

# Tamara Aránguiz-Rago (She/Ella)

Tectonic Geomorphologist

Ph.D. Candidate in Earth and Space Sciences, University of Washington

[tarangui@uw.edu](mailto:tarangui@uw.edu) · [tarangui.github.io](https://tarangui.github.io)

## Research Interests

Geomorphology; landscape evolution; active tectonics; surface processes; numerical modeling; extreme environments; crustal deformation; subduction zone processes; diversity, equity, and inclusion; coding.

## Education

Fall 2020 – Present	<b>University of Washington</b> , Seattle, United States of America. Ph.D. in Earth and Space Sciences. Advisor: Dr. Alison Duvall. Co-advised: Dr. Brendan Crowell.
2012/03 – 2018/03	<b>University of Chile</b> , Santiago, Chile. Professional Degree, Geologist. Bachelor of Science in Geology (2016) Advisor: Dr. Gabriel Easton Vargas.
2016/08 - 2016/12	<b>University of São Paulo</b> , São Paulo, Brazil. Academic Exchange in Geosciences.

## Research Experience

Fall 2020 – Present	<b>University of Washington</b> , Department of Earth and Space Sciences, Seattle, USA. Dissertation: “ <i>Landscape evolution of strike-slip faults across timescales: examples from the hyper-arid Atacama Desert and from numerical simulations</i> ”. Advisor: Dr. Alison Duvall.
Summer 2022	Committee: Dr. Brendan Crowell, Dr. Katherine Huntington, Dr. David Schmidt. <b>Community Surface Dynamics Modeling System (CSDMS)</b> , CU Boulder, USA. Visiting Scholar summer program. Project: “Role of sediment and climate variability in strike-slip fault models”. Advisor: Dr. Gregory Tucker.
2017/03 – 2018/01	<b>University of Chile</b> , Santiago, Chile. Professional Degree Thesis: “ <i>Historiographic evolution of Santiago's exposure to the seismic hazard of the San Ramon Fault and its possible relation with the earthquake of May 13, 1647</i> ”. Advisor: Dr. Gabriel Easton Vargas.
2015/08 – 2016/01	<b>University of Chile</b> , Santiago, Chile. <ul style="list-style-type: none"><li>Research Support for the M.S Thesis “<i>Active tectonics on the western edge of Principal Cordillera, Central Chile (29°-36°S)</i>.” Geomorphological analysis. Advisor: M.Sc. José Estay &amp; Dr. Luisa Pinto.</li><li>Research Project “<i>Scarps quantification of San Ramón Fault using high-resolution DEM</i>” Advisor: Dr. Gabriel Easton Vargas.</li></ul>

## Teaching and Mentoring Experience

2024/09 – 2024/12	<b>Introduction to GIS for Earth Sciences, University of Washington</b> . Teacher Assistant (400 level). Department of Earth and Space Sciences.
2022/01 – 2024/12	<b>CoCo: Code to Communicate</b> , Coding coordinator, NSF-funded bilingual program for graduate Latine and Hispanic students. <ul style="list-style-type: none"><li>Winter 2022, Winter 2023: Coding Coach, taught multiple introductory Python packages (NumPy, matplotlib, Pandas, Landlab).</li></ul>
2024/06 – 2024/07	<b>Field Geology with GIS, University of Washington</b> . Teacher Assistant. GIS and Pacific Northwest Field Geology for senior undergraduates. Department of Earth and Space Sciences.
2024/03	<b>Geo Club, University of Washington</b> . Teacher Assistant. Assisted field trip in Southern California. Geo Club is organized by and for undergraduate students in the Earth and Space Sciences Department from the University of Washington.
2024/01 – 2024/10	<b>Identity, Belonging, and Inquiry in Science (IBIS), University of Washington</b> . Mentor in NSF-funded program through College of Environment, pairing graduate mentors and undergraduates from historically underrepresented backgrounds. <ul style="list-style-type: none"><li>Mentee: Ashley Martinez, Major: B.S in Environmental Sciences, University of Washington. Project: “<i>Comparative Analysis of Geomorphic Markers: Synthetic Landscapes vs. Remote Observations of Strike-Slip Faulting in Northern Chile</i>”</li></ul>
2023/07	<b>Gear UP Summer Space Camp, University of Washington</b> . Instructor of science lessons. Focus on Artemis NASA mission. Targeted to low-income, first-gen, BIPOC 11 <sup>th</sup> graders students from South King County, Washington.
2014 – 2018	<b>University of Chile</b> , Faculty of Physical and Mathematical Sciences, Santiago, Chile. <ul style="list-style-type: none"><li>Summer School Teaching Assistant. Geology II: Deciphering the keys of the Geological Landscape. Geology I: The Force of Volcanoes.</li></ul>

	<ul style="list-style-type: none"> <li>• Teaching Assistant. (500 level) Geology of Chile (1 time); (300 level) General Geology (4 times).</li> <li>• Grader Assistant. (200 level) Probability and Statistics (1 time); Physical Chemistry (2 times).</li> </ul>
2017/04-2017/07	<b>Pontifical Catholic University of Chile.</b> PACE Program. Teacher Assistant Geological Catastrophes. Elective course for high school low-income students.
<b>Fieldwork Experience</b>	
November 2022	<b>Salar Grande, Tarapacá Region, Chile.</b> Week fieldwork as part of own Ph.D. dissertation research. Thermochronology sampling, drone photogrammetry.
March 2023	<b>Wellington and Marlborough Fault Systems, Aotearoa, New Zealand.</b> Three-week fieldwork with Dr. Alison Duvall and her research group. Focus on fluvial geomorphology techniques to characterize rivers-fault interaction.
August 2022	<b>Salar Grande, Tarapacá Region, Chile.</b> Two-week fieldwork as part of own Ph.D. dissertation research. Leader. IRSL and thermochronology sampling.
Summer 2021	<b>Oregon State University,</b> College of Earth, Ocean, and Atmospheric Sciences, Corvallis, OR, US. Cascadia 2021 Onshore Field Team member. Installation of seismometers.
2018/01 – 2020/08	<b>Xterrae Geologia, Chile.</b> Several campaigns (>20) along the Chilean territory. Focus on natural hazards, quaternary mapping, and engineering geology.
2015- 2017	<b>University of Chile.</b> Fieldwork for the degree (>50 cumulative days) along Chile.
2016/01	<b>University of Chile.</b> 10 days fieldwork assistant in Central Andes, Putaendo, Chile. Looking for Neogene fault activity associated with the Pocuro Fault.
2016/09	<b>University of Sao Paulo.</b> 7 days of fieldwork in Parana Basin, Brazil.
<b>Laboratory Experience</b>	
Fall 2024	<b>Geoscapes Laboratory, University of Washington,</b> Seattle, WA, United States. Apatite (A) and Zircon (Z) picking and packing for AHe and ZHe dating.
January 2023	<b>USGS Luminescence Dating Laboratory,</b> Lakewood, CO, United States. Mineral separation of feldspars for infrared stimulated luminescence (IRSL) analysis.
May 2023	<b>CU TRaIL (Thermochronology Research and Instrumentation Lab),</b> Boulder, CO, United States. First user training and apatite picking and packing in facilities for (U-Th)/He dating.
<b>Publications</b>	
	<ul style="list-style-type: none"> <li>○ <b>Aránguiz-Rago, T.,</b> Duvall, A., Crowell, B., Henderson, S., Schmidt, D. (in review) Slow strike-slip faulting in slow erosional environments: a case study from the Salar Grande Fault, Atacama Desert, Chile. JGR: Earth Surface.</li> <li>○ <b>Aránguiz-Rago, T.,</b> Duvall, A., Tucker, G., Campforts, B. (in prep) The role of sediment and climate variability in strike-slip fault landscapes: insights from numerical simulations and field observations.</li> <li>○ <b>Aránguiz-Rago, T.,</b> Duvall, A., Estay, J., Gray, H. (in prep) Holocene evidence of co-seismic deformation of the Salar Grande Fault using IRSL dating of alluvial deposits.</li> <li>○ Rosa Marín, A., I.M. Cortés, <b>T. Aránguiz-Rago,</b> A. Pesce, J. Libarkin, and N. Gasparini. 2023. Code to communicate: Empowering bilingual connections in Earth science. <i>Oceanography</i> 36(4):158–159, <a href="https://doi.org/10.5670/oceanog.2024.114">https://doi.org/10.5670/oceanog.2024.114</a>.</li> </ul>
<b>Conferences Presentations</b>	
May 2024	<b>CSDMS 2024: Coastlines, Critical Zones and Cascading Hazards: Modeling Dynamic Interfaces from Deep Time to Human Time,</b> Montclair, New Jersey, US. Invited lightning talk: “Strike-slip-scapes under hyperarid conditions”.
Nov 2023	<b>XVI Geological Chilean Congress.</b> Santiago, Chile. “Control de la tasa de deslizamiento y variabilidad climática en simulaciones numéricas de paisajes modificados por fallas de rumbo”
May 2023	<b>CSDMS 2023: Pattern and processes across scales,</b> Boulder, Colorado, US. Landscape modeling Annual Meeting, travel scholarship recipient, and poster presenter. “Comparing numerical simulations and field studies of strike-slip faults from the hyper-arid Atacama Desert to Tararua Mountains, New Zealand.”
Mar 2023	<b>GAGE/SAGE 2023 Community Science Workshop,</b> Pasadena, California, US. Travel scholarship recipient, and poster presenter. “Interseismic deformation rates in the Salar Grande Fault from GPS and InSAR data”
Dec 2022	<b>AGU Fall Meeting 2022,</b> Chicago, Illinois, US. - “Impact of the Frequency and Intensity of Wet Periods in a Laterally Advected Landscape under hyper-arid conditions” (Aránguiz et al.) Oral presentation. -” CoCo: Code to Communicate a bilingual program to train new coders and scientific communicators of Latin-American identities” (Rosa-Marín et al.). Poster presentation, coauthor.
May 2022	<b>CSDMS 2022: Environmental Extremes and Earthscape Evolution,</b> Boulder, Colorado, US. Landscape modeling Annual Meeting, travel scholarship recipient, and poster presenter.
May 2022	<b>Chilean Scientific Community Workshop, SZ4D.</b> Los Andes, Chile. Poster Presenter.
Mar 2022	<b>Structure and Deformation at Plate Boundaries,</b> Honolulu Hawaii, US. NSF GeoPRISMS workshop, workshop attendant, and poster presenter.

Dec 2021	<b>AGU Fall Meeting 2021</b> , New Orleans, Louisiana, US. - “Near-fault Deformation Analysis from Geomorphic Expression and GNSS Modeling Along the Salar Grande Area, Northern Chile” (Aránguiz, Duvall and Crowell). Poster.
Nov 2018	- “The remote analysis war: GPS vs Geomorphology in the Atacama Desert”. Ignite talk AGU. <b>XV Geological Chilean Congress “Geosciences for the community”</b> , Concepción, Chile. - “The Great Earthquake of Santiago of May 13, 1647, can a cortical source associated with the San Ramón Fault be ruled out? “. (Aránguiz, et al.). Poster exhibitor. - “The geologist and risk evaluation: when you have to be the villain”. (Rauld et al.) - “Teaching innovation in Geology of Chile course at the University of Chile”. (Pinto et al.)
Oct 2017	<b>Geological Society of America 2017 Annual Meeting</b> , Seattle, Washington, US. - “Tectonic evolution and geological history of the Colina and Volcán river valleys in the high Andes of Santiago, Chile”. (Aránguiz, Olivares, Kotthoff, et al.) Poster for Best Student Geologic Map Competition.

## Honors, Awards & Fellowships

Fall 2024	<b>Takken Student Research Presentation Travel Award, Association for Women Geoscientist (AWG).</b> Support to defray costs to attend and present at AGU Fall Meeting (\$750).
Spring 2024	<b>Dr. Jody Bourgeois Endowed Fellowship, University of Washington, Seattle USA.</b> One quarter of fellowship support.
Spring 2024	<b>ESS Award College of Environment, University of Washington, Seattle USA.</b> Funding to cover partial analytical expenses for thermochron study (\$2,750).
2020 - 2024	<b>Fulbright Equal Opportunities Scholarship Program Chile-United States.</b> 4- years full funding Ph.D. Scholarship. Fulbright Scholar.
2020 - 2024	<b>Graduate Student Fellowship, University of Washington, Seattle USA.</b> Top-off funding for stipend and tuition waiver.
Spring 2024	<b>ESS Research Gala.</b> Best “Initiatives in diversity, equity and inclusion” talk.
Spring 2023	<b>ESS Award, College of Environment, University of Washington.</b> Fieldwork award to partially cover Salar Grande’s fieldwork expenses (\$3,000).
Spring 2023	<b>ESS Research Gala.</b> Best “Overall Talk” and Best “Up Goer 5” talk.
Fall 2022	<b>Quaternary Research Center Grant Award, University of Washington.</b> Award to fund investigation in strike-slip faulting in the hyper-arid core of the Atacama Desert. (\$6,750).
Summer 2022	<b>Open Earthscope Visiting Scholar Award, CU Boulder, US.</b> Summer residency at CSDMS facilities, two months of support (total budget \$25,000).
Spring 2022	<b>ESS Award, College of Environment, University of Washington.</b> Fieldwork award to partially cover Salar Grande’s fieldwork expenses (\$3,000).
Spring 2022	<b>ESS Research Gala.</b> Best Geodesy Talk and Best Up Goer 5 minutes talk.
Fall 2021	<b>Waaime US Graduate Student Fellowship.</b> Economical support stipend (\$5,000).
Spring 2021	<b>ESS Research Gala.</b> Award in “new research material”.
2012 - 2018	<b>Excellence Academic Scholarship of the University of Chile.</b> 6-year full-funding Bachelor and Professional degree.
2012 - 2018	<b>Junaeb, BMES.</b> Chilean Government fellowship for food and school materials.
2017	<b>Waaime Scholarship.</b> Monthly fellowship.
2013 - 2017	<b>Honor Student at the University of Chile.</b> Annual honor list of the FCFM.

## Community Service & DEI

December 2024	<b>AGU Meeting 2024 Scientific session convener.</b> Student convener in session “Tectonic and Geodynamic Processes Encoded in Landscapes”.
December 2024	<b>AGU Meeting 2024 Town Hall convener.</b> Primary convener in hybrid session: “Lowering Barriers: Empowering Latin American Geoscientists in the Global Community”.
Sep 2022-Fall 2024	<b>Graduate Student Representative Earth and Space Sciences (Grad Rep).</b> Representative to the Faculty, ESS, University of Washington.
August 2024	<b>Reviewer for Tectonophysics</b>
June 2024	<b>What are rocks? Lesson at Chief Leschi School.</b> Co-led lesson for kinder, 1 <sup>st</sup> and 2 <sup>nd</sup> grader students through Riverways partnership program, UW.
Feb 2023	<b>Geomorphology Lesson at Seattle World School.</b> Created and led lesson for 11th-grade physics class taught in Spanish and English for immigrant and refugee students.
March 2022-Dec 2023	<b>SZ4Grads: Subduction Zones for Graduate Students.</b> Founder and executive committee member. Community of early career researchers across different fields studying subduction zones around the world, under the SZ4D initiative.

August 2022	<b>Second National Conference Justice in Geosciences</b> , Washington DC, USA. An attendant in this historical conference, discussions, and workshops.
Sep 2021-Oct 2022	<b>College of Environment DEI Representative</b> of the Earth and Space Sciences Department of the University of Washington.
2021-Present	<b>Geolatinas</b> . Active member.
2018-2020	The Women's Auxiliary to the American Institute of Mining, Metallurgical, and Petroleum Engineers (Waaime) Chile section.
2017-2018	<b>Geosciences for Public Policies</b> (GPP). Member, organized group from the University of Chile.

### Certifications, Workshops & Skills

April 2024	<b>Mountain Leadership I</b> . Two-day course on navigation and snow travel. Climbers of Color organization. Scholarship recipient.
March 2024	<b>First Aid/CPR certificate</b> .
Fall 2023	<b>Mentoring Workshop series</b> . Identity, Belonging and Inquiry in Science (IBIS), College of Environment, University of Washington
February 2023	<b>Wilderness First Aid Responder Course</b> (16 hrs.)
August 2022	<b>Short course InSAR processing and time-series analysis for geophysical applications</b> . UNAVCO, 2022, Certificate of Completion.
June 2021	<b>Earth Surface Processes Institute</b> (ESPIn) 2021, Certificate of Completion 8-day intensive Modeling Summer Institute, Community Surface Dynamics Modeling System (CSDMS).
<b>Scientific Computing</b>	Python, MATLAB, GIS, Git/GitHub, Bash
<b>Other Software</b>	Adobe Illustrator, Agisoft Metashape.
<b>Languages</b>	Spanish (native), English, and Portuguese.

### Professional Experience

2018/01- 2020/08	<b>Xterrae Geologia</b> , Santiago, Chile. <i>Project Geologist</i> . Natural hazards, hydrology, geology, and risk applied to urban planning.
2017/01-2017/03	<b>Xterrae Geologia</b> , Santiago, Chile. <i>Project Geologist</i> . Risk studies. <i>Internship II</i> .

### Artistic Experience

2022 - Present	<b>Bandit Theater, Seattle, Washington, US.</b> <ul style="list-style-type: none"> <li>• Performer in show “Mad Science”. Monthly performances in Seattle Area.</li> <li>• Fall 2023: Co-director in “Tumbleweeds” improv team for advances students.</li> <li>• Fall 2023: Co-instructor workshop for UW Improv Collective.</li> </ul>
2015 - 2017	<b>Conservatory of Improvisational Theater and Comedy, Lospleimovil Theater</b> . Graduated with Artistic Certificate in the 2-years program.
2013 - 2019	<b>Lospleimovil Theater</b> , Santiago, Chile. <i>Professional Cast and Teacher</i> . Shows, events, classes, and training. Participation in national and international festivals.