

Dakota McCarty, PhD

Assistant Professor, Environmental Science and Policy

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Address: Incheon, South Korea

PROFESSIONAL EXPERIENCE

Assistant Professor

George Mason University Korea - Dept. Env. Sci. and Policy 2024 - Now
Incheon, South Korea

Lecturer & Postdoctoral Researcher

Incheon National University - Dept. Urban Policy and Admin. 2023-24
Incheon, South Korea

Researcher

INU - Urban Environmental Policy & Planning Lab 2020-23
Incheon, South Korea

Data Science Manager

Creative Force 2018-24
Remote

Teacher

Incheon International High School 2017-18
Incheon, South Korea

Research Assistant

Institute for Urban Policy Research 2014-16
Richardson, TX, United States

EDUCATION

Ph.D., Urban Planning and Policy

University of Incheon
Incheon, South Korea 2023

Dissertation Committee:

Hyun Woo Kim, Dongwoo Lee, Changil Lee, Yunmi Park,
Jinwoo Lee

M.Sc., International Political Economy

University of Texas at Dallas 2016
Richardson, TX, United States

B.A., International Political Economy

University of Texas at Dallas 2015
Richardson, TX, United States

PEER REVIEWED ARTICLES

Dakota McCarty, Minju Jeong, Kichan Kim, Hyun Woo Kim. 2024.

“Assessing the Accessibility and Equity of Urban Parks Using Park Desert

Index: The Case of Seoul, South Korea” *Studies in Regional Development*, 56 (2)

Dakota McCarty, Dongwoo Lee, Yunmi Park, Hyun Woo Kim. 2024. “Exploring road safety through urban fabric characteristics and theory-driven prediction modeling with SEM-XGBoost.” *Environment and Planning B: Urban Analytics and City Science*, 0 (0)

Dakota McCarty, Hyun Woo Kim. 2024. “Risky behaviors and road safety: An exploration of age and gender influences on road accident rates”. *PLoS One* 19(1)

Hyun Woo Kim, **Dakota McCarty**, Minju Jeong. 2023. “Examining commercial crime call determinants in alley commercial districts before and after Covid-19: A machine learning-based SHAP approach”. *Applied Sciences* 13(21)

Dakota McCarty and Hyun Woo Kim. 2023. “A Standardized European Hexagon Gridded Dataset Based on OpenStreetMap POIs.” *Data in Brief* 49

Dakota McCarty, Jaekyung Lee, and Hyun Woo Kim. 2021. “Machine Learning Simulation of Land Cover Impact on Surface Urban Heat Island Surrounding Park Areas.” *Sustainability: Science Practice and Policy* 13(22)

Dakota McCarty, Hyun Woo Kim, and Hye Kyung Lee. 2020. “Evaluation of Light Gradient Boosted Machine Learning Technique in Large Scale Land Use and Land Cover Classification.” *Environments* 7(10)

Hyun Woo Kim, **Dakota McCarty**, and Jaekyung Lee. 2020. “Enhancing Sustainable Urban Regeneration through Smart Technologies: An Assessment of Local Urban Regeneration Strategic Plans in Korea.” *Sustainability: Science Practice and Policy* 12(17)

RESEARCH (IN PROGRESS)	Simulation of Climate Change Models and Flooding in Jakarta Indonesia (Pending publications)	
	Kinetic Modeling of Squalene Oxidation Induced by Urban PMs	
	Enhancing Objectivity in Colorimetric Water Quality Assessments through RGB Computer Imaging and Interpolation (Pending publications)	
	High Resolution Spatial Mapping of Air Quality in Songdo through Gaussian Mixture Modeling and Computational Fluid Dynamic Simulations	
	Quantifying the Cooling Capacity of the Han River in Seoul, South Korea	
ACADEMIC PRESENTATIONS	AESOP Annual Congress, Paris	2024
	Korean Society for Environmental Policy Conference	2024

	AESOP Annual Congress, Łódź	2023
	Korea Planning Association Academic Conference	2022
COURSES TAUGHT	George Mason University Korea	
	• Ecosphere: Intro the Environmental Science I (lecture)	2025
	• Ecosphere: Intro the Environmental Science I (lab)	2025
	• Environment and You: Issues in the 21st Century	2024-25
	• Environmental Policy Making in Developing Countries	2024-25
	Incheon National University	
	• Green Urbanism and Sustainability Planning	2024
	• Social Research Methods	2024
	• Theory and History of Urban Planning	2023
	• GIS and Spatial Data Analysis	2023
	• Quantitative Research Methods	2022-23
	Incheon International High School	
	• AP Spanish	2018
	• AP Microeconomics	2018
	• AP World History	2017-18
	• AP Macroeconomics	2017-18
	• AP Statistics	2017
	Northern Marianas College	
	• Research Design (Co-lecturer)	2021
FELLOWSHIPS, GRANTS, AND AWARDS	Faculty Research and Development Grant - 5,000,000 KRW	2025
	Environment and Sustainability Research Grant - 37,000 EUR	2024
	Post-Doctoral Research Fellow - 24,000,000 KRW	2023
	Korea Land and Urban Planning Association President's Award	2022
	도시 재생 아이디어, 사진 공모전 - 3,000,000 KRW	2019
	Seoul Case Study Program Fellow - 3,000,000 USD	2016
	Graduate Assistantship (RA) - 30,000 USD	2016

Undergraduate Work-Study Grant - 15,000 USD	2015
Undergraduate Research Grant - 1,000 USD	2015

MENTORING & ADVISING

George Mason University

- Supervised Mason IMPACT research on **Seunggi Stream water quality** using colorimetric methods.
- Mentored student showcases on **Gangnam flood mitigation and Seunggi Stream improvement plans**.
- Guided independent research as an Undergraduate Research Scholar Program mentor.

Incheon National University

- Advised a master's thesis on **state-wide air quality modeling** using weighted regression.
- Mentored students in an award-winning **urban regeneration project for Sinpo, Incheon**.
- Supervised a group research project on **the impact of urban heat islands in Incheon**, integrating machine learning and GIS to analyze temperature variances.
- Guided students in developing a **smart mobility plan for Incheon**, incorporating electric vehicle infrastructure and public transit optimization.
- Supported a student-led proposal for a **green corridor initiative**, improving biodiversity and walkability in urban areas.

Incheon International High School

- Student conference presentation: Gentrification in Seoul

ACADEMIC SERVICES

Reviewer

- Peer-reviewed manuscripts for leading journals, including:
 - Land, Scientific Reports, International Journal of Environmental Research and Public Health, Sci, Advances in Civil Engineering, Remote Sensing, Buildings, and Environmental Monitoring and Assessment.

Conference Organizer and Panelist

- AESOP Annual Congress 2024, Track Chair

Academic Committee Membership

- Member of **thesis review committees** for graduate students at Incheon National University, advising on urban policy and environmental science topics.
- Participated in curriculum development workshops for **urban planning and environmental sciences programs** at Incheon National University.

PROFESSIONAL MEMBERSHIPS	Regional Ambassador, Association of European Schools of Planning (AESOP) Young Academics (YA)	2022-
	Member, Korea Planning Association (KPA)	2022-
	Member, Association of European Schools of Planning (AESOP)	2022-
	Member, Association of Collegiate Schools of Planning (ACSP)	2022-
	Member, International Society of City and Regional Planners (ISOCARP)	2021-
	President, Student Organization Funding Advisory Board (UTD-SOFAB)	2015-16
	Elected member, United Nations Association (UNA - Dallas Chapter)	2012-14
LANGUAGES, SOFTWARE, & OTHER SKILLS	Languages: English (Native), Korean (Intermediate), Spanish (Advanced), French (Advanced)	
	Programing languages: Python, R, SPSS, Stata, Ruby, PHP, C	
	Geographic Information Systems: QGIS, ArcGIS, ArcMAP, GRASS GIS, Google Earth Engine, ENVI, ERDAS IMAGINE	
	Data analysis & environmental modeling: MATLAB, EcoSpold, OpenLCA, Simapro, CANARY	
	Climate modeling & simulation: WRF (Weather Research and Forecasting Model), WRF-Chem, CMAQ, TerrSet	
	Web & App development: HTML, CSS, Flask, Django, Laravel, Unity, JavaScript	
	Environmental monitoring & design: Photoshop, AutoCAD, LIDAR data processing (e.g., LAS tools), HEC-RAS, SWAT	