

Yuri Kim, Lawrence Band, and Daehyok Shin, The Influence of Landuse/Landcover Change on the Water Budget, AGU Joint Assembly, Ft. Lauderdale, Florida, May 27-30, 2008

Yuri Kim, Daehyok Shin and Lawrence Band, The Influence of Reforestaion on the Water Budget, CUAHSI Biennial Colloquium on Hydrologic Science and Engineering, Denver, Colorado, Jul. 14-16, 2008

Lawrence Band, Richard Smith, Taehee Hwang, Daehyok Shin, **Yuri Kim**, Brian Loopes, Mark Reed, Mats Rynge, and Den Gallulppi, Short and Long Term Drought Vulnerability in NC Water Supply Catchments: Climate and Land Use, Urban Water Consortium, Greensboro, North Carolina, Dec. 4, 2007

Yuri Kim, A Study of Runoff and Nonpoint Source Pollutant Loads in Urban and suburban Areas at Ansan Watershed by SWMM, The First Korean-Japan Joint Symposium on Limnology, Busan, Korea, May 19-22, 2004

Yuri Kim, A Study of Runoff and Nonpoint Source Pollutant Loads in Urban and Suburban Areas at Ansan Watershed by Storm Water Management Modeling (SWMM), Environmental science seminar, Kangwon University, Choongchun, Korea, 2004

Research Experiences

North Carolina ecosystem enhancement program river basin restoration prioritization process

Hydrologic Simulation of Climate Change Impacts in the Kafue Basin in Zambia

Water, Sustainability and Climate (WSC)-Category 3: Collaborative: Designing Robust & Adaptive Water Management Strategies in Regions Transitioning from Abundance to Scarcity

ULTRA-Ex: Collaborative Research: Reconciling Human and Natural Systems for the Equitable Provision of Ecosystem Services in the Triangle of North Carolina

Ex-urbanization & Climate Interaction in the Southern Appalachia the Edge

An interactive software infrastructure for sustaining collaborative community innovation in the hydrologic sciences

Baltimore Ecosystem Study, Long-Term Ecological Research: Phase III-Adaptive Processes in the Baltimore Socio-Ecological System: From the Sanitary to the Sustainable City

Improving River Basin Restoration Prioritization Products

Professional Services

Member of American Geophysical Union (AGU) and Association of American Geographers (AAG)

Reviewer for journals

- Journal of the American Water Resources Association (JAWRA)
- Environmental Modeling and Software
- Catena (An Interdisciplinary Journal of Soil Science-Hydrology-Geomorphology focusing on Geoecology and Landscape Evolution)

Research Skills

Hydrologic modeling

: SWAT, HEC-RAS, SWMM, MUSIC, RHESSys, and VIC

Handling massive climate modeling products

: NARCCAP, CMIP3 and 5

GIS/RS software

: ArcGIS, QGIS, GRASS, TAS, Whitebox GAT, TauDEM, GeoDa, SaTScan, CLUE, SLEUTH, ENVI, ERDAS IMAGINE, and ER Mapper

Field experimental skills

: Estimating hydrologic and water quality components (flow velocity, river width & depth, temperature, pH, DO, conductivity, etc.)