# Michelle Stuhlmacher

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# Academic Appointment

2020-present Assistant Professor, Department of Geography, DePaul University, Chicago, IL.

## Education

2020 Ph.D. - Geography, Arizona State University.

2017 M.A. - Geography, Arizona State University.

2015 B.A. - Geography, George Washington University.

# **Specialties**

Urban Land Systems | Human-Environment Geography | Sustainability Science | Earth Observation & Spatial Analysis | Community-Engaged Research.

## Peer Reviewed Publications

- 12. **Stuhlmacher, M.**, Georgescu, M., Turner, B.L. II., Hu, Y., Goldblatt, R., Gupta, S.\*, Frazier, A., Kim, Y., Balling, R.C. and Clinton, N. (2022). "Are global cities homogenizing? An assessment of urban form and environmental implications". Cities. DOI: 10.1016/j.cities.2022.103705.
- 11. **Stuhlmacher, M.**, Kim, Y., and Kim, J.E. (2022). "The role of green space in Chicago's gentrification". Urban Forestry & Urban Greening. DOI: 10.1016/j.ufug.2022.127569.
- 10. Wagner, M., Wentz, E.A., and **Stuhlmacher, M.** (2022). "Quantifying oil palm expansion in Southeast Asia from 2000-2015: A data fusion approach". Journal of Land Use Science. DOI: 10.1080/1747423X.2021.2020918.
- 9. **Stuhlmacher, M.**, Andrade, R., Turner, B.L. II, Frazier, A.E. and Li, W. (2020). "Environmental outcomes of urban land systems change: Comparing riparian design approaches in the Phoenix metropolitan area". Land Use Policy. DOI: 10.1016/j.landusepol.2020.104615.
- Stuhlmacher, M., Turner, B.L. II, Frazier, A.E., Leffel, J.\* and Kim, Y. (2020). "Institutional shifts and environmental change: A case study from the Republic of Cuba's Período Especial". Journal of Land Use Science. DOI: 10.1080/1747423X.2020.1829119.
- 7. Uludere, N., **Stuhlmacher, M.**, Smith, J.P., Clinton, N., and Georgescu, M. (2019). "Urban agriculture's bounty: Contributions to Phoenix's sustainability goals". Environmental Research Letters. DOI: 10.1088/1748-9326/ab428f.
- Stuhlmacher, M., Patnaik, S., Streletskiy, D., and Taylor, K. (2019). "Cap-and-trade and emissions clustering: A spatial-temporal analysis of the European Union Emissions Trading Scheme". Journal of Environmental Management. DOI: 10.1016/j.jenvman.2019.109352.
- 5. Chhetri, N., **Stuhlmacher, M.**, and Ishtiaque, A. (2019). "Nested pathways to adaptation". Environmental Research Communications. DOI: 10.1088/2515-7620/aaf9f9.

- 4. Wang, C., Myint, S., Fan, P., **Stuhlmacher, M.**, and Yang, J. (2018). "The impact of urban expansion on the regional environment in Myanmar: a case study of two capital cities". Landscape Ecology. DOI: 10.1007/s10980-018-0632-1.
- Clinton, N. Stuhlmacher, M., Miles, A., Uludere, N., Wagner, M., Georgescu, M., Herwig, C., and Gong, P. (2018). "Global geospatial ecosystem services estimate of urban agriculture". Earth's Future. DOI: 10.1002/2017EF000536.
- Goldblatt, R., Stuhlmacher, M., Tellman, B., Clinton, N., Hanson, G., Georgescu, M., Wang, C., Serrano-Candela, F., Khandelwal, A., Cheng, W., and Balling, R. (2018). "Mapping urban land cover: A novel machine learning approach using Landsat and Nighttime Lights". Remote Sensing of Environment. DOI: 10.1016/j.rse.2017.11.026.
- Häger, A., Fernández Otárola, M., Stuhlmacher, M., Acuña Castillo, R., and Contreras Arias, A. (2015). "Effects of landscape composition and management on the diversity and structure of tree species assemblages in coffee agroforests". Agriculture, Ecosystems and Environment. DOI: 10.1016/j.agee.2014.08.022.

# Manuscripts in Progress

Curran, W., **Stuhlmacher, M.**, and Anderson, E. (Submitted). "Getting to Just Green Enough in Pilsen, Chicago". Landscape Architecture Plus.

## Funded Grants and Awards

#### External:

- 2022-2024 **NASA Equity and Environmental Justice**, National Aeronautics and Space Administration: Earth Science Applications. Role: PI, Grant Number: 80NSSC22K1676, Title: "Designing for Just Green Enough: A Data Integration Tool for Informing Community Green Space Planning", Award: \$250,000.
  - 2022 **Carolyn Merry Mini-Grant (TRELIS)**, University Consortium for Geographic Information Science, Role: PI, Title: "Where do we go from here? An open-source TRELIS toolkit", Award: \$2,500.
  - 2018 **Heidelberg Laureate Forum**, Oak Ridge Associated Universities and National Science Foundation, Award: \$5,000.
- 2014-2015 **Udall Scholarship**, Morris K. Udall and Stewart L. Udall Foundation, Award: \$5,000.
- 2013-2015 **Hollings Scholarship**, National Oceanic and Atmospheric Administration, <u>Award:</u> \$22,500. Internal:
- 2021-2022 **Urban Collaborative Community Research Initiative**, Urban Collaborative, DePaul University, Title: "Designing for Just Green Enough: Greening without Gentrification", <u>Award:</u> \$25,000.
  - 2021 Undergraduate Research Assistant Program, College of Liberal Arts and Social Sciences, DePaul University, <u>Title:</u> "The Patterns and Processes of Urban Green Space: A Systematic Review of Urban Applications of Landscape Metrics", <u>Award:</u> \$2,250.
  - 2021 **Research Equipment Grant**, University Research Council, DePaul University, <u>Title:</u> "Are Informal Greenspaces "Just Green Enough"? A Spatiotemporal Analysis of Green Gentrification in Chicago", Award: \$3,060.
  - 2020 **Graduate Professional Development Award**, ASU School of Geographical Sciences and Urban Planning, <u>Award</u>: \$1,400.

<sup>\*</sup> indicates undergraduate collaborator

- 2020 Travel Grant, ASU Graduate & Professional Student Association, Award: \$950.
- 2019-2020 Emeritus Faculty Fellowship, ASU Emeritus College & ASU Graduate College, Award: \$1,400.
  - 2019 Collaborative Graduate Student Research Grant, Central Arizona Project Long Term Ecological Research (CAP LTER), NSF Grant DEB-1832016, Award: \$6,000.
  - 2019 Completion Fellowship, ASU Graduate College, Award: \$8,500.
  - 2019 Travel Grant, ASU Graduate & Professional Student Association, Award: \$950.
  - 2018 Collaborative Graduate Student Research Grant, Urban Resilience to Extremes Sustainability Research Network (UREx SRN), NSF Grant BCS-1444755, Award: \$6,000.
  - 2018 **Graduate Student Research Grant**, Central Arizona Project Long Term Ecological Research (CAP LTER), NSF Grant DEB-1637590, <u>Award:</u> \$4,000.
- 2017-2018 Lattie and Elva Coor Building Great Communities Graduate Fellowship, Award: \$3,000.
  - 2017 **Global Intensive Experience Scholarship**, ASU School of Sustainability, <u>Award:</u> \$600.
- 2016-2017 **Gilbert F. White Fellowship**, ASU School of Geographical Sciences and Urban Planning, <u>Award:</u> \$24,000.
  - 2017 Travel Grant, ASU Graduate & Professional Student Association, Award: \$914.
  - 2016 Travel Grant, ASU Graduate College, Award: \$500.
  - 2016 Travel Grant, ASU Graduate & Professional Student Association, Award: \$810.
  - 2014 **Sigelman Undergraduate Research Enhancement (SURE) Award**, GWU University Honors Program, Award: \$500.
  - 2014 Undergraduate Research Enhancement Fund Award, GWU, Award: \$655.
  - 2012 J.B. & Maurice C. Shapiro Public Service Award, GWU, Award: \$5,500.

## Published Datasets

- 2021 Frazier, A.E., Sehner, B., **Stuhlmacher, M.**, and Watkins, L. "Composited land surface temperature of the greater Phoenix, Arizona, USA metropolitan area." Environmental Data Initiative. DOI: 10.6073/pasta/ebe6d816dcad68ad4d2bd283c5830a63
- 2019 **Stuhlmacher, M.**, Watkins, L. "Normalized Difference Vegetation Index (NDVI) derived from National Agriculture Imagery Program (NAIP) data for the central Arizona region." Environmental Data Initiative.
  - DOI 2010: 10.6073/pasta/bc90bb968fe198c58e6abdfaf8cfa0d5
  - DOI 2013: 10.6073/pasta/845bb4a8b271a542942e47afcc326196
  - DOI 2015: 10.6073/pasta/906400c74eae1bf4b736af4d77b17737
  - DOI 2017: 10.6073/pasta/b4cc65eea352cd50ca0256a5139dfd75
- 2019 **Stuhlmacher, M.** "Soil-Adjusted Vegetation Index (SAVI) derived from National Agriculture Imagery Program (NAIP) data for the central Arizona region." Environmental Data Initiative.
  - DOI 2010: 10.6073/pasta/ed991a96b1500a0c245ed7faac5457e3
  - DOI 2013: 10.6073/pasta/949a1bf1401772736bf2e46482cf3522
  - DOI 2015: 10.6073/pasta/5a63cb1d564318c2400fc6a41a475d23
  - DOI 2017: 10.6073/pasta/2007d7a24828b4681f5e19e3606d9591
- 2019 **Stuhlmacher, M.**, Watkins, L. "Numerical summaries of vegetation indices and land surface temperature derived from remotely sensed imagery in Phoenix Area Social Survey (PASS) neighborhoods of central Arizona." Environmental Data Initiative. DOI: 10.6073/pasta/e92101ea8e9637d91f5a9ebfd987c3f3

## Honors and Awards

- 2022 TRELIS (Training and Retaining Leaders in STEM Geospatial Sciences) Fellow, Selected through a competitive process to participate in a professional development program for academic women in the geospatial sciences. Program funded via NSF Award 1660400.
- 2017-2020 **ASU College of Liberal Arts and Science Student Leader Award**,
  Nominated by the School of Geographical Sciences and Urban Planning for contributions to the College or ASU.
  - 2019 Most Interdisciplinary Team and Best Presentation Award, Geo For Good Buildathon, Two prizes awarded to our buildathon team for developing guidelines and example materials for an open source Google Earth Engine curriculum at the Google Geo For Good Summit.
  - 2019 College of Liberal Arts and Science Graduate Excellence Award,
    Monetary award recognizing outstanding doctoral and master's degree students who were honored
    nationally or internationally during the 2018-2019 academic year.
  - 2018 Honorable Mention at the Institute for Social Science Research Poster Competition, Awarded at the bi-annual Institute for Social Science Research poster competition open to all graduate students at ASU.
  - 2015 Robert Campbell Prize,

Award given annually to one graduating geography senior at George Washington University who has an excellent scholarly record, and also has enhanced the department in other ways.

# Teaching and Mentoring

Earth Observation I (undergraduate), DePaul University

Earth Observation II (undergraduate/graduate), DePaul University

GIS II: Community GIS (undergraduate), DePaul University

GIS for Community Development (graduate), DePaul University

GIS for Sustainable Urban Development (graduate), DePaul University

**Geospatial Analysis with Google Earth Engine,** (undergraduate/graduate), Arizona State University

Physical Geography Lab (undergraduate), Arizona State University

#### Mentoring:

- 2021-2022 Isabella Corya, Sustainable Urban Development Graduate Research Assistant
  - 2022 Emma Lipets, DePaul STEM Showcase,

Poster: "Change in Snowfall and Snowpack Patterns in the Sierra Nevada Mountains"

- Josephine Stratman, Recipient of Undergraduate Research Assistant Program Funding, DePaul STEM Showcase, Poster: "Urban Expansion and Temperature in Delhi, India"
- 2021 Charlie Koloms, DePaul STEM Showcase,

Poster: "Vegetation Analysis of Organic Urban Agriculture Development of Oosterwold, the Netherlands 2010-2020"

2021 Allison Marcella, DePaul STEM Showcase,

Poster: "Built-up Spaces and Urban Warming Over Time in Vancouver, Canada"

- 2018-2019 **Sarthak Gupta,** BASIS Peoria High School Arizona Senior Project: "Quantifying Urban Encroachment on Forest Land" awarded best undergraduate poster at ASU Urban Climate Research Center Poster Contest, March 2019
  - 2018 **Vishesh Gupta,** BASIS Scottsdale High School Arizona Senior Project: "Big Data for Climate Science"

## Invited Talks

- **Stuhlmacher, M.** "Satellite to green space planning", Ladies of Landsat, Landsat 50th anniversary Capitol Hill celebration, Washington, DC. July 21st.
- **Stuhlmacher, M.** and Kim, Y. "Gentrification and urban green space in Chicago", Geo For Good, Virtual. October 20th.
- **Stuhlmacher, M.**, "Equity and Inclusion in Academic Leadership", AlumNode Coffee Break (Heidelberg Laureate Forum), Virtual. May 20th.
- **Stuhlmacher, M.**, "Remote Sensing Curriculum Design with Google Earth Engine", Google Earth Engine Education Group, Virtual. November 20th.
- **Stuhlmacher, M.**, "Geospatial Applications for Promoting Sustainable Urban Land Systems", Geography Department Colloquium, University of Northern Iowa, Virtual. March 6th.

## Conference Presentations

- 2022 Kolak, M., Anderson, E., Halpern, D., Paykin, S. and **Stuhlmacher, M.** "Harmonizing Environmental Data and Partnerships for Resilient Futures", MetroLab Summit, Chicago, IL. June 2nd.
- **Stuhlmacher, M.**, Kim, Y. "Gentrification and urban green space in Chicago", American Geophysical Union Fall Meeting, Virtual. December 15th.
- **Stuhlmacher, M.**, Georgescu, M., Hu, Y., Turner, B.L. II, Goldblatt, R., Gupta, S.\*, Frazier, A., and Clinton, N. "Is urban form homogenizing in global cities? Assessing built footprint changes and implications for the urban heat island", American Association of Geographers Annual Meeting, Virtual. April 9th.
- 2020 Gupta, S.\*, **Stuhlmacher, M.**, Georgescu, M. "Quantifying Urban Encroachment on Forests Using Machine Learning", American Association for the Advancement of Science Annual Meeting, Seattle, WA. February 14th.
- **Stuhlmacher, M.**, Earl, S. Watkins, L. "Nummerical summaries and raster data of vegetation indices and land surface temperature derived from remotely sensed imagery." Central Arizona-Phoenix LTER Annual Meeting, Scottsdale, AZ. January 17th.
- **Stuhlmacher, M.**, Andrade, R., Turner, B.L. II. "The Ecological Outcomes of Riverfront Redevelopment in Tempe, Arizona." US Regional Association for the International Association for Landscape Ecology Annual Meeting, Fort Collins, CO. April 7th.
- **Stuhlmacher, M.**, Andrade, R., Turner, B.L. II. "The Ecological Outcomes of Land System Architecture Change: A Case Study of Riverfront Redevelopment in Tempe, Arizona." Central Arizona-Phoenix LTER Annual Meeting, Scottsdale, AZ. January 11th.
- 2019 Uludere, N., **Stuhlmacher, M.**, Smith, J.P., Georgescu, M. "Growing Resilience: The Urban Agriculture Potential in Metro Phoenix." American Meteorological Society Annual Meeting, Phoenix, AZ. January 7th.
- **Stuhlmacher, M.**, Georgescu, M., Goldblatt, R., Gupta, S.\*, Gupta, V.\*, and Clinton, N. "Urbanization Dynamics in the United States and India: Assessing Growth Patterns from Landsat Time-Series." American Geophysical Union Fall Meeting, Washington, DC. December 13th.
- **Stuhlmacher, M.**, Goldblatt, R., Georgescu, M., Gupta, S.\*, Clinton, M. "Mapping Urban Landcover with Machine Learning Techniques". Heidelberg Laureate Forum, Heidelberg, Germany. September 27th.
- **Stuhlmacher, M.**, Goldblatt, R., Georgescu, M., Clinton, M., Tellman, B., Hanson, G., Khandelwal, A. "30-meter Resolution Urban Classification in Google Earth Engine". Central Arizona-Phoenix LTER Annual Meeting, Scottsdale, AZ. January 5th.

- 2017 Clinton, N., Stuhlmacher, M., Miles, A., Uludere, N., Wagner, M., Georgescu, M., Herwig, C., Gong, P. "A Global-Scale Estimate of Ecosystem Services from Urban Agriculture: Understanding Incentives for Natural Capital in Cities". American Geophysical Union Fall Meeting, New Orleans, LA. December 13th.
- 2017 **Stuhlmacher, M.**, Goldblatt, R., Thai, G., Roy, S. "Quantifying Urbanization and Deforestation Outcomes from India's National Highway's Development Project". Geo4Dev. Berkeley, CA. September 6th.
- 2017 **Stuhlmacher, M.**, Georgescu, M., Clinton, N. "Google Earth Engine's Utility for Urban Applications". Urban Water Innovation Network Annual Meeting. Fort Collins, CO. July 31st.
- 2017 **Stuhlmacher, M.**, Goldblatt, R., Tellman, B., Clinton, N., Hanson, G., Georgescu, M., Wang, C., Serrano-Candela, F., Khandelwal, A. "Global Urban Initiative". Google Earth Engine Users Summit. Mountain View, CA. June 12th.
- 2017 **Stuhlmacher, M.**, Patnaik, S. "The Economic Geography of International Cap and Trade Programs: Evidence from the European Union Trading Scheme". American Association of Geographers Annual Meeting, Boston, MA. April 9th.
- 2016 Stuhlmacher, M., Wang, C., Georgescu, M., Tellman, E., Balling, B., Clinton, N., Collins, L., Goldblatt, R., and Hanson, G. "Towards a 30m Resolution Times Series of Historical Global Urban Expansion: Exploring Variation in North American Cities". American Geophysical Union Fall Meeting, San Francisco, CA. December 15th.
- 2016 **Stuhlmacher, M.** "Governance and Adaptation: A Case Study of Urban Agriculture in Cuba's Special Period". Association of American Geographers Annual Meeting, San Francisco, CA. April 1st.
- 2015 **Stuhlmacher, M.** and Squires, M. "Regional Snowfall Impact". Association of American Geographers Annual Meeting: GIS Poster Session, Chicago, IL. April 24th.
- 2014 **Stuhlmacher, M.** and Squires, M. "Societal Impact of Snowfall". NOAA Undergraduate Scholars Research Symposium, Silver Spring, MD. July 27th.
- 2013 **Stuhlmacher, M.** and Häger, A. "Land-use factors influencing plant similarity between forest and agroforests". Association of American Geographers Annual Meeting, Tampa, FL. April 12th.
- \* indicates undergraduate collaborator

#### Service

#### Department:

- 2022 **Diversity and Inclusion Committee**, Department of Geography, DePaul University.
- 2021-2022 Curriculum Committee (Chair), Department of Geography, DePaul University.
  - 2020 Assessment Committee (GEO 233/INT 388), Department of Geography, DePaul University.
- 2018-2020 Diversity and Inclusion Committee, School of Geographical Sciences & Urban Planning, ASU.
- 2017-2020 Incoming PhD Student Liaison, School of Geographical Sciences & Urban Planning, ASU.
- 2016-2017 **Graduate Student Committee (President)**, School of Geographical Sciences & Urban Planning, ASU.
- 2015-2016 **Colloquium Student Coordinator**, School of Geographical Sciences & Urban Planning, ASU. University:
  - 2022 **Committee Member**, Engineering Program Steering Committee, DePaul University.
- 2021-2022 Committee Member, Annual Undergraduate STEM Showcase, DePaul University.
- 2021-2022 Advisory Board, Scientific Inquiry Learning Domain, DePaul University.

- 2021-2022 **Scholarship Committee**, College of Liberal Arts and Social Sciences, DePaul University.
- 2021-2022 Advisory Board, Sustainable Urban Development Graduate Program, DePaul University.
  - 2021 Reviewer, Annual Undergraduate STEM Showcase, DePaul University.
- 2016-2019 **Steering Committee Member**, Graduates in Integrative Society and Environment Research (GISER), ASU.
- 2015-2019 Research Grant Reviewer, Graduate and Professional Student Association, ASU.

#### Discipline:

- 2022 **Student Lightening Talk Competition Judge**, University Consortium for Geographic Information Science (UCGIS) Symposium.
- 2021 **Student Paper Competition Judge**, Landscape Specialty Group, AAG Annual Meeting.
- 2019-2022 Ladies of Landsat,

Team member responsible for drafting weekly "Manuscript Monday" tweets which highlight the research of women in remote sensing via the Ladies of Landsat (@LadiesOfLandsat) Twitter account.

## Workshop and Conference Session Organization:

- 2022 **Workshop Organizer**, "Earth Engine Education Workshop", GeoForGood, Mountain View, CA. October 7th.
- 2021 **Session Organizer**, "Urban Remote Sensing: Methods and Applications I & II", AAG Annual Meeting, Virtual Meeting. April 9th.
- 2021 **Series Organizer**, Earth Engine Educators (EE-Edu) Virtual Speaker Series. Recorded talks available here.
- 2020 **Session Organizer**, "Urban Remote Sensing Networking Session", Geo For Good 2020, Virtual Meeting. October 21st.

#### Peer Reviewer:

BioScience,

Ecology and Society,

Environmental Research Letters,

Environmental Science and Technology,

Frontiers in Earth Science,

IEEE Journal of Selected Topics in Applied Earth Observations & Remote Sensing,

Journal of Geophysical Research: Atmospheres,

Landscape and Urban Planning,

Landscape Ecology,

Proceedings of the National Academy of Sciences,

Remote Sensing.

# Media Coverage

- 2022 "A Pilsen Group Is Promoting Green Spaces In The Neighborhood By Building Butterfly Sanctuaries, Giving Away Plants", *Block Club Chicago*, June 21. <u>Link</u>.
- 2021 "Dangerous Heat, Unequal Consequences", The Center for Public Integrity, Jan 19. Link.
- 2020 "Growing Up Urban Farms Have the Potential to Transform Phoenix", *Phoenix New Times*, April 2nd. <u>Link</u>.
- 2020 "Greening Phoenix Through Urban Agriculture (Episode 29)", Future Cities Podcast, Feb 6th. Link.

- 2019 "Ladies of Landsat (Season 6: Episode 1)", Scene from Above Podcast, Oct 22nd. Link.
- 2019 "Urban agriculture could help food desert cities met sustainability Goals", *Earth.com*, Oct 6th. Link.
- 2019 "Where's the Waste? A 'Circular' Food Economy Could Combat Climate Change", *New York Times*, Sep 21st. <u>Link</u>.
- 2018 "ASU student joins meeting of the greatest minds in computer science and mathematics", *ASUNow*, Oct 8th. <u>Link</u>.
- 2018 "Crops take root in unlikely city spaces", Financial Times, Oct 15th. Link.
- 2018 "Big Data Suggests Big Potential for Urban Farming", CityLab, Feb 15th. Link.
- 2018 "Urban farms 'critical' to combat hunger and adapt to climate change", Reuters, Jan 11th. Link.

# Community Involvement and Outreach

- 2021-2022 Coatney, E., Manschot, K., and **Stuhlmacher, M.**, "Stomachs, Hearts, and Minds". A Podcast on Food and Food Systems.
  - 2019 Khendrick, K., **Stuhlmacher, M.**, Cottle, J. "My Al Can Beat Up Your Decision Tree: The Lastest in Technology Buzzwords". Science Panels at Phoenix Fan Fusion (formerly Phoenix Comicon). Phoenix, AZ. May 24th.
  - 2018 **Stuhlmacher, M.** "Rio Reimagined". Center for the Future of Arizona. Phoenix, AZ. May 8th.
  - 2016 Smith, H., Davis, K., **Stuhlmacher, M.**, Kalige, N. and Baskin-McNulty, R. "Learning to Code: the first line in defense against a robot uprising". Science Panels at Phoenix Comicon. Phoenix, AZ. June 4th.
  - 2016 **Hands on Science Volunteer**. Tour guide for elementary school girls visiting several STEM labs on ASU's Tempe Campus.

# Memberships

American Association of Geographers

Phi Beta Kappa

Gamma Theta Upsilon

American Geophysical Union

North American Regional Association for the International Association for Landscape Ecology