

## Tamara Aránguiz-Rago (She/Ella)

Tectonic Geomorphologist

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

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### Research Interests

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

### Education

2020 – Present	<b>University of Washington</b> , Seattle, United States of America. Ph.D. in Earth and Space Sciences.
2016 – 2018	<b>University of Chile</b> , Santiago, Chile. Professional Degree, Geologist.
2016	<b>University of São Paulo</b> , São Paulo, Brazil. Academic Exchange in Geosciences.
2012 – 2016	<b>University of Chile</b> , Santiago, Chile. Bachelor of Science in Geology.

### Research Experience

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 – 2018	<b>University of Chile</b> , Department of Geology, 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 – 2016	<b>University of Chile</b> , Department of Geology, Santiago, Chile. <ul style="list-style-type: none"><li>Research Internship “<i>Geomorphological analysis of neotectonics on the western edge of Principal Cordillera, Central Chile</i>”. 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>

### Publications

- **Aránguiz-Rago, T.**, 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*.
- **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>.

### Grants and Awards

Fall 2024	<b>Takken Student Research Presentation Travel Award, Association for Women Geoscientists (AWG)</b> . Support to defray costs to present at AGU24 Fall Meeting (\$750).
Spring 2024	<b>Earth and Space Sciences Award, University of Washington</b> . Research award to partially cover thermochronology analytical costs (\$2,750).
Spring 2023	<b>Earth and Space Sciences Award, University of Washington</b> . Fieldwork award to partially cover Salar Grande's fieldwork expenses (\$3,000).
Fall 2022	<b>Quaternary Research Center Grant, 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, USA</b> . Summer residency at CSDMS facilities, two months of support (total budget \$25,000).
Spring 2022	<b>Earth and Space Sciences Award, University of Washington</b> . Fieldwork award to partially cover Salar Grande's fieldwork expenses (\$3,000).

## Fellowships and Honors

Spring 2024	<b>Dr. Jody Bourgeois Endowed Fellowship, University of Washington, Seattle USA.</b> One quarter of Research Assistantship.
2020 - 2024	<b>Fulbright Scholar Doctoral Fellowship.</b> 4- years full funding for Ph.D.
2020 - 2024	<b>Graduate Student Fellowship, University of Washington, Seattle, USA.</b> Top-off funding for stipend and tuition waiver.
Spring 2024	<b>Earth and Space Sciences Research Gala, University of Washington, Seattle, USA.</b> Best talk in "Initiatives in diversity, equity and inclusion".
Spring 2023	<b>Earth and Space Sciences Research Gala, University of Washington, Seattle, USA.</b> Best "Overall Talk" and Best "Up Goer 5" talk.
Spring 2022	<b>Earth and Space Sciences Research Gala, University of Washington, Seattle, USA.</b> Best "Geodesy" Talk and Best "Up Goer 5" talk.
Fall 2021	<b>The Women's Auxiliary to the American Institute of Mining, Metallurgical, and Petroleum Engineers (Waaime) Graduate Student Fellowship.</b> One time stipend (\$5,000).
Spring 2021	<b>Earth and Space Sciences Research Gala, University of Washington, Seattle, USA.</b> Award in "new research material".
2019 – 2020	<b>Fulbright Equal Opportunities Scholarship Program Chile-United States.</b> English classes and pre-academic training in preparation to graduate school application.
2012 - 2018	<b>Academic Excellence Scholarship of the University of Chile, Santiago, Chile.</b> 6-years full-funding for Bachelor of Science and Professional Degree.
2017	<b>The Women's Auxiliary to the American Institute of Mining, Metallurgical, and Petroleum Engineers (Waaime) Undergrad Student Fellowship – Chilean Section.</b> Monthly stipend (Total \$1,200,000 CLP).
2013 - 2017	<b>Honor Student at the University of Chile.</b> Annual honor list of best students from the Faculty of Physical and Mathematical Sciences.

## Fieldwork Experience

November 2023	<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 – 2020	<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.
Fall 2016	<b>University of Sao Paulo.</b> 7 days of fieldwork in Parana Basin, Brazil.
Summer 2016	<b>University of Chile.</b> 10 days fieldwork assistant in Central Andes, Putaendo, Chile. Looking for Neogene fault activity associated with the Pocuro Fault.

## Laboratory Experience

Fall 2024	<b>Geoscapes Laboratory, University of Washington, Seattle, WA, United States.</b> Apatite (A) and Zircon (Z) picking and packing for AHe and ZHe dating.
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.

## Mentoring Experience

2024	<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>
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## Teaching Experience

Fall 2024	<b>Introduction to GIS for Earth Sciences, University of Washington.</b> Teacher Assistant (400 level). Department of Earth and Space Sciences.
Summer 2024	<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.

Spring 2024	<b>Geo Club, University of Washington.</b> Teacher Assistant. Assisted field trip in Southern California Geology. Geo Club is organized by and for undergraduate students in the Earth and Space Sciences Department from the University of Washington.
2021 – 2023	<b>CoCo: Code to Communicate,</b> Coding Teacher, NSF-funded bilingual program for graduate Latin and Hispanic students. Taught multiple introductory Python packages (NumPy, matplotlib, Pandas, Landlab). Remote based position.
Summer 2023	<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>• Teaching Assistant. (500 level) Geology of Chile (1 time); (300 level) General Geology (4 times).</li> <li>• Summer School Teaching Assistant. Geology II: Deciphering the keys of the Geological Landscape. Geology I: The Force of Volcanoes.</li> <li>• Grader Assistant. (200 level) Probability and Statistics (1 time); Physical Chemistry (2 times).</li> </ul>
Fall 2017	<b>Pontifical Catholic University of Chile.</b> PACE Program. Teacher Assistant Geological Hazards. Elective course for high school low-income students.

### Conferences and Presentations

Dec 2024	<b>AGU Fall Meeting 2024,</b> Washington D.C, USA. “Slow strike-slip faulting in a hyperarid landscape: assessing the geomorphic response to the Salar Grande Fault, Atacama Desert, Chile” (Aránguiz-Rago & Duvall) Poster.
Oct 2024	<b>Professional Exchange for Resilience Leadership and Advancement (PERLA) Webinar.</b> “Comunidad CoCo: Un Espacio Bilingüe para la Comunicación de las Geociencias y Programación”. Online Presenter.
May 2024	<b>CSDMS 2024: Coastlines, Critical Zones and Cascading Hazards: Modeling Dynamic Interfaces from Deep Time to Human Time,</b> Montclair, New Jersey, USA. Invited lightening talk: “Strike-slip-scapes under hyperarid conditions”
April 2024	<b>Earth and Space Sciences Research Gala, University of Washington,</b> Seattle, USA. “Investigating the hyperarid climate and Holocene activity along the Salar Grande Fault, northern Chile, using IRSL dating in alluvial deposits” (Aránguiz-Rago et al.) Oral.
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” (Aránguiz-Rago et al.) Oral.
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” (Aránguiz-Rago & Duvall) Poster.
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”. (Aránguiz-Rago & Crowell) Poster.
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-Marin, Aránguiz-Rago et al.) Poster.
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. “Unraveling surface deformation rates during the interseismic period in Salar Grande Fault, Northern Chile.” Poster.
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. - “The geologist and risk evaluation: when you have to be the villain”. (Rauld et al.) Poster. - “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.

## Leadership and Service to the Scientific Community

Fall 2024 – Present	<b>Grad Student Representative Faculty Hiring Committee.</b> Geomorphology search for the Department of Earth and Space Sciences, UW.
Fall 2023 – Present	<b>CoCo: Code to Communicate, Coding Coordinator,</b> NSF-funded bilingual program for graduate Latin and Hispanic students. Design of coding curriculum, training coaches, supervision and edition of educational notebooks.
December 2024	<b>AGU Meeting 2024 Scientific session convener.</b> Student convener in session “Tectonic and Geodynamic Processes Encoded in Landscapes”.
2022- 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>
2022 – 2023	<b>SZ4Grads: Subduction Zones for Graduate Students.</b> <i>Founder and executive committee member.</i> Community of early career researchers across different fields studying subduction zones around the world, under the SZ4D initiative.

## Outreach, DEI and Affiliations

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”.
June 2024	<b>What are rocks? Lesson at Chief Leschi School, Puyallup, Washington.</b> Co-led lesson for kinder, 1 <sup>st</sup> and 2 <sup>nd</sup> grader students through Riverways partnership program.
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.
August 2022	<b>Second National Conference Justice in Geosciences, Washington DC, USA.</b> An attendant in this historical conference, discussions, and workshops.
2021 – 2022	<b>College of Environment DEI Representative</b> of the Earth and Space Sciences Department of the University of Washington.
2017 – 2018	<b>Geosciences for Public Policies (GPP).</b> Member, organized group from the University of Chile.
<b>Affiliations</b>	American Geophysical Union (AGU); Geolatinas; Association of Women Geoscientists (AWG).

## Certifications, Workshops & Skills

Fall 2024	<b>Teaching Right Workshop class series,</b> College of Environment, University of Washington.
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 (16 hrs.)</b>
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 (ESPI)</b> 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.