

# 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 & Dr. Brendan Crowell.
2012/03 – 2018/03	<b>University of Chile</b> , Santiago, Chile. Professional Degree, Geologist. Advisor: Dr. Gabriel Easton Vargas.
2012/03 – 2016/03	<b>University of Chile</b> , Santiago, Chile. Bachelor of Science in Geology.
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> ”. Advisors: Dr. Alison Duvall & Dr. Brendan Crowell.
Summer 2022	<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

2024/03	<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– Present	<b>Identity, Belonging, and Inquiry in Science (IBIS)</b> , Mentor in NSF-funded program through College of Environment, University of Washington 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>
2022/01– Present	<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>
2023/07	<b>Gear UP UW Summer Space Camp</b> , facilitator 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><li>Teaching Assistant. Geology of Chile (1 time); General Geology (4 times) 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.

## Fieldwork Experience

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, College of Earth, Ocean, and Atmospheric Sciences, Corvallis, OR, US.</b> 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.

## Laboratory Experience

January 2023	<b>USGS Luminescence Dating Laboratory, Lakewood, CO, United States.</b> Mineral separation of feldspars for infrared stimulated luminescence (IRSL) analysis.
May 2023	<b>CU TRaIL (Thermochronology Research and Instrumentation Lab), Boulder, CO, United States.</b> First user training and apatite picking and packing in facilities for (U-Th)/He dating.

## Publications

- **Aránguiz-Rago, T.,** Crowell, B., Duvall, A., Schmidt, D., Delgado, F. (in review) Geodetic Interseismic Fault Slip Rates Based on InSAR data in the Salar Grande, Northern Chile. *Remote Sensing*.
- **Aránguiz-Rago, T.,** 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.
- **Aránguiz-Rago, T.,** 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.
- Rosa Marín, A., I.M. Cortés, **T. Aránguiz-Rago,** A. Pesce, J. Libarkin, and N. Gasparini. 2023. Code to communicate: Empowering bilingual connections in Earth science. *Oceanography* 36(4):158–159, <https://doi.org/10.5670/oceanog.2024.114>.

## Conferences Presentations

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 speaker lightning talk.
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. - “The remote analysis war: GPS vs Geomorphology in the Atacama Desert”. Ignite talk AGU.
Nov 2018	<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 **Geological Society of America 2017 Annual Meeting.** 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

2020 - 2024 **Fulbright Equal Opportunities Scholarship Program Chile-United States.**  
 4- years full funding Ph.D. Scholarship. Fulbright Scholar.

2020 - 2024 **Graduate Student Fellowship, University of Washington, Seattle USA.**  
 Top-off funding for stipend and tuition waiver.

Spring 2024 **ESS Research Gala.**  
 Best “Initiatives in diversity, equity and inclusion” talk.

Spring 2023 **ESS Award, College of Environment, University of Washington.** Fieldwork award  
 to partially cover Salar Grande’s fieldwork expenses (\$3,000).

Spring 2023 **ESS Research Gala.**  
 Best “Overall Talk” and Best “Up Goer 5” talk.

Fall 2022 **Quaternary Research Center Grant Award, University of Washington.**  
 Award to fund investigation in strike-slip faulting in the hyper-arid core of the Atacama Desert. (\$6,750).

Summer 2022 **Open Earthscope Visiting Scholar Award, CU Boulder, US.**  
 Summer residency at CSDMS facilities, two months of support (total budget \$25,000).

Spring 2022 **ESS Award, College of Environment, University of Washington.** Fieldwork award  
 to partially cover Salar Grande’s fieldwork expenses (\$3,000).

Spring 2022 **ESS Research Gala.**  
 Best Geodesy Talk and Best Up Goer 5 minutes talk.

Fall 2021 **Waaime US Graduate Student Fellowship.**  
 Economical support stipend (\$5,000).

Spring 2021 **ESS Research Gala.**  
 Award in “new research material”.

2012 - 2018 **Excellence Academic Scholarship of the University of Chile.**  
 6-year full-funding Bachelor and Professional degree.

2012 - 2018 **Junaeb, BMES. Chilean Government fellowship for food and school materials.**

2017 **Waaime Scholarship.** Monthly fellowship.

2013 - 2017 **Honor Student at the University of Chile.** Annual honor list of the FCFM.

### Community Service & DEI

Sep 2022-Present **Graduate Student Representative Earth and Space Sciences (Grad Rep).**  
 Representative to the Faculty, ESS, University of Washington.

Feb 2023 **Geomorphology Lesson at Seattle World School.** Created and led lesson for 11th-grade physics class taught in Spanish and English for immigrant and refugee students.

March 2022-Dec 2023 **SZ4Grads: Subduction Zones for Graduate Students.** 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 **Second National Conference Justice in Geosciences, Washington DC, USA.**  
 An attendant in this historical conference, discussions, and workshops.

Sep 2021-Oct 2022 **College of Environment DEI Representative** of the Earth and Space Sciences Department of the University of Washington.

2021-Present **Geolatinas.** Active member.

2018-2020 The Women's Auxiliary to the American Institute of Mining, Metallurgical, and Petroleum Engineers (Waaime) Chile section.

2017-2018 **Geosciences for Public Policies (GPP).** Member, organized group from the University of Chile.

### Certifications, Workshops & Skills

April 2024 **Mountain Leadership I.** Two-day course on navigation and snow travel. Climbers of Color organization. Scholarship recipient.

March 2024 **First Aid/CPR certificate.**

Fall 2023 **Mentoring Workshop series.** Identity, Belonging and Inquiry in Science (IBIS), College of Environment, University of Washington

February 2023 **Wilderness First Aid Responder Course (16 hrs.)**

August 2022 **Short course InSAR processing and time-series analysis for geophysical applications.**  
 UNAVCO, 2022, Certificate of Completion.

June 2021 **Earth Surface Processes Institute (ESPIIn) 2021,** Certificate of Completion 8-day intensive Modeling Summer Institute, Community Surface Dynamics Modeling System (CSDMS).

**Scientific Computing** Python, MATLAB, GIS, Git/GitHub, Bash

**Other Software** Adobe Illustrator, Agisoft Metashape.

**Languages** Spanish (native), English, and Portuguese.

## Professional Experience

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

## Artistic Experience

- 2022 - Present **Bandit Theater, Seattle, Washington, US.**
- Performer in show “Mad Science”. Monthly performances in Seattle Area.
  - Fall 2023: Co-director in “Tumbleweeds” improv team for advances students.
  - Fall 2023: Co-instructor workshop for UW Improv Collective.
- 2015 - 2019 **Conservatory of Improvisational Theater and Comedy, Lospleimovil Theater.**  
Graduated with Artistic Certificate in the 2-years program.
- 2013/04 - 2018/12 **Lospleimovil Theater**, Santiago, Chile. *Professional Cast and Teacher*. Shows, events, classes, and training. Participation in national and international festivals.