Youngsang Kwon

Associate Professor
Earth Sciences
University of Memphis

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ACADEMIC FOCI

Biogeography, Forest dynamics, Species distribution modeling (SDM), Ecological modeling, Global carbon cycling, GIS, Remote Sensing, Spatial statistics & Geostatistics.

EDUCATION

2012 Ph.D. Department of Geography. State University of New York at Buffalo, Buffalo, NY
Dissertation: A multi-scale assessment of forest carbon cycling across the eastern USA using Forest Inventory Analysis and MODIS data

2004 M.S. Department of Environment Studies. Seoul National University, Seoul, Korea
Thesis: Estimating the air temperature cooling effect of the Cheonggyechun stream restoration project of Seoul using Landsat ETM+

2001 B.S. Department of Forest Resources and Environmental Science, Korea University, Seoul, Korea

EMPLOYMENT HISTORY

2020 – present.
Associate Professor

2013 – 2020.
Assistant Professor
Department of Earth Sciences, University of Memphis

2011- 2013.
Visiting Assistant Professor
Department of Geography, University of Delaware

2006 - 2010
Statistical Analyst (part-time) at National Conference for Community and Justice, Buffalo, NY.
Conducted statistical analyses of survey data and wrote annual reports.

2004 - 2005
Researcher at Dept. of Urban Environment, Seoul Development Institute, Korea.

Created Seoul Metropolitan Biotope Map and conducted land cover change detection using remote sensing and field surveys.

PEER REVIEWED PUBLICATIONS

Ron-Ferguson, N., Chin, J., **Kwon, Y** (2021). Leveraging Machine Learning to Understand Urban Change with Net Construction. Landscape and Urban Planning. 216:104239. doi: https://doi.org/10.1016/j.landurbplan.2021.104239.

Baker, B.W. and **Kwon, Y**. (2021). Comparisons of the Spatial Extent of Eastern US Tree Species between Expert-Drawn Little's Range Map and Forest Inventory and Analysis. The Professional Geographer, pp.1-21.

Neupane, D., **Kwon, Y**., Risch, T. S., & Johnson, R. L. (2020). Changes in habitat suitability over a two decade period before and after Asian elephant recolonization, Global Ecology and Conservation, https://doi.org/10.1016/j.gecco.2020.e01023.

Shin, E., **Kwon, Y.**, & Shaban-Nejad, A. (2019). Geo-clustered chronic affinity: pathways from socio-economic disadvantages to health disparities. *JAMIA Open,* ooz029, https://doi.org/10.1093/jamiaopen/ooz029.

Behrman, C., Van Arsdale, R., **Kwon, Y**., et al. (2019). Drone Geologic Mapping of an Active Sand and Gravel Quarry, DeSoto County, Mississippi. *Drones.* 3(3), 57; https://doi:10.3390/drones3030057

Kwon, Y., Doty, A., Huffman, M., Rolland, V., Istvanko, D., & Risch, T (2019) Implications of forest management practices on sex-specific habitat use by Nycticeius humeralis. *Journal of Mammalogy*, gyz088 https://doi.org/10.1093/jmammal/gyz088.

Kwon, Y., Lee, T., Lang, A., & Burnett, D. (2019). Assessment on latitudinal tree species richness using environmental factors in the southeastern United States. *PeerJ,* 7:e6781 https://doi.org/10.7717/peerj.6781.

Kwon, Y., & Feng, L. (2019). Investigation of the peninsula effect using the latitudinal abundance pattern for tree species in Florida. *Diversity*, 11(2), 20.

Neupane, D., **Kwon, Y**., Risch, T. S., Williams, A. C., & Johnson, R. L. (2019). Habitat use by Asian elephants: Context matters. *Global Ecology and Conservation*, e00570.

Borie, C., Parcero-Oubiña, C., **Kwon, Y**., Salazar, D., Flores, C., Olguín, L., & Andrade P. (2019). Beyond site detection: the role of satellite remote sensing in analyzing archaeological problems. A case study in lithic resource procurement in the Atacama Desert, northern Chile. *Remote Sensing.* 11(7), 869.

Kwon, Y., Larsen, C. P., & Lee, M. (2018). Tree species richness predicted using a spatial environmental model including forest area and frost frequency, eastern USA. *PloS One*, 13(9), e0203881.

Kwon, Y., & Baker, B. W. (2017). Area-based fuzzy membership forest cover comparison between MODIS NPP and Forest Inventory and Analysis (FIA) across eastern US forest. *Environmental Monitoring and Assessment*, *189*(1), 19.

Choung, S., Oh, J., Han, W. S., Chon, C. M., **Kwon, Y**., & Shin, W. (2016). Comparison of physicochemical properties between fine (PM2. 5) and coarse airborne particles at cold season in Korea. *Science of the Total Environment*, *541*, 1132-1138.

Fryxell, R. T., Moore, J. E., Collins, M. D., **Kwon, Y**., Jean-Philippe, S. R., Schaeffer, S. M., ... & Houston, A. E. (2015). Habitat and vegetation variables are not enough when predicting tick populations in the southeastern United States. *PloS One*, *10*(12), e0144092.

Kwon, Y., & Larsen, C. P. (2013). Effects of forest type and environmental factors on forest carbon use efficiency assessed using MODIS and FIA data across the eastern USA. *International Journal of Remote Sensing*, *34*(23), 8425-8448.

Kwon, Y., & Larsen, C. P. (2013). An assessment of the optimal scale for monitoring of MODIS and FIA NPP across the eastern USA. *Environmental Monitoring and Assessment*, *185*(9), 7263-7277.

Kwon, Y., & Larsen, C. P. (2012). Use of pixel-and plot-scale screening variables to validate MODIS GPP predictions with Forest Inventory and Analysis NPP measures across the eastern USA. *International Journal of Remote Sensing*, *33*(19), 6122-6148.

Kwon, Y., & Song, I. (2005). The Effect of Adjacent Landuse Type on Temperature of Landscape Patches in Seoul. *Journal of Korea Planners Association*, *40*(4), 235-245.

Park, J., & **Kwon, Y**. (2004). Estimating the air temperature cooling effect of the Cheonggyechun stream restoration project of Seoul, Korea. *Journal of the Korean Institute of Landscape Architecture*. 2, 120~129.

GRANTS

(Funded)

2021 NSF GeoAllies, Field Trip support funds ($3000)

2021 TNWRRC ($43,700)
Title: Improved remote-sensing imagery techniques to identify riparian corridor characteristics in headwater streams and inventory wetlands, lakes, and permanent streams in West Tennessee.
Duration: Sep. 1, 2021 to Aug. 31, 2022
PIs. Brian Waldron, Youngsang Kwon, Mary Yeager

2019 FedEx Institute of Technology, Agriculture and Food Technologies Research Cluster
Title: Machine learning approach for predicting biodiversity
Duration: June 1, 2019 - July 30, 2020
PI. Youngsang Kwon Co-PI. Deepak Venugopal, Computer Sciences

2019 CAS research equipment funds: GPS instrumentation ($33,000 total cost)
Duration: Feb. 2019
Co-PIs. Andrew Mickelson & Youngsang Kwon

2019 Travel Enrichment Funds for summer 2019, University of Memphis
Duration: July 2019
Ecological Society of America (ESA) meeting at Louisville, KY

2017 FedEx Institute of Technology
Title: Drone Imaging of Active Sand and Gravel Quarries to Optimize Exploration and Mining
Duration: March 1, 2017 – February 29, 2018
PI. Dr. Dr. Roy Van Arsdale
Co-PIs. Dr. Youngsang Kwon, Dr. David Lumsden, Dr. Randel Cox, and Dr. Andrew Mickelson

2016 City of Memphis & FedEx Institute of Technology
Title: A Planning Support System for Comprehensive Planning and Zoning: A Geospatial Simulation Model of Land Use, Land Cover Change for the Memphis Metropolitan Region.
Duration: Dec.1 2016 – Dec.30 2017
Co-PIs. Reza Banai and Youngsang Kwon

2016 Faculty Research Grant (University of Memphis)
Title: Mapping the Morphology of Urban Sprawl: A Pilot Study of The Memphis Metropolitan Region.
Duration: July 1, 2016 – Aug 30, 2017
PI. Youngsang Kwon

2015 Conference travel support for Scientists and Engineers Early-Career Development (SEED) by Korean-American Scientists and Engineers Association (KSEA) ($500)

CERTIFICATE / SCHOLARSHIPS / AWARDS

2019 Agriculture and Food Research Fellow awarded by FedEx Institute of Technology.

2017 Drones Research Fellow awarded by FedEx Institute of Technology.

2016 Smart City Research Fellow awarded by FedEx Institute of Technology.

2010 Pixoneer Scholarship Award awarded by Korean-American Association for Geospatial and Environmental Sciences.

2008 NSF Research Traveling Fund on Spatial Filtering (Eigenvector) Workshop, sponsored by National Science Foundation (NSF).

2008 Mark Diamond Research Fund awarded by Graduate Student Association, University at Buffalo.

2008 Certificate of completion in workshop series “Teaching Effectiveness and and Public Speaking” issued by Dr. Ebert’s workshop series, University at Buffalo.

2004 Master’s Thesis First Prize awarded by Graduate School of Environmental Studies, Seoul National University.

2003 Certificate of Information Processing Engineer issued by Human Resources Development Service of Korea.

2003 Merit-based Scholarship granted through the Graduate School of Environmental Studies, Seoul National University.

2003 Recognition Certificate awarded by Cambodian National Information Communications Technology Development Authority, Royal Government of Cambodia, Secretary General.

Workshop Invited (sponsored)

2019 The Fifth Annual Earth Educators' Rendezvous, Vanderbilt Universities, Nashville.

2014 Workshop as an instructor teaching LiDAR, Korea Institute of Geoscience and Mineral Resources.

2008 Spatial Filtering Workshop sponsored by NSF, University of Texas at Dallas, Texas.

2007 Spatial Ecology Workshop, University of Guelph, ON, Canada.

2006 Stream Restoration Workshop, University of Toledo, Ohio.

TEACHING EXPERIENCE

At University of Memphis:
ESCI 4511/6511 Remote Sensing of Environment
ESCI 4515/6515 Geographic Information Sciences
ESCI 4615/6615 Forest Informatics (New course development)
ESCI 4610/6610 Advanced Geographic Information System
ESCI 4526/6526 Biogeography (New course development)
ESCI 1020 Landforms

SERVICE & OUTREACH

Service:

• Departmental service

Undergraduate (geography) advisor (spring 2019 to present).
Earth Sciences Colloquium organizer (fall 2015 to fall 2018).
Library liaison for Earth Sciences (spring semester 2018 to present).
Web master for managing department webpage (fall 2017 to present).
Department email listserv manager (spring 2018 to present).
Earth Sciences day & Discover your Major day (display presenter, annual events).
Landforms textbook revision working group (spring 2014 to spring 2015).
Curriculum committee (geography) (fall 2013 to fall 2014).
Scholarship review committee (fall 2018 to present).
Graduation participation (fall 2013 to present, annual events).
Instructor search committee (2014 (geology instructor) & 2018 (lab coordinator assessment).

• University Service

Campus Day for high school seniors (fall 2013 to present).
Graduate School Fair (fall 2013 to present).
Annual Student Research Forum as a Judge (fall 2017 and fall 2018).
Ecuador research trip to promote collaborative research wok with University of Loja, Ecuador in spring 2014 (with Jerry Bartholomew, Dorian Burnett, Brian Waldron, and Michael Kennedy).
STEM curriculum consulting for St. Paul High school (spring 2019).

• Professional service

Reviewer (peer-review journal) for International journal of Remote Sensing, Annals of American Association of Geographers, CATENA, Forest Ecology and Management, Remote Sensing, Forests, and Forestry.

Outreach:

Supervising students for Senior Internship Program in Lausanne collegiate school (2018 summer).
Civic Common Areas and Open Space Working Group member from the Memphis 3.0 Comprehensive Plan since Jan. 2017: We have a monthly group meeting and public meetings for Memphis 3.0 Comprehensive Plan (aimed at advancing community conversation to establishing a vision).
Korean language teacher for elementary school kids (every Sunday since fall 2018).

Member in Global Forest Biodiversity Initiative.
Member in Korean-American Scientists and Engineers Association (KSEA).
Actively participating in Memphis Area Geographic Information Consortium (MAGIC) conference meeting.
Board member and webmaster for Nonconnah Creek Conservancy meeting (fall 2017 to present).
Member in Cooper-Young Historic District Arboretum (fall 2017 to present).