ANA LUCRECIA RIVERA RIVERA

Department of Geography, Michigan State University, East Lansing, MI
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EDUCATION

Ph.D. in Geography: 2023 (expected)
Michigan State University (MSU), East Lansing, MI; Overall GPA: 4.0/4.0
Preliminary title: Urban Heat Island in Monterrey, Mexico: A Human-Environment Interaction Study

Master of Arts in Geography: 2018
San Jose State University (SJSU), San Jose, CA; Overall GPA: 4.0/4.0
Thesis: Distribution of urban heat islands and their relationship with urban morphology in San Jose, California

Master of Science in Environmental Systems: 2012
Instituto Tecnologico y de Estudios Superiores de Monterrey (ITESM), Mexico; Overall GPA: 94.75/100
Thesis: Analysis of urban heat islands in Monterrey, Mexico

Bachelor of Architecture: 2008
Universidad de Monterrey, Mexico; Overall GPA: 85.34/100
Final Project: Regeneration of a former train station

RESEARCH EXPERIENCE

GIS Consultant: Geospatial Center, Stanford University; 2016-2018
- Provide GIS support to the academic community
- Create cartographic products for publications
- Develop and teach new QGIS workshops
- Locate, acquire, and validate primary types of geographical data sources

GIS Analyst: Department of Meteorology, SJSU, *CA;* 2017-2018
- Create Local Climate Zone Data for uWRF. Interdisciplinary study between SJSU, CUHK, and UC Berkeley
- Develop cartographic products for NASA Health and Air Quality and Applied Science (HAQAST) Project

Remote Sensing Analyst: Synergis at Google, Mountain View, CA; 2016-2017
- Track high definition satellite imagery; perform quality inspections
- Capture imagery patterns for decision making

GIS Technician: ITESM; *Nuevo Leon, Mexico;* 2010-2011 and 2013
- Assess Hurricane Alex impacts via LiDAR for the National Water Commission (CAN) of Mexico
- Prepare reports for grant submission and write papers for journal publication

Cartographer: El Colegio de la Frontera Norte, *Mexico;* 2012
- Design and produce maps for the Program of Urban Development & Land-Use, Coahuila State, Mexico
- Perform qualitative assessment of Habitat Program, Mexican Ministry of Social Development

TEACHING EXPERIENCE

Teaching Assistant: Department of Geography, Environment and Spatial Sciences, MSU; 2019-Present
- Undergraduate course: Health and Medical Geography
- Online undergraduate courses: Introduction to Meteorology, Intro to Geographic Information

GIS Instructor: The GIS Education Center at City College of San Francisco, CA; 2017-2018
- Develop and teach ArcPro workshops for the City and County of San Francisco staff
- Teach Introduction to Open-Source GIS (QGIS) to working professionals

Lecturer (Graduate): Urban Planning Department, SJSU; 2018
- Graduate course: GIS Overview-Urban Planning Applications

Instructional Student Assistant: Urban Planning and Geography Departments, SJSU; 2016- 2017
- Undergraduate course: Introduction to Mapping and Geographic Information Systems
- Graduate course: Introduction to GIS for Urban Planners

Teaching Assistant: ITESM; *Nuevo Leon, Mexico;* 2010- 2011 and 2012- 2013
- Undergraduate courses: GIS for Civil Engineers; Environmental Ordinance

HONORS AND FELLOWSHIPS

Michigan State University, Diversity Torch Award; 2020
Ford Foundation, Predoctoral Competition, Honorable Mention; 2019
Michigan State University, Enrichment Fellowship, five years full tuition; 2018-2023
San Jose State University, Honor Society of Phi Kappa Phi, inductee; 2016
National Council for Science and Technology (CONACYT), Fellowship Program to Train and Develop Scientists and Technologists (PFDCyT, Mexico), monthly stipend; 2010-2011
Universidad de Monterrey (Mexico), Outstanding Project: Architecture Undergraduate Program, 2008

VOLUNTEER EXPERIENCE

Advisory Board, Committee for Green Foothills, CA, 2021-Current
Co-president, Support Women in Geography (MSU Chapter), *MI,* 2019-2020
GIS/Data Volunteer, Indicators Committee at Sustainable San Mateo County, *CA,* 2014-Current
Board Member, Lansing Latino Health Alliance*, MI,* 2019
Board Member, New Leaders Council, *CA*, 2016-2017
Committee Member, Silicon Valley Water Conservation Awards, *CA*, 2014-2018
GIS/Data Volunteer at Transform California, *CA,* 2015
GIS/Data Volunteer at Sierra Club, Loma Prieta Chapter, *CA.* 2015
Content Leader at Sustainable Silicon Valley, *CA,* 2013-2014
Regional Technical Staff of the LEED Program at Mexican Green Building Council, *Mexico,* 2011
Member of Consulting Committee at ECOVIA (Bus of Rapid Transit), *Mexico,* 2011

SKILLS

Software:
GIS: ArcInfo, ArcView, ArcGISPro, ArcMap, QGIS
Remote Sensing: ERDAS, SAGA, Earth Engine, Mars (for LiDAR)
Architecture and Design: Autocad, 3D Viz, Freehand, Photoshop, Illustrator
Statistics and Data Visualization: SPSS, Tableau, Stata
Environmental Modeling: ENVI-Met (Building proficiency)

Computer Languages: Python, R, SQL (Basic proficiency)

Languages: Spanish (Native), English (Complete fluency), French (Elementary proficiency)

US VISA Status: Permanent Resident (Green Card) allowed to work until November 2025

PUBLICATIONS

Rivera, A., Yepez, F.D., Moore, N.J., Kim, J.H., Mendoza, A., Lozano-Garcia, F., and Bornstein. R.D., n.d.: Longitudinal Analysis of the Monterrey UHI: Built Environment and Human Risk. *Remote Sensing*. *Under Review.*

Freedman, F.R.; English, P.; Wagner, J.; Liu, Y.; Venkatram, A.; Tong, D.Q.; Al-Hamdan, M.Z.; Sorek-Hamer, M.; Chatfield, R.; **Rivera, A.**; Kinney, P.L. 2020: Spatial Particulate Fields during High Winds in the Imperial Valley, California. *Atmosphere* 2020, 11, 88. https://doi.org/10.3390/atmos11010088

McRae, I., Freedman, F., **Rivera, A.,** Li, X., Dou, J., Cruz, I., Bornstein, R. (2020). Integration of the WUDAPT, WRF, and ENVI-met models to simulate extreme daytime temperature mitigation strategies in San Jose, California. *Building and Environment*, *184*, 107180. https://doi.org/https://doi.org/10.1016/j.buildenv.2020.107180

Rivera, A., 2017: Extreme heat and climate change (policy brief). Millennial Compact with America: An Agenda for the Future. New Leaders Council. Washington, DC

Yepez, F., Lozano, D., Vela, P., and **Rivera, A**., 2013: Assessing hydrometeorological impacts with terrestrial and aerial Lidar data in Monterrey, México*. ISPRS-International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, **1(2),** 271-276

PRESENTATIONS

McRae, I., Bornstein, B., Freedman, F., **Rivera, A**., Dronova, H., Fraker, H., Ren, C., Li, X., and Dou, J. 2020. Integration of the WUDAPT, WRF, and ENVI-Met Models to Simulate Urban Heat Island Mitigation Strategies in Downtown San Jose, California. *100th American Meteorological Society Annual Meeting,* Boston, MA

McRae, I., Freedman F., **Rivera, A.** 2018: Bridging WUDAPT, urbanized WRF and ENVI-met research platforms to study the effects of urban morphology and meteorology on building-scale design. *10th International Conference on Urban Climate,* New York, NY

McRae, I. Freedman F., **Rivera, A.** 2017: WUDAPT, uWRF, ENVI-MET Coupling for Site-Specific Urban Heat Island Analysis in San Jose, CA. *2017 Community Modeling and Analysis System Conference,* Chapel Hill, NC

Freedman, F., **Rivera A**., Dou, J., Ren, C., Bornstein, R. 2017: WUDAPT-based urban-WRF and HYSPLIT-STILT modeling of San Jose, California: Developments to support case study applications for urban air pollution and heat islands. *2017 Meteorology and Climate - Modeling Air Quality Conference,* Davis, CA

Rivera, A., 2017**:** Local Climate Zones (LCZ) for Urban Heat Analysis (UHI) in Downtown San Jose, CA. Poster, *23rd Annual California GIS Conference,* Oakland, CA

Rivera, A., 2016: Identifying population vulnerable to extreme heat events in San Jose, CA. Poster, *American Geophysical Union Meeting,* San Francisco, CA

Sain, S., **Rivera, A**., Skancke, A., and Rohrmeier, K., 2016: Applied urban geographic research techniques. SJSU graduate student presentation, panel session, *American Association of Geographers Meeting*, San Francisco, CA

Rivera, A., 2016: Characterizing vulnerable population living under UHIs in Santa Clara County, California. *Geographical Society Annual Conference,* San Jose, CA

Rivera, A., 2016: Environmental factors and their impact on American Communities. *SJSU College of Social Science, Graduate Student Colloquia,* San Jose, CA

Rivera, A., 2016: Combining sensors to map urban surfaces: An object-based classification approach. *22nd Annual California GIS Conference,* Anaheim, CA

Yepez, F, Lozano D., **Rivera A**., and Vela, P., 2013: Evaluacion de impactos hidrometeorologicos a lo largo del Río Santa Catarina empleando LIDAR terrestre y aéreo. *Reunion Nacional SELPER-Mexico, San Luis Potosi, Mexico*

Rivera, A., and Lozano, D., 2012: Analysis of urban heat islands in Monterrey City, Mexico using remote sensing and geographic information systems. *Reunion Internacional SELPER Conference*, Cayenne, French Guiana

Rivera, A., Villareal, J., and Lozano, D., 2011: Identificación de zonas prioritarias de atención por parametros sociales y areas verdes en el Area Metropolitana de Monterrey. *Reunion Nacional SELPER,* Morelia, Mexico. ISBN: 978-607-02-3172-8