

A. MARCELA SUAREZ

Curriculum Vitae

Department of Geography & Environmental Studies. University of New Mexico
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ACADEMIC APPOINTMENTS

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| 2025 | Assistant Professor
Department of Geography & Environmental Studies
University of New Mexico |
| 2021 - 2025 | Assistant Teaching Professor of Geography
Department of Geography
The Pennsylvania State University |
| 2020 - 2021 | Postdoctoral Research Associate
Center for Spatial Studies
University of California, Santa Barbara |

EDUCATION

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| 2020 | Doctor of Philosophy in Geography
University of California, Santa Barbara (UCSB)
Committee: Keith Clarke (Chair), Dan Montello & Leila Carvalho
<i>Dissertation</i> : "Tweets as information for emergency response during weather-related disaster events: Methods, constraints and a geographical perspective" |
| 2011 | Master of Science in Disaster Risk Management and Emergency Response
Department of Geology
University of Costa Rica. San Jose, Costa Rica
<i>Thesis</i> : "Landslides Susceptibility Mapping Based on Technical and Social Approaches in the Viejo River Basin, Puriscal- Costa Rica" |
| 2005 | Bachelor of Engineering in Cadastral Engineering and Geodesy
Department of Engineering
Universidad Distrital "Francisco José de Caldas." Bogota, Colombia |

PUBLICATIONS

Peer-reviewed Papers

- In Press. **Suarez, A. M.** & Clarke, K. C. Filtering the Storm: Evaluating the Effectiveness of Applying Spatiotemporal Filters to Twitter Data for Identifying Actionable Information for Emergency Response. *Transactions in GIS*.
- 2022 **Suarez, A. M.** & Clarke, K. C. A Geographical and Content-based Approach to Prioritize Relevant and Reliable Tweets for Emergency Management. *Cartography and Geographic Information Science*, 49:5, 443-463.
- 2022 Goto, E. A., **Suarez, A. M.**, Ye, H. Spatial Analysis of Social Vulnerability in Sao Paulo city, Brazil. *Journal of Applied Geography*. 140 (March 2022). 102653. Elsevier.
- 2009 **Suarez, A. M.**, Peraldo, G., Badilla, E & Obando, L. Geomorphological zonation for landslide susceptibility assessment in the basin of the Viejo River, Puriscal, Costa Rica. *Revista Geológica de América Central*. Edición N. 41. (In Spanish).

Peer-reviewed Short Papers or Extended Abstracts

- 2019 **Suarez, A. M.** & Clarke, K. C. Geographic and Content-based Prioritization of Tweets During Weather-Related Disaster Events for Emergency Management. *Proceedings of the 6th International Conference on Information Systems for Crisis Response and Management*. Valencia, Spain. May 19-22. (Poster Session).
- 2017 **Suarez, A. M.** & Clarke, K. C. Leveraging Spatio-temporal Information to Enrich Thematic Clustering of Twitter Posts. *Proceedings of the International Symposium on Location-based Social Media Data and Tracking Data*. Washington, DC. July 1-2.

CONFERENCE PRESENTATIONS

- 2023 **Suarez, A. M.** Spatio-temporal filtering of tweets to improve the identification of actionable information for emergency management. *North American Cartographic Information Society Conference*. Pittsburgh, PA. October 11-14.
- 2019 **Suarez, A. M.** Using Citizen Reports and Authoritative Geographic Information to Assess Tweets Reliability: The Case of Weather-Related Disaster Events. *Association of American Geographers Annual Meeting*. Washington, DC. April 7.
- 2017 **Suarez, A. M.** Using Spatio-temporal Data to Enrich Thematic Clustering of Twitter Reports of Extreme Weather Events. *Association of American Geographers Annual Meeting*. Boston, Massachusetts. April 5-9.
- 2016 **Suarez, A. M.** & Ye, H. Spatio-temporal Analysis of Social Media Response After a Flood Event. *Association of American Geographers Annual Meeting*. San Francisco, CA. March 29 – April 2.

- 2007 **Suarez, A. M.**, González, E. & Pinzón, J. 2007. Georeferencing for Modeling and Zoning Mass Movement Hazard in the Municipality of Tena, Department of Cundinamarca, Colombia. *32th International Symposium of Remote Sensing for Environmental Uses*. Costa Rica.

INVITED TALKS

- 2022 Converging on Spatial Data Science. *The Third Spatial Data Science Symposium*. (SDSS 2022). Virtual. September 22-23, 2022. Panelist.
- 2019 Leveraging Crowdsourcing and Citizen Science to Produce Volunteer Geographic Information for Hazard Science, Disaster Research, and Emergency Management. *Association of American Geographers Annual Meeting*. Washington, DC. April 6. Panelist.
- 2012 “Geographic Information Systems as a Tool for Risk Management and Emergency Response”. Regional Workshop for Response Team. Pan American Health Organization. Bogota.
- 2009 4th Caribbean Conference on Comprehensive Disaster Management. “Strengthening CDM through Youth and Community Empowerment”. Montego Bay, Jamaica.

FELLOWSHIPS, AWARDS, AND GRANT

- 2022 ‘How to Navigate and Chart a Course Forward for Women+ Graduate Students in GIScience.’ A UCGIS-TRELIS Carolyn Merry Mini-Grant. \$6,000
- 2022 Training and Retaining Leaders in STEM-Geospatial Sciences (TRELIS) Fellow. Selected through a competitive process to participate in an intensive program of professional development for academic women in the geospatial sciences. Program funded by the US National Science Foundation (Award #1660400).
- 2022 The Golden Compass Fellow, awarded by TRELIS, UCGIS, American Association of Geographers (AAG) and University of Northern Colorado.
- 2019 Doctoral Student Travel Grant. UCSB Academic Senate
- 2016, 2017, 2019 Jack & Laura Dangermond Travel Fellowship
- 2013 IFGI semester Scholarship. Institute for Geoinformatics, University of Münster.
- 2005 Outstanding Dissertation Award. Distrital University “Francisco Jose de Caldas”.

RESEARCH EXPERIENCE

- 2020 **Research Intern**
Pan American Health Organization (PAHO/WHO)
- Collect and prepare geographic and non-geographic information required for emergency response (basic cartography, census, and health centers' capacity)
 - Create maps and geo-visualizations to inform emergency response decisions
 - Provide support in the analysis of the existing information related to emergency response, hazards, and vulnerabilities
- 2014 - 2020 **Doctoral Researcher**
Geography Department. UC Santa Barbara.
- Cleaned and pre-processed social media data as well as spatial data related to hazards and disasters.
 - Designed new visuals and an interactive web app to explore and analyze spatio-temporal data related to disasters and Twitter content.
 - Evaluated the role played by both the temporal evolution of the disaster and the spatial distribution of tweets in summarizing their content for emergency management.
 - Designed a geographic and content-based approach for classifying and filtering tweets during weather-related disaster events.
- 2019 **Research Assistant**
Ventura Heatmap Project.
UCSB Transportation and Parking Services.
- Created heatmap to guide the location of new park-and-ride points for UCSB students in Ventura county. The map was created using R software.
 - Cleaned dataset with bus riders addresses and geocoded them. Fall.
- 2016 **Research Assistant**
Project on the UC Carbon Neutrality Initiative.
Campus Sustainability Program. UC Santa Barbara.
- Determined optimum locations for solar panels on UCSB campus based on LIDAR images. Summer.
- 2006 - 2009 **Graduate Student Researcher**
Masters dissertation: "Landslides Susceptibility Mapping Based on Technical and Social Approaches in the Viejo River Basin, Puriscal- Costa Rica "
Department of Geology. University of Costa Rica.
- 2006 **Research Assistant**
Project on the Application of Geographic Information Systems and Remote Sensing Techniques to Identify Unstable Slopes in Costa Rica.
Department of Geology. University of Costa Rica.
- Assisted fieldwork and lab work such as: Digital image processing, satellite image classification, maps creation and aerial photos georeferencing.

TEACHING AND ADVISING EXPERIENCE

Instructor

Currently teaching the following course at University of New Mexico:

GEOG 381L Introduction to Geographic Information System. Fall 2025

Taught the following courses in the Online Geospatial Education program at Penn State:

† Indicates course was originally and fully designed by me.

* Indicates I worked on the revision and update of course content.

GEOG 870 MGIS Capstone 2024

GEOG 588 † Analytical Approaches in Spatial Data Science. 2023 - 2025

GEOG 486 * Cartography and GeoVisualization. 2021 - 2025

GEOG 586 * Geographical Information Analysis. 2021 - 2025

GEOG 583 Geospatial System Analysis and Design. 2022

Planned and led a hybrid class for 160 students which lectures are online and labs are in person. Created some of the labs to be taught in section, led a group of six Teaching Assistants and planned lessons and assignments for the following courses at UC Santa Barbara:

GEOG W12 Maps and Spatial Reasoning. Summer 2018 and 2019. (Fully Online)

GEOG W12 Maps and Spatial Reasoning. Spring 2019. (Hybrid version)

Research Mentor

* Indicates a graduate student at Penn State. All others are undergraduate students at UCSB.

Held regular meetings, managed, and guided students' activities including research design and use of tools. Also, provided recommendations and career advice as needed.

2024 Student: Matthew Pawlenko*

Thesis Title: "Validating the Social Vulnerability Index Using Per Capita Property Damage Data: Insights from Hurricane Harvey in Three Gulf Coast States"

2023 Student: Gerrit Anderson*

Thesis Title: "A Comprehensive System to Crosswalk Information across Non-conforming Geographies"

2023 Student: Kriesjo Quimzon*

Paper Title: "Modelling the relationship between the social vulnerability index and socioeconomic variables on COVID-19 mortality rates at county level using Geographically Weighted Regression in the

contiguous United States”

- 2022 Student: Mae Lacey*
Thesis Title: “Assessing the influence of spatial bias within opportunistically collected community science data on species distribution modelling across taxonomic groups and ecoregions in the United States”
- 2022 Student: Isis Colón*
Paper Title: “Using a Geographically Weighted Regression Model to assess social predictors of COVID-19 death rates in the contiguous United States from January 2020 to June 2022”
- 2022 Student: Kevin Blair*
Capstone Project Title: “Spatiotemporal Analysis of School Shootings in the United States”
- 2016 Student: Monica Lemus Valencia
Project Title: Mapping Mexico’s Narco Trafficking: The Spatial-Temporal Distribution of Cartel Violence and Political Control
- 2016 Student: Corrie L. Monteverde
Project Title: 2016 Earth Day Weekend: Analysis of Environmental Tweets for California

Lead Teaching Assistant

Served as lead TA for the Geography Department at UCSB during the academic year 2018-2019 and assist the following course for graduate students:

GEOG 500 Teaching Assistant Training. Fall 2018.

Graduate Teaching Assistant

Led weekly lab sections and discussions, graded assignments and held office hours for the following courses at UC Santa Barbara:

Upper Division

- GEOG 183 Cartographic Design and Geovisualization. Winter 2015, and Spring 2016 and 2017.
- GEOG 176B Technical Issues in GIS. Winter 2014.
- GEOG 126 Maps in Science and Society. Winter 2016 and 2018.
- GEOG 128 Analytical and Computer Cartography. Winter 2017.
- GEOG 141A Population Geography. Winter 2019.

Lower Division

- GEOG W12 Maps and Spatial Reasoning. Fall 2014, 2015, 2017 and 2019; Summer 2015; and Spring 2018
- GEOG 5 People, Place, and Environment. Fall 2016 and Summer 2017.

Course Design Assistant

Designed the lab on “Events” as core concept of spatial information at UC Santa Barbara.

GEOG 176A *Introduction to Geographic Information Systems*. Spring 2015.

Undergraduate Lab Assistant

Assisted weekly lab sections and held office hours for the following courses at the Distrital University:

2005 Satellite Geodesy. Engineering Department.

2002 Topography. Engineering Department.

SKILLS

- *Programming languages:* R, Python, Java, Latex and Matlab.
- *Proficiency in GIS and Remote Sensing Software:* QGIS, ArcPro, ILWIS, Tableau, ERDAS, ENVI.
- *Other:* Linux (Ubuntu).
- *Languages:* Spanish (native speaker) and English (fluent).

RELATED PROFESSIONAL EXPERIENCE (INDUSTRY AND GOVERNMENT)**2012 GIS Team Leader**

Institute of Planning and Promotion of Energy Solutions in the Non-Interconnected Zones –IPSE. Colombia.

- Defined, managed, and led the strengthening of the geographic information system for the institution, SIGIPSE.

2011 GIS Analyst

Colombian Institute for Rural Development.

- Created maps of natural hazards and risk zones for the areas predefined for rural development.

2010 Senior Consultant

Joined Program for Ecosystem Integration and Adaptation to Climate Change in the Colombian Massif, UNDP Colombia.

- Identified natural hazards and evaluated vulnerability and risk scenarios in the Municipality of Purace, Cauca.
- Conducted interviews with different actors in the community such as community leaders and local government involved in disaster risk management.
- Led a team of 18 field assistants to collect geographic data using GPS receivers.
- Trained community leaders to use GIS tools.

- Guided the incorporation of the risk studies into Life Plans and Environmental Plans for Indigenous Communities.
- Prepared government reports and presentations and contributed to the project publications.

2005 Research Assistant

Digital Map of Bogota. Temporal Union.

- Determined accurate geographic coordinates based on GPS data collection and Aerial Photographs for the first digital map of Bogota city.

NON-DEGREE COURSE PROFESSIONALIZATION

- 2013 Courses in the Master's programs in Geoinformatics and Geospatial Technologies. Institute for Geoinformatics. University of Münster.
- 2009 "Multi-criteria analysis with applications to Urban Planning and Risk Mitigation". By Dr. Lorena Montoya, Specialist in Urban Disaster Management. University of Costa Rica.
- 2009 Earthquake-Resistant Constructions and How to Inspect Buildings After an Earthquake. National University of Colombia.
- 2008 Rapid Response to Natural Disaster in the Andean Community- New Approaches to Connect Those Involved with Spatial Information. Geo-Information Science and Earth Observation International Institute (ITC). Bogota, Colombia.
- 2008 Landslides Alert and Risk Assessment in Central America. United Nations University and ITC School for Disaster, Antigua, Guatemala.
- 2008 Comprehensive Risk and Disaster Management. Comprehensive version using virtual technology CIMNE-Structuralia. Environmental Studies Institute, National University Manizales, Colombia.

LEADERSHIP, SERVICE, AND COMMUNITY

Community Outreach

- 2019 *Department of History of Art and Architecture. UC Santa Barbara.*
Co-Taught with Prof. Keith Clarke a hands-on mapping workshop as part of the Digital Image Lab Series.
- 2018 *R-Ladies Bogota, Colombia*
Gave a talk on how to use R for mapping and spatial analysis.
- 2017 *Schools for Scientific Thought. UC Santa Barbara.*
Designed and taught a 5-week course for high school students entitled "Tools and Technologies to Explore the World".
- 2016 *Clubes de Ciencia Colombia.*
Designed and taught a week-long course for high schools students entitled "GeoClub: The Power of Geographic Information, Communities and the Web". A description of this experience is available at: <http://geog.ucsb.edu/~amsuarez/post/2015-07-23-r-rmarkdown/>

- 2016 *Geography Awareness Week.*
Gave a talk on maps and geospatial technologies to 5th graders at Mckinley Elementary School.
- 2014 *4-H GIS Project: Building a UCSB Scavenger Hunt.*
Teamed up with fellow grad students to teach 4-H participants to navigate with a map, use a GPS device and visualize geographic data. An article about this project is available at: <https://web.archive.org/web/20150127024222/http://www.geog.ucsb.edu/events/departments-news/1397/4-h-gis-project-building-a-ucsb-savenger-hunt/>
- 2013 *Geography Awareness Week.*
Gave a talk on natural hazards and environment to 6th graders at Mckinley Elementary School.

Conference Organization and Professional Service

- 2025 Peer reviewer for the *Cartography and Geographic Information Science Journal*.
- 2023-2024 *Conference on Spatial Information Theory (COSIT) 2024 in Québec City, Canada.*
Organizing committee member and Doctoral Mentorship Chair
- 2019 *Association of American Geographers Annual Meeting*
Panel Organizer/Moderator/Chair –Session: Geospatial Methods and Tools for Disaster Risk Management and Hazards Mapping.
- 2018 Peer reviewer for the *International Journal of Geographical Information Science*.

Volunteering and Community Service

- Member of R-ladies Santa Barbara. 2018 - 2020
- Member of UCSB Geography Visibility and Outreach Committee. 2014
- Member of UCSB Women in Geography Club. 2016.

Department, College, and University Service

- Admissions Committee for the GIS (MGIS) and Spatial Data Science (SDS) programs in the Online Geospatial Education Programs. 2021-2024.

Professional Affiliations

Training and Retaining Leaders in STEM - Geospatial Sciences (TRELIS-GS), UCGIS
 Association of American Geographers (AAG)
 Cartography and Geographic Information Society (CaGIS)
 North American Cartographic Information Society (NACIS)