A. MARCELA SUÁREZ

Curriculum Vitae

Department of Geography & Environmental Studies. University of New Mexico
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December, 2025

ACADEMIC APPOINTMENTS

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

EDUCATION

2020	**University of California, Santa Barbara** Doctor of Philosophy, Geography Committee: Keith Clarke (Chair), Dan Montello & Leila Carvalho *Dissertation:* "Tweets as information for emergency response during weather-related disaster events: Methods, constraints and a geographical perspective"
2011	**University of Costa Rica. San José, Costa Rica** Master of Science, Disaster Risk Management and Emergency Response *Thesis:* "Landslides Susceptibility Mapping Based on Technical and Social Approaches in the Viejo River Basin, Puriscal- Costa Rica"
2005	**Universidad Distrital 'Francisco José de Caldas.' Bogotá, Colombia** Bachelor of Engineering, Cadastral Engineering and Geodesy *Thesis:* "Landslides movement monitoring and modelling using GNSS Real-Time Kinematic Positioning and Geographic Information Systems: A case study in Tena, Colombia"

PUBLICATIONS

Peer-reviewed Papers

In Review   **Suarez, A. M.** and Clarke, K. C. Filtering the Storm: Evaluating the Effectiveness of Applying Spatiotemporal Filters to Twitter Data for Identifying Actionable Information for Emergency Response.

2022   **Suarez, A. M.** and 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

<div align="right">* Indicates graduate student under my supervision</div>

2025   Yoder, L.*, and **Suarez, A.M.** Accelerated User Evaluation of a Geovisual Dashboard for Local Government Transportation Planning. *Proceedings of the 32nd International Cartographic Conference (ICC 2025)*, 7:17. Vancouver, Canada. August 17–22.

2019   **Suarez, A. M.** and 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.** and 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.

Technical Reports and Non-refereed Publications

2011   IDEAM Colombia and MDG Achievement Fund (MDG-F). A methodology for the assessment of vulnerability and risks associated with climate variability in the upper basin of the Cauca River, Colombia. Joined Program for Ecosystem Integration and Adaptation to Climate Change in the Colombian Massif. (In Spanish).

2010   **Suárez, A.M.** Analysis of Susceptibility, Physical Vulnerability, and Risk Scenarios Associated with Hydroclimatic Hazards in the Municipality of Puracé, Cauca, Colombia. Joined Program for Ecosystem Integration and Adaptation to Climate Change in the Colombian Massif. IDEAM Colombia and MDG Achievement Fund (MDG-F). (In Spanish).

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 Modelling 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

2025   Making Geovisual Dashboard Evaluation More Attainable: A Pedestrian Risk Case Study. ASPIREational Talk. University of New Mexico. Dec 1.

2025   *Geospatial Education Without Borders: Reflections from My Journey*. Online Geospatial Education Programs - 25th Anniversary Symposium: Real Maps That Matter in the Age of Artificial Intelligence. 2025 Esri User Conference. San Diego, CA. July 16.

2024   *Professional Journeys After Cadastral Engineering and Geodesy: Perspectives from Abroad*. Universidad Distrital 'Francisco José de Caldas.' Hybrid event. April 22. (In Spanish). Panelist.

2022   *Converging on Spatial Data Science*. The Third Spatial Data Science Symposium. (SDSS 2022). Virtual. September 22-23. Panelist.

2020   *The Role of Geographic Information in Identifying Citizen Reports Relevant to Emergency Response*. XXVI Semana de Ingeniería Catastral y Geodesia. Universidad Distrital 'Francisco José de Caldas.' Virtual. December 9. (In Spanish).

2020   *The Role of Geographic Information in Identifying Citizen Reports Relevant to Emergency Response*. IX Jornadas de investigación en gestión del riesgo. Maestría en gestión del riesgo en desastres y atención de emergencias. Universidad de Costa Rica. Virtual. October 21. (In Spanish).

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.

2018   *R for mapping and spatial analysis*. R-Ladies. Bogota, Colombia.

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. Fall 2024

GEOG 588 *†*   Analytical Approaches in Spatial Data Science. Summer 2023, and Spring 2024 & 2025.

GEOG 486 *   Cartography and GeoVisualization. Fall 2021-2024, Spring 2022 & 2025, and Summer 2023-2025.

GEOG 586 *   Geographical Information Analysis. Fall 2021-2023; Summer 2022, 2024 & 2025; and Spring 2023-2024.

GEOG 583   Geospatial System Analysis and Design. Spring 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. Fully Online. Summer 2018 and 2019.

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

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 & 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.

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".

2014   *UCSB Geography Visibility and Outreach Committee.*
Teamed up with fellow grad students to develop a 4-H GIS Project entitled: "Building a UCSB Scavenger Hunt", in which we taught participants to navigate with a map, use a GPS device and visualize geographic data.

Conference Organization and Professional Service

2025   *The 6th Spatial Data Science Symposium*. Albuquerque in-person Hub and Virtual, December 4-5. Organizing Committee.

2025   Peer reviewer for the *Cartography and Geographic Information Science Journal.*

2024   *Conference on Spatial Information Theory (COSIT).* Québec City, Canada, September 17-20. Organizing committee and Doctoral Mentorship Chair.

2019   *Association of American Geographers Annual Meeting*
Session: Geospatial Methods and Tools for Disaster Risk Management and Hazards Mapping. Panel Organizer/Moderator/Chair.

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)