

# Yoo Min Park

Department of Geography, Planning, and Environment  
East Carolina University  
Brewster A-237, Greenville, North Carolina 27858  
Email: parky19@ecu.edu | Office: 252-328-4068 | Homepage: www.yoominpark.com

## EDUCATION

---

- 2014-2019 **PhD in Geography and Geographic Information Science (GIS)**  
University of Illinois at Urbana-Champaign (UIUC), Illinois, USA.  
*NSF-Funded Dissertation: “Spatiotemporal Approaches to Understanding Environmental Justice and Multi-Contextual Segregation”*  
*Committee: Mei-Po Kwan (chair), Sara McLafferty, Julie Cidell, and Bo Li*  
*Minor: Statistics, Community Health*
- 2011-2013 **MA in Geography** (Specialization: **Spatial Statistics**)  
Korea University, Seoul, South Korea.
- 2007-2011 **BA in Geography Education**  
Korea University, Seoul, South Korea.

## POSITIONS & EMPLOYMENT

---

- 2019-present **Assistant Professor**, Department of Geography, Planning & Environment, East Carolina University.
- 2018-2019 **Block Grant Fellow**, University of Illinois at Urbana-Champaign.
- 2017-2018 **Research Associate**, Space-Time Analysis and Research Laboratory, University of Illinois at Urbana-Champaign.
- 2017-2018 **Teaching Assistant**, Department of Geography & GIS, University of Illinois at Urbana-Champaign.
- 2016-2017 **Block Grant Fellow**, University of Illinois at Urbana-Champaign.
- 2014-2016 **Teaching Assistant**, Department of Geography & GIS, University of Illinois at Urbana-Champaign.
- 2014 **Researcher**, Korea Environment Institute, Sejong, South Korea.
- 2011-2013 **Research Assistant**, Research Institute of Korean Studies, Korea University, Seoul, South Korea.

## RESEARCH & TEACHING INTERESTS

---

- Geographic Information Science (GIS)
- Geospatial Data Analytics
- Spatio-Temporal Data Analytics
- Low-Cost Air Pollution Sensors
- Spatial Statistics
- Environmental Health
- Health Disparities/Environmental Justice
- Exposure to Air Pollution
- Health/Medical Geography
- Human Mobility

## EXTERNAL RESEARCH GRANTS

---

- 2020-2022 **Center for Human Health and the Environment (CHHE) Pilot Project Grant**, CHHE at the North Carolina State University (Supported in part by the National Institute of Environmental Health Sciences [NIEHS] under Award No. P30ES025128).  
*Title:* “A Low-Cost Mobile Air-Pollution Sensor with Geospatial Mapping: A Tool for Community-Engaged, Environmental Health Disparity Research”  
*Total Amount:* \$31,112  
*Role:* **PI** (with Co-PI Sinan Sousan, in partnership with AMEXCAN)
- 2020 **COVID-19 CARES Act Research Fund**, North Carolina General Assembly.  
*Title:* “Ethics Protocol for Vaccine Distribution and Eastern North Carolina COVID Mapping”  
*Total Amount:* \$1,239,600  
*Role:* **Co-PI** (with multiple PIs Gregory Kearney and Maria Clay, in partnership with Vidant Health)
- 2017-2019 **National Science Foundation (NSF) Doctoral Dissertation Research Improvement Grant**, NSF Geography and Spatial Sciences Program (Award No. 1735295).  
*Title:* “Segregation and Its Effects on Social Disparities in Exposure to Air Pollution”  
*Total Amount:* \$10,607  
*Role:* **Co-PI** (with PI Mei-Po Kwan) (*I was not an official PI due to graduate student status but I was the lead writer of the grant proposal and took direct responsibility for the completion of this project.*)
- 2017 **American Association of Geographers (AAG) Dissertation Research Grant**, AAG.  
*Title:* “Segregation and Its Effects on Social Disparities in Exposure to Air Pollution”  
*Total Amount:* \$1,000  
*Role:* **PI**

## INTERNAL RESEARCH GRANTS

---

- 2020-2021 **Diversity and Inclusion Research and Scholarship Program Seed Grant**, Office for Equity and Diversity, East Carolina University.  
*Title:* “Mapping Accessibility with Dignity: An Inclusive, Equitable University Environment for People with Disabilities”  
*Total Amount:* \$10,650  
*Role:* **PI** (with Co-PI Joonkoo Yun)
- 2020-2021 **Engaged Outreach and Scholarship Academy (EOSA) Research Grant**, Office of Community Engagement and Research, East Carolina University.  
*Title:* “Community Air Quality Monitoring Using Low-Cost Air Sensors and Citizen Science Approaches in Environmental Justice Communities”  
*Total Amount:* \$9,500  
*Role:* **PI** (in partnership with CleanAIRE NC)
- 2020 **Natural Resources and the Environment Research Cluster (NRERC) Seed Grant**, NRERC, East Carolina University.  
*Title:* “Development of an Advanced Spray Diagnostics Test Rig for the Characterization of Biofuel Spray Flows Exhausted from Liquid Fuel Injectors”  
*Total Amount:* \$10,650

Role: **Co-PI** (with PI Yang Liu)

## PEER-REVIEWED JOURNAL ARTICLES

---

- Park, Y.M.**, Sousan, S., Streuber, D., & Zhao, K. (2021). GeoAir – A Novel Portable, GPS-Enabled, Low-Cost Air-Pollution Sensor: Design Strategies to Facilitate Citizen Science Research and Geospatial Assessments of Personal Exposure. *Sensors*, 21(11), 3761.
- Park, Y.M.**, Kearney, G.D., Wall, B., Jones, K., Howard, R., & Hylock, R. (2021). COVID-19 Deaths in the United States: Shifts in Hot Spots over the Three Phases of the Pandemic and the Spatiotemporally Varying Impact of Pandemic Vulnerability. *International Journal of Environmental Research and Public Health*, 18(17), 8987.
- Sousan, S., Regmi, S., & **Park, Y.M.** (2021). Laboratory Evaluation of Low-Cost Optical Particle Counters for Environmental and Occupational Exposures. *Sensors*, 21(12), 4146.
- Park, Y.M.** (2021). A GPS-Enabled Portable Air Pollution Sensor and Web-Mapping Technologies for Field-Based Learning in Health Geography. *Journal of Geography in Higher Education*, 45. <https://doi.org/10.1080/03098265.2021.1900083>
- Wang, J., Kou, L., Kwan, M.-K., Shakespeare, R., Lee, K., & **Park, Y.M.** (2021). An Integrated Individual Environmental Exposure Assessment System for Environmental Health Studies. *Sensors*, 21(12), 4039.
- Kearney, G., Jones, K., **Park, Y.M.**, Howard, R., Hylock, R., Wall, B., Clay, M., & Schmidt, P. (2021). COVID-19: A Vaccine Priority Index Mapping Tool for Rapidly Assessing Priority Populations in North Carolina. *Online Journal of Public Health Informatics*, 13(3).
- Park, Y.M.** (2020). Assessing Personal Exposure to Traffic-Related Air Pollution Using Individual Travel-Activity Diary Data and an On-Road Source Air Dispersion Model. *Health & Place*, 63: 102351.
- Park, Y.M.** & Kwan, M.-P. (2020). Understanding Racial Disparities in Exposure to Traffic-Related Air Pollution: Considering Spatiotemporal Dynamics of Population Distribution. *International Journal of Environmental Research and Public Health*, 17(3), 908.
- Park, Y.M.** & Kwan, M.-P. (2018). Beyond Residential Segregation: A Spatiotemporal Approach to Examining Multi-Contextual Segregation. *Computers, Environment and Urban Systems*, 71, 98-108.  
\* *Won First Place in the Spatial Analysis and Modeling Specialty Group Student Paper Competition at the 2018 AAG Annual Meeting.*
- Park, Y.M.** & Kwan, M.-P. (2017). Individual Exposure Estimates May Be Erroneous When Spatiotemporal Variability of Air Pollution and Human Mobility Are Ignored. *Health & Place*, 43, 85-94.  
\* *Featured by Health & Place as the most cited article published in the journal since 2017.*  
\* *Won First Place in the GIS Specialty Group Student Paper Competition at the 2016 AAG Annual Meeting.*
- Park, Y.M.** & Kwan, M.-P. (2017). Multi-Contextual Segregation and Environmental Justice Research: Toward Fine-Scale Spatiotemporal Approaches. *International Journal of Environmental Research and Public Health*, 14(10), 1205.

- Park, Y.M. & Kim, Y. (2014).** A Spatially Filtered Multilevel Model to Account for Spatial Dependency: Application to Self-Rated Health Status in South Korea. *International Journal of Health Geographics*, 13:6.  
 \* *Won the Peter Gould Student Paper Award in the AAG Health and Medical Geography Specialty Group Student Paper Competition in 2014.*
- Park, Y.M. & Kim, Y. (2012).** An Evaluation and Suggestion of Photovoltaic Power Plant Locations Based on Environmental and Social Impacts and Sustainability. *Journal of the Economic Geographical Society of Korea*, 15(3), 438-456.
- Park, Y.M. & Kim, Y. (2011).** Agriculture Location Analysis Using Kriging and Analytic Hierarchy Process (AHP). *Journal of the Korean Cartographic Association*, 11(2), 75-90.

## **AWARDS & FELLOWSHIPS**

---

- 2021      **Sponsorship for the National Center for Faculty Development and Diversity Faculty Success Program**, Thomas Harriot College of Arts and Sciences, East Carolina University (\$4,450).
- 2020      **Jacques May Thesis Prize for the Best Doctoral Dissertation**, Health and Medical Geography Specialty Group, AAG (\$250).
- 2018-19   **Block Grant Fellowship**, Graduate College, University of Illinois (\$16,750).
- 2018      **Teaching Excellence Award**, Department of Geography and GIS, University of Illinois.
- 2018      **First Place (John Odland Award)**, Spatial Analysis and Modeling Specialty Group Student Paper Competition, AAG (\$500).
- 2018      **Graduate College Conference Travel Grant**, University of Illinois (\$225).
- 2017      **Messina Stanley Graduate Scholarship**, Department of Geography and GIS, University of Illinois (\$1,000).
- 2017      **Student Paper Award**, Korean-American Association for Geospatial and Environmental Sciences (\$500).
- 2017      **Travel Award**, Spatial Analysis and Modeling Specialty Group, AAG (\$250).
- 2017      **Travel Award**, Urban Geography Specialty Group, AAG (\$100).
- 2017      **Sim Travel Award**, Korean-American Association for Geospatial and Environmental Sciences (\$500).
- 2016-17   **Block Grant Fellowship**, Graduate College, University of Illinois (\$16,500).
- 2016      **First Place**, GIS Specialty Group Student Honors Paper Competition, AAG (\$1,000).
- 2015      **Third Place**, International Student Paper Competition, Korea Environment Institute (\$1,000).
- 2014      **Peter Gould Student Paper Award**, Health and Medical Geography Specialty Group Student Paper Competition, AAG (\$100).
- 2013      **Second Place**, Research Poster Competition, National Geographic Information Institute (\$500).

- 2012-13     **National Research Scholarship** (for an outstanding graduate thesis proposal), Korea Student Aid Foundation (\$8,000).
- 2010         **Second Place**, Travel Program Proposal Competition, Korea Travel Conference (\$1,000).
- 2008-10     **Academic Excellence Awards**, Department of Geography Education, Korea University.
- 2007-08     **Admission Scholarship** (awarded to selected students with exceptional scores in the national entrance examination), Korea University (\$8,500).

## INVITED TALKS

---

- **Park, Y.M. (Invited Panelist).** “The Advantages and Challenges of Using Big Data in Environmental Exposure Research” American Association of Geographers Annual Meeting, New York, NY, Feb 2022.
- **Park, Y.M.** “Making Our Campus More Accessible for All Individuals: Engaging Students in Indoor Mapping”, Department Spring Colloquium, Department of Geography, Planning, and Environment, East Carolina University, NC, Jan 2021.
- **Park, Y.M. & Yun, J.K.** “Participatory Mapping for Campus Accessibility with Dignity”, Diversity Seminar, East Carolina University, NC, Oct 2020.
- **Park, Y.M.** “A User-Friendly Portable Air Pollution Sensor for Community-Engaged, Environmental Health Disparity Research.”, KSEA Annual Seminar, NC, May 2020.
- **Park, Y.M.** “Moving Beyond Residential Neighborhoods: A Fine-Scale Spatiotemporal Approach to Examining Environmental Inequalities.” School of Geography, University of Leeds, Leeds, UK, April 2018.
- **Park, Y.M. (Invited Panelist).** “What Next for New and Emerging Forms of Data?” HABITS Symposium (New and Emerging Forms of Data for Policy Making: Transport, Health and Air Quality Management), Leeds, UK, April 2018.
- **Park, Y.M.** “A Spatiotemporal Analysis of Racial Disparities in Exposure to Air Pollution.” HABITS Symposium (New and Emerging Forms of Data for Policy Making: Transport, Health, and Air Quality Management), Leeds, UK, April 2018.
- **Park, Y.M.** “Where, When, and How Long You Stay at a Given Location Determine Your Level of Exposure to Air Pollution.” School of Earth, Society, and the Environment’s Research Review, University of Illinois, IL, February 2017.

## TEACHING EXPERIENCE

---

- FA 2021     **Instructor**, *GIS II/Advanced GIS (GEOG 4430/6430)*  
 Department of Geography, Planning, and Environment, East Carolina University.  
 \* *Teaching effectiveness score (student evaluation): 4.91/5.00*

- SP 2021 **Instructor**, *Medical Geography (GEOG 4340/6340)*.  
Department of Geography, Planning, and Environment, East Carolina University.  
\* **Teaching effectiveness score (student evaluation): 4.50/5.00**
- SP 2021 **Guest Lecturer**, *Environmental and Occupational Epidemiology (EH530)*.  
Department of Environmental Health, Rollins School of Public Health, Emory University (Lecture Title: “Integrating Human Mobility and Geospatial Methods in Environmental Justice Research”)
- FA 2020 **Instructor**, *GIS II/Advanced GIS (GEOG 4430/6430)*  
Department of Geography, Planning, and Environment, East Carolina University.  
\* **Teaching effectiveness score (student evaluation): 4.69/5.00**
- SP 2020 **Instructor**, *Medical Geography (GEOG 4340/6340)*.  
Department of Geography, Planning, and Environment, East Carolina University.  
\* **Teaching effectiveness score (student evaluation): 4.74/5.00**
- SP 2020 **Guest Lecturer**, *Transportation Planning and Policy (PLAN 4075/ PLAN6075)*.  
Department of Geography, Planning, and Environment, East Carolina University (Lecture Title: “Travel behavior modeling”)
- FA 2019 **Instructor**, *GIS II/Advanced GIS (GEOG 4430/6430)*.  
Department of Geography, Planning, and Environment, East Carolina University.  
\* **Teaching effectiveness score (student evaluation): 4.82/5.00**
- SP 2018 **Teaching Assistant (Lab Instructor)**, *Business Applications of GIS (GEOG 440)*.  
Department of Geography and GIS, University of Illinois.  
\* **Included in the List of Teachers Ranked as Excellent by Their Students (Top 10%).**  
\* **Teaching effectiveness score (student evaluation): 4.75/5.00**
- FA 2017 **Teaching Assistant (Lab Instructor)**, *Introduction to GIS Systems (GEOG 379)*.  
Department of Geography and GIS, University of Illinois.  
\* **Included in the List of Teachers Ranked as Excellent by Their Students.**  
\* **Teaching effectiveness score (student evaluation): 4.63/5.00**
- SU 2016 **Instructor**, *Digital Earth (GEOG 105 – Online Course)*.  
Department of Geography and GIS, University of Illinois.
- SP 2016 **Teaching Assistant (Lab Instructor)**, *Business Applications of GIS (GEOG 440)*.  
Department of Geography and GIS, University of Illinois.
- FA14-15 **Teaching Assistant**, *Geography of Globalization (GEOG 106)*.  
Department of Geography and GIS, University of Illinois.
- FA 2010 **Teaching Assistant**, *Intermediate Geographic Information Systems (GEOG 458)*.  
Department of Geography, Korea University.
- SP 2010 **Student Teacher**, *Teaching practice in a high school*.  
Bucheon Girls’ High School, Bucheon, South Korea.

## PRESENTATIONS

---

- **Park, Y.M.** Sousan, S., Chavez, D. Streuber, D., Zhao, K., Figueroa-Bernal, N., & Alvarez, J. “A novel portable, GPS-enabled, low-cost air-pollution sensor to facilitate citizen science research and

geospatial assessments of personal exposure” American Association of Geographers Annual Meeting, New York, NY, February 2022.

- Sousan, S., Regmi, S., & **Park, Y.M.** “Laboratory Evaluation of Low-cost Optical Particle Counters for Environmental and Occupational Exposures.” American Association for Aerosol Research Annual Conference, Albuquerque, NM, October 2021.
- **Park, Y.M.**, & Sharova, M. “Community Air Quality Monitoring Using Low-Cost Air Sensors and Citizen Science Approaches.” Pitt County Schools K-12 Science Curriculum Development Meeting, NC, June 2021.
- Magi, B., **Park, Y.M.**, & Sharova, M. “Low-Cost Air Quality Monitoring in North Carolina.” Carolinas Climate Resilience Conference, Durham, NC, May 2021.
- Wall, B., Kearney, G., Hickey, T., **Park, Y.M.**, Cowin, P., Hylock, R., Howard, R., Schmidt, P., Jones, K., Clay, M., & Fallon, J. “Collaborative Leadership: COVID-19, ENC Population Health Surveillance and Mapping Project.” ECU-Vidant Health Unified Quality Improvement Symposium, Greenville, NC, February 2021. (Poster presentation).
- **Park, Y.M.**, Hylock, R., Howard, R., Jones, K., Wall, B., & Kearney, G. “Eastern N.C. Vidant-ECU COVID-19 Mapping Project.” Oral Presentation to Vidant Administrators, Greenville, NC, September 2020.
- **Park, Y.M.** & Zhao, K. “User-Friendly Mobile Air Sensing Devices: The Key to the Success of Community-Based Participatory Research on Air Pollution Monitoring.” Air Sensor International Conference, Pasadena, CA, May 2020. (Canceled due to COVID-19)
- **Park, Y.M.** “Assessing Personal Exposure to Traffic-Related Air Pollution Using Individual Travel-Activity Diary Data and an On-Road Source Air Dispersion Model.” American Association of Geographers Annual Meeting, Denver, CO, April 2020. (Canceled due to COVID-19)
- **Park, Y.M.** “Assessing Personal Exposure to Air Pollution Using Human Movement Data.” KSEA-NC Interdisciplinary Research Conference, Raleigh, NC, February 2020.
- **Park, Y.M.** “Where You Visit, How Long You Stay There, and What You Do There Affect Your Exposure to Air Pollution.” STEM@Starlight – Collaboration in the Sciences and Beyond, Greenville, NC, October 2019.
- **Park, Y.M.** & Kwan, M.-P. “How Does Human Mobility Affect Urban Segregation and Environmental Justice? A Spatiotemporal Approach.” American Association of Geographers Annual Meeting, Washington D.C., April 2019.
- **Park, Y.M.** & Kwan, M.-P. “Spatiotemporal Analysis of Multi-Contextual Segregation in Urban Areas.” American Association of Geographers Annual Meeting, New Orleans, LA, April 2018.
- **Park, Y.M.** & Kwan, M.-P. “Spatiotemporal Uncertainties in Assessing Individual Exposure to Air Pollution.” American Association of Geographers Annual Meeting, Boston, MA, April 2017.
- **Park, Y.M.** “Segregation in Various Geographical and Temporal Contexts in Daily Life and Its Effects on Social Disparities in Exposure to Air Pollution.” Geography & GIScience Colloquium, University of Illinois at Urbana-Champaign, IL, February 2017.

- **Park, Y.M.** & Kwan, M.-P. “Assessment of Personal Exposure to Air Pollution and Its Effects on Health: Using Hourly Estimates, Human Movement Data, and Three-Dimensional Visualization to Address the Uncertain Geographic Context Problem.” American Association of Geographers Annual Meeting, San Francisco, CA, April 2016.
- **Park, Y.M.** “A Spatially Filtered Multilevel Model to Account for Spatial Dependency: Application to Self-Rated Health Status in South Korea.” American Association of Geographers Annual Meeting, Chicago, IL, April 2015.
- **Park, Y.M.** “Assessment of Regional Health Inequality in South Korea: A Coupled Multilevel Analysis and Spatial Filtering Method.” The Association of Korean Geographers Conference, Seoul, South Korea, May 2013.
- **Park, Y.M.** “An Evaluation and Suggestion of Photovoltaic Power Plant Locations Based on Environmental and Social Impacts and Sustainability.” The Association of Korean Geographers Conference, Gongju, South Korea, May 2012.
- **Park, Y.M.** “Agriculture Location Analysis Using Kriging and Analytic Hierarchy Process (AHP).” The Korean Cartographic Association Conference, Seoul, South Korea, December 2011.

## PROFESSIONAL SERVICE

---

2022	<b>Session Organizer</b> , “Geospatial Health Symposium #2: Advances in Computational Approaches for Geospatial Health Applications”, American Association of Geographers Annual Meeting, New York, NY, Feb 2022.
2021-2022	<b>Faculty Search Committee</b> , Thomas Harriot College of Arts and Sciences, East Carolina University.
2021	<b>NSF Grant Proposal Reviewer</b> , Trans-Atlantic Platform Recovery, Renewal and Resilience in a Post Pandemic World (T-AP RRR), Directorate for Social, Behavioral and Economic Sciences, NSF.
2021-present	<b>Undergraduate Committee</b> , Department of Geography, Planning, and Environment, East Carolina University.
2020	<b>NSF Grant Proposal Reviewer</b> , Human-Environment and Geographical Sciences Program, NSF.
2020-present	<b>Scholarship Reviewer</b> , Korean-American Association for Geospatial and Environmental Sciences.
2019-present	<b>Graduate Faculty Member</b> , East Carolina University.
2019-present	<b>Social Committee</b> , Department of Geography, Planning, and Environment, East Carolina University.
2017-present	<b>Manuscript Reviewer</b> , <i>Health &amp; Place</i> (5); <i>Computers, Environment and Urban Systems</i> (3); <i>PLOS ONE</i> (2); <i>Annals of the American Association of Geographer</i> (2); <i>Cartography and Geographic Information Science</i> (2); <i>Science of the Total Environment</i> (1); <i>Sustainable Cities and Society</i> (1); <i>Journal of Exposure Science and Environmental Epidemiology</i> (1); <i>Sensors</i> (1); <i>Journal of Transport Geography</i> (1); <i>Cities</i> (1); <i>The Professional Geographer</i> (1); <i>Environmental Hazards</i> (1).

- 2017-18 **Vice President**, Geography Graduate Student Association, Department of Geography and GIS, University of Illinois.
- 2015-16 **Research Review Committee**, School of Earth, Society, and the Environment, University of Illinois.
- 2015-16 **Social Chair**, Geography Graduate Student Association, Department of Geography and GIS, University of Illinois.
- 2011 **Field Trip Assistant**, Department of Geography, Korea University.

## MENTORING & ADVISING

---

- 2021-present **Thesis Advisor:** MS student (Denise Chavez Reyes), Department of Geography, Planning and Environment, East Carolina University.
- 2020-2021 **Thesis Committee Member:** MPH student (Dillon Streuber), Department of Public Health, East Carolina University.
- 2021-present **Thesis Committee Member:** MA student (Benjamin Layton), Department of Geography, Planning, and Environment, East Carolina University.
- 2020-2021 **Thesis Committee Member:** MS student (Lu Kernstine), Department of Biology, East Carolina University.
- 2020-2021 **Thesis Committee Member:** MS student (Samantha Dowiarz), Department of Biology, East Carolina University.
- 2020 **Undergraduate Research Mentor:** Amanda Morrison, Scott Hennis, Leila Coe, Kirk Stanley, Grace Krell, Trek Thorne, and Kaylee Warren