Magali Barba

Graduate Student Researcher

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Д

RESEARCH EXPERIENCE

Fall 2016 -

Cooperative Institute for Research in Environmental Sciences | Boulder, CO

Present

Graduate Student Researcher

Study the relationship between seismicity and fault slip by inverting InSAR and optical data.

- > Advisors : Dr. Kristy Tiampo, Dr. Mike Willis, Dr. Margaret Glasscoe
- > Funded by JPL Strategic University Research Partnership (SURP) Grant, "Linking seismicity and fault surface properties" (2016, 2017)
- > New Technology Report (NTR) 50630 : "Automating fault meshing for GeoFEST using SRCMOD models," approved (2015)

Python ISCE GIANT CloudCompare Trelis/CUBIT GeoFEST GDAL QGIS

Fall 2015 -Present

Cooperative Institute for Research in Environmental Sciences | Boulder, CO

ent | Graduate Student Researcher

Use InSAR time-series analysis to study the relationship between wastewater injection, ground surface deformation, and induced seismicity in Cushing, OK and Greeley, CO.

> Advisor : Dr. Kristy Tiampo
Python SCE GIANT GDAL QGIS

Fall 2013 -

Jet Propulsion Laboratory-California Institute of Technology | Pasadena, CA

Summer 2015 | Jet Pr

Jet Propulsion Laboratory Graduate Fellow

Studied the post-seismic deformation following the Landers and Hector Mine earthquakes using full-resolution time-series analysis of ERS and Envisat interferograms.

- > Advisor : Dr. Gilles Peltzer
- > Awarded Seismological Society of America 2014 Student Travel Grant to present preliminary results

 Python ISCE GIANT GDAL

Summer 2013

Jet Propulsion Laboratory-California Institute of Technology | Pasadena, CA

DEVELOP National Program Intern

Improved a fault detection algorithm for UAVSAR data based on Canny edge detection. A case study was performed for the 2010 El Mayor Cucapah earthquake.

- > Mentors : Dr. Margaret Glasscoe, Dr. Jay Parker
- > Awarded NASA DEVELOP National Program Virtual Poster Session- Best-in-category, 2013
 Python ArcGIS

Summer 2011

California Institute of Technology | Pasadena, CA

Southern California Earthquake Center SURE Intern

Produced visualizations of five small, local earthquakes arriving at a dense 5000-station array in Long Beach, CA and of of active source shot waves travelling through the Salton Seismic Imaging Project array in southeastern California. Created peak velocity maps that can be used for seismic microzonation.

- > Mentors : Dr. Robert Clayton, Dr. Joann Stock
- > Awarded Honorable Mention at NSF CAMP Symposium Poster Competition, 2012 GlobalMapper Bash

Summer 2010

California Institute of Technology | Pasadena, CA

Southern California Earthquake Center SURE Intern

Developed the Earthquake Early Warning Demonstration Tool to simulate the performance of an earthquake early warning system in California based on Caltech's Tauc-Pd algorithm.

> Mentors : Dr. Maren Boese

Summer 2009

University of Southern California | Los Angeles, CA

Southern California Earthquake Center Undergraduate Studies in Earthquake Information Technology (UseIT) Intern

Identified earthquake swarm sequences in Bombay Beach, California by analyzing relocated earthquake catalog. Animated their progression towards the southern segment of the San Andreas Fault.

> Mentors : Dr. Robert de Groot, Dr. Thomas Jordan SCEC-VDO

ADDITIONAL TRAINING

September 2014 | Cascadia Initiative Expedition | Newport, OR

Student Volunteer

Deployed 29 and recovered 15 Lamont-Doherty Earth Observatory Ocean-Bottom seismometers along the Cascadia Subduction Zone over 20 science days.

Summer 2017 | S

Signal Hill Petroleum/ NodalSeismic | Signal Hill, CA

Student Intern

Digitized well-logs using NueraLog. Created visualization of the May 2012 Cypress, CA earthquake traveling through a 2500-station array in Long Beach, CA.

NueraLog GlobalMapper Bash

EDUCATION

2015 - 2020	University of Colorado, Boulder Boulder, CO PhD, Geophysics
2013 - 2016	California State Polytechnic University, Pomona Pomona, CA <i>MSc, Geology</i>
2008 - 2012	University of California, Berkeley Berkeley, CA BA, Geophysics

PUBLICATIONS

Barba-Sevilla, M., Brown, M., Chon, E., Ge, S., Sheehan, A., Tiampo, K. (in prep). Linking Deformation: The Use of InSAR Analysis to Calibrate Numerical Models of Wastewater Injection in Weld County, Colorado.

Barba-Sevilla, M., Baird, B., Liel, A., Tiampo, K. (2018). Hazard Implications of the 2016 Mw 5.0 Cushing, OK Earthquake from a Joint Analysis of Damage and InSAR Data. Remote Sensing, 10(11), 1715. 1715.

Barba, M. (2016). Postseismic Deformation of Mojave Earthquakes using InSAR Time-Series Analysis. California State Polytechnic University, Pomona.

P AWARDS

2018	SACNAS COACh Workshop Travel Support University of Oregon COACh
2018	Conference Travel Grant CU United Government of Graduate Students
2016, 2017	SURP Grant, "Linking seismicity and fault surface properties" JPL
2017	"Earthquakes : nucleation, triggering, rupture, and their relationship with aseismic processes" School Travel Grant National Science Foundation (NSF)
2015	International Summer School on Earthquake Science (iSSEs) Travel Grant Southern California Earthquake Center
2015	Graduate Student Travel Award Cooperative Institute for Research in Environmental Sciences
2014	Superior Academics Award National Association of Black Geoscientists
2014	Deform2015 Thematic School Student Travel Grant Institut de Physique du Globe de Paris
2014	President's Student Scholarship for Conference Presentations California State Polytechnic University, Pomona
2013, 2014	Workshop Student Travel Support UNAVCO
2013	Virtual Poster Session : Best-in-category Award NASA DEVELOP National Program
2012	Symposium Poster Competition : Honorable Mention National Science Foundation (NSF) California Alliance for Minority Participation (CAMP)
2011, 2010	President Obama Nobel Prize Scholarship Hispanic Scholarship Fund
2011, 2010	Charles H. Ramsden Endowed Fund Research Fellowship UC Berkeley Earth and Planetary Sciences
2000 2000	Department Trusto Scholaushia Ulianania Scholaushia Fund
2009, 2008	Toyota Scholarship Hispanic Scholarship Fund



Fall 2018 -Present

Society of Latinx Earth and Space Scientists (SOLESS) | Boulder, CO

Founder and Chair

- > Spearheaded the first national Latinx/Hispanic geoscience organization.
- > Created website content and social media accounts to increase member visibility and share opportunities
- > Lead collaboration with Inspiring Girls Expeditions (IGE) and GeoLatinas to translate the IGE website to Spanish to promote inclusion.

Spring 2018 -Present

UNAVCO Education and Community Engagement Advisory Committee | Boulder, CO

Student Representative

- > Served on the 2019 RESESS intern selection panel.
- > Provide recommendations to the UNAVCO board of directors on issues pertaining to governance, policy, oversight, resource allocation, and strategic direction of UNAVCO.
- > Produced InSAR material for UNAVCO education videos and posters.

Fall 2018 -Present

CU Boulder STEM Routes | Boulder, CO

Member

- > Participated in a graduate student panel for CU Boulder undergraduates on diverse paths to STEM. Answered underrepresented undergraduate students' questions on STEM research and graduate school.
- > Interacted with visiting underrepresented undergraduate students interested in applying to CU Boulder for graduate school.

Summer 2018

UNAVCO Research Experiences in Solid Earth Sciences for Students (RESESS) | Boulder, CO

Research Mentor

- > Guided undergraduate student through research project on the application of InSAR time-series analysis to observe creep on the Hayward fault.
- > Internship products include research manuscript and poster.

Summer 2017

UNAVCO Research Experiences in Solid Earth Sciences for Students (RESESS) | Boulder, CO

Communications Mentor

> Revised research manuscript and poster iterations for undergraduate intern.

2015 -Present

Independent Outreach | Carson, CA; Los Angeles, CA; Boulder, CO; Denver, CO

- > Organized a ShakeOut Drill assembly at Dolores Elementary in Carson, CA. Presented on my path to becoming an earth scientist, earthquakes, and earthquake preparedness. (2018)
- > Tabled for CIRES at the 2018 SACNAS meeting. (2018)
- > Served on the Girls on Rock selection committee. (2018).
- > Gave a talk on my pathway to graduate school to SCEC UseIT interns. (2018, 2017)
- > Participated in a college panel discussion at Martin Luther King Jr. Early College in Denver, CO. (2015)
- > Organized a graduate student panel at the Community College of Denver. Spearheaded, recruited graduate students, and participated in the panel. (2015)
- > Participated in a graduate student panel for the CU Miramontes Arts and Science Program. Answered underrepresented undergraduate students' questions on STEM research and graduate school. (2015)

2014, 2015

JPL Open House | Pasadena, CA

Volunteer

> Taught visiting children and adults about earthquakes, JPL remote sensing research, and the NISAR mission.

Professional Affiliations

- > Society of Latinx Earth and Space Scientists (2018 Present)
- > Cluster Espacial Red Global MX (2018 Present)
- > Society of Exploration Geophysicists (2013 Present)
- > American Geophysical Union (2011 Present)
- > Seismological Society of America (2009 Present)