# Marissa M. Tremblay

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#### EDUCATION

| University of California, Berkeley (UC Berkeley) | 2012–2017 |
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| Ph.D., Earth and Planetary Science (EPS)         |           |
| Advisor: David L. Shuster                        |           |
| Barnard College of Columbia University           | 2008–2012 |
| B.A. Environmental Science, summa cum laude      |           |

### **PROFESSIONAL APPOINTMENTS**

| Assistant Professor, Purdue University   | 2019–present |
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| Department of Earth, Atmospheric, and Planetary Sciences (EAPS)<br>Honorary Assistant Professor, University of Wisconsin-Madison<br>Department of Geoscience | 2022–2023    |
| Postdoctoral Researcher & Newton International Fellow of the Royal Society<br>Scottish Universities Environmental Research Centre (SUERC)                    | 2017–2019    |
| Mentor: Darren Mark<br>University of California President's Postdoctoral Fellow  | 2017         |
| University of California, Davis<br>Mentor: Sujoy Mukhopadhyay  |              |

# HONORS AND AWARDS

| Undergraduate Mentoring Award, Purdue College of Science   | 2025 |
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| Antarctica Service Medal   | 2023 |
| Sloan Research Fellowship, Alfred P. Sloan Foundation  | 2022 |
| Marion Milligan Mason Award for Women in the Chemical Sciences, American<br>Association for the Advancement of Science | 2020 |
| Doris M. Curtis Outstanding Woman in Science Award, Geological Society of America                                      | 2020 |
| Citation for Excellence in Refereeing, American Geophysical Union  | 2018 |
| Charles & Nancy Naeser Prize, Intl. Standing Committee on Thermochronology   | 2018 |
| Marie Skłodowska-Curie Individual Fellowship (declined)  | 2018 |
| The Royal Society Newton International Fellowship  | 2017 |
| University of California President's Postdoctoral Fellowship   | 2017 |
| Lamont-Doherty Earth Observatory Postdoctoral Fellowship (declined)  | 2017 |
| Louderback Award, UC Berkeley EPS  | 2015 |
| National Science Foundation Graduate Research Fellowship   | 2014 |
| Outstanding Graduate Student Mentor, NERDS program, UC Berkeley  | 2013 |
| Richards Family Graduate Fellowship, UC Berkeley   | 2012 |
| Departmental Honors, Barnard College Environmental Science   | 2012 |
| Distinction, Senior Thesis, Barnard College Environmental Science  | 2012 |
| Phi Beta Kappa   | 2011 |
| Barry M. Goldwater Scholarship   | 2011 |
| National Oceanic and Atmospheric Administration Ernest F. Hollings Scholar   | 2010 |

#### Peer-reviewed

- Blevins, A.M., Minton, D.A., Huang, Y.H., Du, J., **Tremblay, M.M.**, and Fassett, C.I., 2025, Apollo Impact Melts Record a Rapidly Declining Impact Rate in the Late Imbrian. *Journal of Geophysical Research: Planets*, v. 130, e2024JE008722. DOI: 10.1029/2024JE008722
- Mijjum, M.<sup>G</sup>, Bristol, K.E., Bono, R.K., Sprain, C.J., Lifton, N., and **Tremblay, M.M.**, 2025, A model framework for scaling pre-Quaternary cosmogenic nuclide production rates. *Geochemistry, Geophysics, Geosystems*, v. 26, e2024GC012020. DOI: 10.1029/2024GC012020
- Mijjum, M.<sup>G</sup>, Andrews, B., McCoy, T. Corrigan, C., Caffee, M.W., and Tremblay, M. M., 2025, Using micro-computed tomography (μCT) to determine subsample-specific cosmogenic noble gas production rates of enstatite (E) chondrites. *Meteoritics and Planetary Science*, p. 1-22. DOI: 10.1111/maps.143091
- **Tremblay, M.M.**, Mark, D.F., Barfod, D.N., Cohen, B.E., Ickert, R.B., Lee, M.R., Tomkinson, T., and Smith, C.L., 2024, Dating of recent aqueous activity on Mars. *Geochemical Perspective Letters*, v. 32, p. 58-62. DOI: 10.7185/geochemlet.2443
- Singer, B.S., Moreno-Yaeger, P., Townsend, M., Huber, C., Cuzzone, J., Edwards, B.R., Romero, M.<sup>G</sup>, Orellana-Salazar, Y., Marcott, S., Breunig, R., Ferrier, K., Scholz, K., Coonin, A.N., Alloway, B.V., Tremblay, M.M., Stevens, S., Fustos-Toribio, I., Moreno, P.I., Vera, F., and Amigo, A., 2024, New perspectives on ice forcing in continental arc magma plumbing systems. *Journal of Volcanology and Geothermal Research.* v. 455, 108187. DOI: 10.1016/j/jvolgeores.2024.108187
- Fink, J.<sup>G</sup>, **Tremblay, M.M.**, Tobin, T.S., Stockli, L.D., Stockli, D.F., and Ickert, R.B., 2024, Diagenesis of fossil gar fish scales with implications for geochronology and paleoenvironmental applications. *Geochimica et Cosmochimica Acta*. v. 372, p. 196-213. DOI: 10.1016/j.gca.2024.03.004
- Colleps, C.L., van der Beek, P.A., Amalberti, J., Denker, A., **Tremblay, M.M.**, Hajdas, W., Bernard, M., Dittwald, A.H., and Bundesmann, J., 2024, Improving the accessibility and efficiency of proton irradiations for <sup>4</sup>He/<sup>3</sup>He thermochronology. *Geochemistry, Geophysics, Geosystems*, v. 25(2), e2023GC011334. DOI: 10.1029/2023GC011334
- Guralnik, B., Tremblay, M.M., Phillips, M., Sellwood, E.L., Gribenski, N., Presl, R., Haberkorn, A., Sohbati, R., Shuster, D.L., Valla, P., Jain, M., Schindler, K., Hippe, K., and Wallinga, J., 2024, Three centuries of snowpack decline at an Alpine pass revealed by cosmogenic paleothermometry and luminescence photochronometry. *Geophysical Research Letters*, v. 51, e2023GL107385. DOI: 10.1029/2023GL107385
- Gribenski, N., **Tremblay, M.M.**, Valla, P.G., Guralnik, B., Balco, G., and Shuster, D.L., 2022, Cosmogenic <sup>3</sup>He paleothermometry on post-LGM glacial bedrock within the central European Alps. *Geochronology*, v. 4, p. 641-663. DOI: 10.5194/gchron-4-641-2022.
- O'Brien, A.C., Hallis, L.J., Regnault, C., Morrison, D., Blackburn, G., Steele, A., Daly, L., Tait, A., **Tremblay, M.M.**, Telenko, D., Gunn, G., McKay, E., Maria, N., Salik, M.A., Ascough, P., Toney, J., Griffin, S., Whitfield, P., and Lee, M., 2022, Using Organic Contaminants to Constrain the Terrestrial Journey of the Martian Meteorite Lafayette. *Astrobiology*, v. 22(11), DOI: 10.1089/ast.2021.0180
- van Zalinge, M.E., Mark, D.F., Sparks, R.S.J., **Tremblay, M.M.**, Keller, C.B., Cooper, F.J., and Rust, A., 2022, Timescales for pluton growth, magma chamber formation and super-eruptions. *Nature*, v. 608, p. 87-92. DOI: 10.1038/s41586-022-04921-9
- Dai, J., Fox, M., Han, X., **Tremblay, M.M.**, Xu, S., Liu, B., Li, H., Shuster, D.L., and Wang, C., 2021, Two stages of accelerated exhumation in the middle reach of the Yarlung River, southern Tibet since the mid-Miocene. *Tectonics*, v. 40, e2020TC006618. DOI: 10.1029/2020TC006618
- Domingos, R., **Tremblay, M.M.**, Militzer, B., and Shuster, D.L., 2020, Simulations and experiments reveal effect of nanopores on helium diffusion in quartz. *ACS Earth and Space Chemistry*, v. 4(11), p. 1906-1912. DOI: 10.1021/acsearthspacechem.0c00187
- Carter, J.N.<sup>G</sup>, Ickert, R.B., Mark, D.F., **Tremblay, M.M.**, Cresswell, A., and Sanderson, D.C.W., 2020, Production of <sup>40</sup>Ar by an overlooked mode of <sup>40</sup>K decay with implications for K-Ar geochronology. *Geochronology*, v. 2, p. 355-365. DOI: 10.5194/gchron-2-355-2020

- **Tremblay, M.M.**, and Cassata, W.S., 2020, Noble gas thermochronology of extraterrestrial materials. *Elements*, v. 16(5), p.331-336. DOI: 10.2138/gselements.16.5.331
- Zeitler, P.K., and **Tremblay, M.M.**, 2020, Measuring noble gases for thermochronology. *Elements*, v. 16(5), p. 343-344. DOI: 10.2138/gselements.16.5.343
- Carter, J.N.<sup>G</sup>, **Tremblay, M.M.**, and Mark, D.F., 2020, A Bayesian approach to the deconvolution of <sup>40</sup>Ar/<sup>39</sup>Ar data from mineral mixtures. *Chemical Geology*, v. 554, 119784. DOI: 10.1016/j.chemgeo.2020.119784
- Park, Y., Swanson-Hysell, N.L., MacLennan, S.A., Maloof, A.C., Gebreslassie, M., Tremblay, M.M., Schoene, B., Alene, M., Antilla, E.S.C., Tesema, T., and Haileab, B., 2020, The lead-up to the Sturtian Snowball Earth: Neoproterozoic chemostratigraphy time-calibrated by the Tambien Group of Ethiopia. *Geological Society of America Bulletin*, v. 132(5-6), p. 1119-1149. DOI: 10.1130/B35178.1
- **Tremblay, M.M.**, Shuster, D.L., Spagnolo, M., Renssen, H., and Ribolini, A., 2019, Temperatures recorded by cosmogenic noble gases since the last glacial maximum in the Maritime Alps: Quaternary Research, v. 91(2), p. 829-847. DOI: 10.1017/qua.2018.109
- Dygert, N., Jackson, C.R.M., Hesse, M.A., **Tremblay, M.M.**, Shuster, D.L., and Gu, J.T., 2018, Plate tectonic cycling modulates Earth's <sup>3</sup>He/<sup>22</sup>Ne ratio. *Earth and Planetary Science Letters*, v. 498, p. 309-321. DOI: 10.1016/j.epsl.2018.06.044
- Ingalls, M., Rowley, D., Olack, G., Currie, B., Li, S., Schmidt, J., Tremblay, M., Shuster, D.L., Lin, D., and Colman, A., 2018, Paleocene to Pliocene low-latitude high elevation of southern Tibet: Implications for tectonic models of India-Asia collision, Cenozoic climate, and geochemical weathering. *Geological Society of America Bulletin*, v. 130(1-2), p. 307-330. DOI: 10.1130/B31723.1
- **Tremblay, M.M.**, Shuster, D.L., Balco, G., and Cassata, W.S., 2017, Neon diffusion kinetics and implications for cosmogenic neon paleothermometry in feldspars. *Geochimica et Cosmochimica Acta*, v. 205, p. 14-30. DOI: 10.1016/j.gca.2017.02.013
- Garrick-Bethell, I., Weiss, B.P., Shuster, D.L., Tikoo, S.M., and **Tremblay, M.M.**, 2017, Further evidence for early lunar magnetism from troctolite 76535. *Journal of Geophysical Research: Planets*, v. 122(1), p. 76-93. DOI: 10.1002/2016JE005154
- Schmidt, J.L., Zeitler, P.K., Pazzaglia, F.J., **Tremblay, M.M.**, Shuster, D.L., and Fox, M., 2015, Knickpoint evolution on the Yarlung Tsangpo, southern Tibet: Evidence for a regional late Cenozoic base level adjustment. *Earth and Planetary Science Letters*, v. 430, p. 448-457. DOI: 10.1016/j.epsl.2015.08.041
- **Tremblay, M.M.**, Fox, M., Schmidt, J.L., Tripathy-Lang, A., Wielicki, M.M., Harrison, T.M., Zeitler, P.K., and Shuster, D.L., 2015, Erosion in southern Tibet shut down at 10 Ma due to enhanced rock uplift within the Himalaya. *Proceedings of the National Academy of Sciences*, v. 112(39), p. 12030-12035. DOI: 10.1073/pnas.1515652112
- Swanson-Hysell, N.L., Maloof, A.C., Condon, D.J., Jenkin, G.R.T., Alene, M., Tremblay, M.M., Tesema, T., Rooney, A.D., and Haileab, B., 2015, Stratigraphy and geochronology of the Tambien Group, Ethiopia: Evidence for globally synchronous carbon isotope change in the Neoproterozoic. *Geology*, v. 43(4), p. 323-326. DOI: 10.1130/G36347.1
- Breecker, D.O., Bergel, S., Nadel, M., Tremblay, M.M., Osuna-Orozco, R., Larson, T.E., and Sharp, Z.D., 2015, Minor stable carbon isotope fractionation between respired carbon dioxide and bulk soil organic matter during laboratory incubation of topsoil. *Biogeochemistry*, v. 123, p. 83-98. DOI: 10.1007/s10533-014-0054-3
- **Tremblay, M.M.**, Shuster, D.L., and Balco, G., 2014, Diffusion kinetics of <sup>3</sup>He and <sup>21</sup>Ne in quartz and implications for cosmogenic noble gas paleothermometry. *Geochimica et Cosmochimica Acta*, v. 142, p. 186-204. DOI: 10.1016/j.gca.2014.08.010
- Tremblay, M.M., Shuster, D.L., and Balco, G., 2014, Cosmogenic noble gas paleothermometry. *Earth and Planetary Science Letters*, v. 400, p. 195-205. DOI: 10.1016/j.epsl.2014.05.040
- Straub, M., **Tremblay, M.M.**, Sigman, D.M., Studer, A.S., Ren, H., Toggweiler, J.R., and Haug, G.H., 2013, Nutrient conditions in the subpolar North Atlantic during the last glacial period

reconstructed from foraminifera-bound nitrogen isotopes. *Paleoceanography*, v. 28, p. 79-90. DOI: 10.1002/palo.20013

#### In review or revision

- Mijjum, M.<sup>G</sup>, and **Tremblay, M.M.**, Helium diffusion kinetics in enstatite, kamacite, and albite, with implications for the cosmic ray exposure ages of enstatite (E) chondrites. In review.
- Blevins, A.M., Minton, D.A., Huang, Y.H., Du, J., **Tremblay, M.M.**, and Fassett, C.I., Constraining the source craters of Apollo impact melts. In review.
- **Tremblay, M.M.**, Fayon, A.K., Guo, H.<sup>P</sup>, Zeitler, P.K., and Idleman, B.D., Deformation modulates helium diffusion in apatite. In review.
- Guo, H.<sup>P</sup>, **Tremblay, M.M.**, Zeitler, P.K., Idleman, B.D., and Fayon, A.K. Systematics of helium diffusion sinks in apatite demonstrated by <sup>4</sup>He/<sup>3</sup>He degassing experiments and modeling. In review.
- Colleps, C.L., van der Beek, P., Amalberti, J., Sobel, E., **Tremblay, M.M.**, and Bernard, M., Evaluating the resolving power of apatite <sup>4</sup>He/<sup>3</sup>He thermochronology: Insights from the Fish Canyon Tuff. In review.

#### Other publications

- Ketcham, R.A., Tremblay, M.M., Abbey, A.L., Baughman, J.S., Cooperdock, E.H.G., Jepson, G., Murray, K.E., Odlum, M.L., Stanley, J.R., and Thurston, O.G., 2022, Report from the 17<sup>th</sup> International Conference on Thermochronology. *Earth and Space Sciences Open Archive*. doi: 10.1002/essoar.10511082.1
- Cohen, B.A., Zellner, N., Wadhwa, M., Turrin, B., **Tremblay, M.M.**, and 26 others, 2020, Geochronology as a Framework for Inner Solar System History. *Bulletin of the American Astronomical Society*, v. 53, no. 4, p. 020. doi: 10.3847/25c2cfeb.1b2670e3

# **CONFERENCE PROCEEDINGS, LAST 3 CALENDAR YEARS**

- Orellana-Salazar, Y., Marcott, S.A., **Tremblay, M. M.**, Moreno-Yaeger, P., Romero, M.<sup>G</sup>, and Mixon, E.E., 2025, A <sup>3</sup>He-based Holocene glacial chronology from Villarica volcano, Chile. European Geophysical Union, Vienna, Austria.
- Romero, M.<sup>G</sup>, Marcott, S.A., Cuzzone, J., **Tremblay, M.M.**, and Jones, A.G., 2025, A Data-Model Comparison of Ice Sheet Demise in Northern Patagonia During the Last Deglaciation. European Geophysical Union, Vienna, Austria.
- Montejo, C., Stanley, J.R., **Tremblay, M.M.**, Weeks, C., and Zhan, W.<sup>G</sup>, 2025, <sup>4</sup>He/<sup>3</sup>He thermochronometry reveals the late Cenozoic exhumation history of the Gallatin River catchment, SW Montana. Geological Society of America Rocky Mountain Section Meeting, Provo, UT.
- Curtis, A.C.<sup>G</sup>, **Tremblay, M.M.**, Eddy, M.P., and Woolery, C.<sup>U</sup>, 2025, The exhumation response to Siletzia collision and associated tectonic reorganization recorded in the thermal histories of Eocene plutons in the North Cascades, WA. Geological Society of America Cordilleran Section Meeting, Sacramento, CA.
- Montejo, C., Stanley, J.R., **Tremblay, M.M.**, Weeks, C., and Zhan, W.<sup>G</sup>, 2025, <sup>4</sup>He/<sup>3</sup>He thermochronometry reveals the late Cenozoic exhumation history of the Gallatin River catchment, SW Montana. Geological Society of America Rocky Mountain Section Meeting, Provo, UT.
- Mijjum, M.<sup>G</sup>, and **Tremblay, M.M.**, 2025, Helium diffusion kinetics in enstatite, kamacite, and albite, with implications for the cosmic ray exposure ages of enstatite (E) chondrites. Lunar and Planetary Science Conference, The Woodlands, TX.

- Blevins, A.M., Minton, D.A., Huang, Y.H., Du, J., **Tremblay, M.M.**, and Fassett, C.I., 2025, Using numerical modeling and Bayesian inference to constrain the source craters of Apollo impact melts. Lunar and Planetary Science Conference, The Woodlands, TX.
- Romero, M.<sup>G</sup>, Marcott, S.A., Cuzzone, J., **Tremblay, M.M.**, and Jones, A.G., 2025, A Data-Model Comparison of Ice Sheet Demise in Northern Patagonia During the Last Deglaciation. European Geophysical Union, Vienna, Austria.
- Orellana-Salazar, Y., Marcott, S.A., **Tremblay, M. M.**, Moreno-Yaeger, P., Romero, M.<sup>G</sup>, and Mixon, E.E., 2025, A <sup>3</sup>He-based Holocene glacial chronology from Villarica volcano, Chile. European Geophysical Union, Vienna, Austria.
- **Tremblay, M.M.**, Mark, D.F., Barfod, D.N., Cohen, B.E., Ickert, R.B., Lee, M.R., Tomkinson, T., and Smith, C.L., 2024, Dating of recent aqueous activity on Mars. American Geophysical Union Fall Meeting, Washington, D.C.
- Bristol, K.E., Sprain, C.J., Mittal, T., Monteiro, A., Duraiswami, R., **Tremblay, M.M.**, and Mijjum, M.<sup>G</sup>, 2024, Mantle Plumes and Geomagnetic Intensity Variations: Insights from the Deccan Traps. American Geophysical Union Fall Meeting, Washington, D.C.
- Montejo, C. Stanley, J., **Marissa, M.M.**, Weeks, C., and Zhan, W., Unravelling the Role of the Yellowstone Hotspot in the Late Cenozoic Exhumation History of the Gallatin River Catchment, Gallatin County, Southwest Montana. American Geophysical Union Fall Meeting, Washington, D.C.
- Romero, M.<sup>G</sup>, Marcott, S.A., Cuzzone, J., **Tremblay, M.M.**, Jones, A.G.,, Hietpas, E., and Orellana Salazar, Y., 2024, A Record of Northern Patagonian Ice Sheet Thinning During the Last Deglaciation. American Geophysical Union Fall Meeting, Washington, D.C.
- **Tremblay, M.M.**, Lifton, N.A., Cherkauer, K.A., Apel, E.V.<sup>G</sup>, Goss, G.A., and Tiwari, A., 2024, Timing of deglaciation from multiple cosmogenic nuclides in bedrock at McCullough Gulch, Southern Rocky Mountains, USA. Geological Society of America Annual Meeting, Anaheim, CA.
- Guo, H.<sup>P</sup>, **Tremblay, M.M.**, Zeitler, P.K., Idleman, B.D., and Fayon, A.K., 2024, Temperature-sensitive trapping of helium in apatite: insights from <sup>4</sup>He/<sup>3</sup>He diffusion experiments. 34<sup>th</sup> Annual V.M. Goldschmidt Conference, Chicago, IL.
- Guo, H.<sup>P</sup>, Fayon, A.K., **Tremblay, M.M.**, Zeitler, P.K., and Idleman, B.D., 2024, Investigating how deformation and pressure influence the behavior of helium in apatite. 34<sup>th</sup> Annual V.M. Goldschmidt Conference, Chicago, IL.
- Mijjum, M.<sup>G</sup>, **Tremblay, M.M.**, Andrews, B.J., McCoy, T.J., Corrigan, C.M., Caffee, M.W., Balco, G., and Shollenberger, Q.R., 2024, Effects of subsample heterogeneity and diffusion kinetics on the exposure ages of enstatite (E) chondrites. 87<sup>th</sup> Annual Meeting of The Meteoritical Society, Brussels, Belgium.
- **Tremblay, M.M.**, 2024, Opportunities and challenges for reconstructing past Earth and planetary surface temperatures with cosmogenic noble gases. 6<sup>th</sup> Workshop on Cosmogenic Nuclides (Cosmo2024), Cologne, Germany.
- Mijjum, M.<sup>G</sup>, Bristol, K.E., Bono, R.K., Sprain, C.J., Lifton, N., and **Tremblay, M.M.**, 2024, A model framework for scaling pre-Quaternary cosmogenic nuclide production rates. 6<sup>th</sup> Workshop on Cosmogenic Nuclides (Cosmo2024), Cologne, Germany.
- Montejo, C, Stanley, J.R., **Tremblay, M.M.**, and Weeks, C., 2024, Examining the Late Cenozoic exhumation history of the Gallatin River catchment and its relationship to the Yellowstone hotspot, Gallatin County, southwest Montana. Geological Society of America Joint Cordilleran and Rocky Mountain Section Meeting, Spokane, WA.
- Guo, H.<sup>P</sup>, Remian, B.<sup>U</sup>, and **Tremblay, M.M.**, 2024, Mid-Pleistocene changes in glacial erosion rates in the mid-latitude Patagonian Andes revealed by detrital thermochronology of ocean sediments. Geological Society of America Joint North Central and South Central Section Meeting, Springfield, MO.
- **Tremblay, M.M.**, Bourikas, T.<sup>U</sup>, Bergelin, M., and Balco, G., 2024, A proxy system model framework for reconstructing past environmental conditions with cosmogenic noble gases. European Geophysical Union, Vienna, Austria.

- Guo, H.<sup>P</sup>, Zeitler, P.K., Idleman, B., and **Tremblay, M.M.**, 2024, Helium diffusion systematics in apatites: lessons from Continuous Ramped Heating analysis. European Geophysical Union, Vienna, Austria.
- Bourikas, T.<sup>U</sup>, **Tremblay, M.M.**, Lamp, J.L., Balco, G., and Granger, D.E., 2024, Relationships between temperature, elevation, and surface exposure age in the McMurdo Dry Valleys, Antarctica. European Geophysical Union, Vienna, Austria.
- Blevins, A.M., Minton, D.A., Huang, Y.H., Du, J., and **Tremblay, M.M.**, 2024, Modeling the source of impact melt at the Apollo 14-17 sites. Lunar and Planetary Science Conference, The Woodlands, TX.
- Mijjum, M.<sup>G</sup>, Andrews, B.A., McCoy, T.J., Corrigan, C.M., Caffee, M.W., an **Tremblay, M.M.**, 2024, Using micro-computed tomography to determine subsample-specific cosmogenic noble gas production rates of E chondrites. Lunar and Planetary Science Conference, The Woodlands, TX.
- Remian, B.<sup>U</sup>, Guo, H.<sup>P</sup>, and **Tremblay, M.M.**, 2023, Using detrital thermochronology to investigate the erosional response to glaciation and tectonics in the midlatitude Patagonian Andes. American Geophysical Union Fall Meeting, San Francisco, CA.
- Bristol, K.E., Sprain, C.J., Griffis, A., Mittal, T., Fendley, I.M., Durraiswami, R.A., Monteiro, A., Mijjum, M.<sup>G</sup>, and **Tremblay, M.M.**, 2023, Assessing Eruptive Hiatus Durations of the Deccan Traps Large Igneous Province Using Quantitative Paleosecular Variation Analysis. American Geophysical Union Fall Meeting, San Francisco, CA.
- Colleps, C. van der Beek, P., Amalberti, J., **Tremblay, M.M.**, and Bernard, M., 2023, Establishing new proton-irradiation protocols for <sup>4</sup>He/<sup>3</sup>He thermochronology. 18<sup>th</sup> International Conference on Thermochronology, Riva del Garda, Italy.
- Mijjum, M.<sup>G</sup>, Bristol, K.E., Bono, R.K., Sprain, C.J., and **Tremblay, M.M.**, 2023, A model framework for scaling pre-Quaternary cosmogenic nuclide production rates. Geochronology Gordon Research Conference, West Dover, VT.
- Guo, H.<sup>P</sup>, Zeitler, P.K., and **Tremblay, M.M.**, 2023, Continuous ramped heating analysis of KTB apatites reveals diffusion sinks in apatite. Geochronology Gordon Research Conference, West Dover, VT.
- Fink, J.<sup>G</sup>, **Tremblay, M.M.**, Tobin, T. Stockli, L.D., Stockli, D.F., and Ickert, R.B., 2023, Diagenesis of fossil gar fish scales with implications for geochronological and paleoenvironmental applications. 33<sup>rd</sup> Annual V.M. Goldschmidt Conference, Lyon, France.
- Blevins, A. M., Minton, D.A., Huang, Y.-H., Du, J., and **Tremblay, M.M.**, 2023, Modelling the effects of post-Imbrium carters on the Apollo sampling record. 54<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, USA.
- Salazar, Y.O., Mixon, E., Moreno-Yaeger, P., Romero, M.<sup>G</sup>, **Tremblay, M.M.**, and Marcott, S.A., 2023, A <sup>3</sup>He based Holocene glacial chronology from Villarrica volcano, Chile. 21<sup>st</sup> Congress of the International Union for Quaternary Research, Rome, Italy.

# **CURRENT EXTERNAL FUNDING**

- Purdue Resources Empowering Coordinated Investigations for Sample Exploration 2025–2028 (PRECISE) Co-PI, National Aeronautics and Space Administration, Planetary Science
  - Co-PI, National Aeronautics and Space Administration, Planetary Science Enabling Facilities Program
- Collaborative Research: RUI: Resolving the effects of lithospheric foundering on 2024–2027 orogenesis: An example from the southern Puna plateau, Argentina
  - Co-PI, National Science Foundation, Tectonics Program
- Collaborative research: Reevaluating the timing and driver of escarpment retreat in 2024–2027 southeast Australia
  - PI, National Science Foundation, Geomorphology & Land Use Dynamics

| Testing the role of oceanic plateau cooling history and rheology on accretion    | 2022–2026 |
|--|-----------|
| Co-PI, National Science Foundation, Tectonics program                            |           |
| Collaborative research: Using the tempo of exhumation and relief development to  | 2022–2025 |
| investigate mantle-to-surface connections around the Yellowstone hotspot         |           |
| Co-PI, National Science Foundation, Tectonics program                            |           |
| Collaborative Research: Ice Forcing in Arc Magma Plumbing Systems (IF-AMPS)      | 2021–2026 |
| Co-PI, National Science Foundation, Frontier Research in Earth Sciences          |           |
| Collaborative research: Reconstructing temperatures during the mid-Pliocene Warm | 2020–2025 |
| Period in the McMurdo Dry Valleys with cosmogenic noble gases                    |           |
| PI, National Science Foundation, Antarctic Sciences program                      |           |
| Collaborative research: Using hiatus durations to quantify the tempo of Deccan   | 2020–2025 |
| volcanism  |           |
|  |           |

PI, National Science Foundation, Petrology and Geochemistry program

# **INVITED LECTURES**

| Department of Earth and Spatial Sciences, University of Idaho               | April 2025     |
|---|----------------|
| Department of Geological Sciences, University of Florida                    | February 2025  |
| Department of Earth and Environmental Science, Lehigh University            | November 2024  |
| Dept of Earth Environmental and Planetary Sciences Brown University         | October 2024   |
| Department of Earth Sciences, Dartmouth College                             | October 2024   |
| 6 <sup>th</sup> Workshop on Cosmogenic Nuclides (COSMO24)                   | May 2024       |
| Department of Earth and Environmental Sciences, Columbia University         | February 2024  |
| Department of Geology, Carleton College                                     | January 2024   |
| Institute of Geosciences, University of Potsdam                             | November 2023  |
| Department of Geology, University of Kansas                                 | February 2023  |
| School of Earth and Space Exploration, Arizona State University             | February 2023  |
| Dept. of Earth and Environmental Sciences, Syracuse University              | September 2022 |
| Department of Geosciences, Missouri University of Science and Technology    | February 2022  |
| Department of Earth Sciences, University of Geneva                          | December 2021  |
| Jackson School of Geosciences, University of Texas at Austin                | November 2021  |
| Department of Earth and Environmental Sciences, UT Arlington                | October 2021   |
| Department of Earth and Planetary Sciences, University of New Mexico        | September 2021 |
| Department of Geological Sciences and Engineering, Queen's University       | March 2021     |
| Department of Earth Sciences, University of Geneva                          | December 2020  |
| Purdue Climate Change Research Center                                       | December 2020  |
| Department of Geophysical Sciences, University of Chicago                   | November 2020  |
| Department of Geology, Carleton College                                     | October 2020   |
| Department of Earth and Atmospheric Sciences, Indiana University            | October 2020   |
| Department of Geology and Geophysics, Louisiana State University            | October 2020   |
| Department of Earth and Environmental Sciences, Vanderbilt University       | February 2020  |
| Department of Geosciences, Princeton University                             | November 2019  |
| Department of Geology, University of Illinois Urbana-Champaign              | October 2019   |
| The Hutton Club, University of Edinburgh                                    | November 2018  |
| School of Geographical & Earth Sciences, University of Glasgow              | March 2018     |
| School of Earth and Environmental Sciences, University of Manchester        | February 2018  |
| Department of Geoscience, University of Wisconsin–Madison                   | February 2018  |
| Department of Earth, Atmospheric, and Planetary Sciences, Purdue University | February 2018  |
| Department of Geology and Geophysics, Yale University                       | February 2018  |
| School of School of Earth and Ocean Sciences, University of Victoria        | January 2018   |

| Department of Earth, Ocean and Ecological Sciences, University of Liverpool<br>School of Earth and Environmental Sciences, University of St Andrews<br>Department of Earth and Planetary Science, UC Berkeley<br>Department of Earth and Planetary Sciences, UC Davis<br>Department of Geological Sciences, Stanford University<br>Department of Earth Science, University of California, Santa Barbara<br>Department of Geography and Environment, University of Aberdeen<br>Scottish Universities Environmental Research Centre  | November 2017<br>November 2017<br>May 2017<br>March 2017<br>February 2017<br>January 2017<br>October 2015<br>October 2015  |
|--|--|
| ACADEMIC ADVISING  |  |
| Postdoctoral researchers<br>Dr. Hongcheng Guo, Purdue University, EAPS<br>Dr. Nicholas Meszaros, Purdue University, EAPS<br><i>Current position: Visiting Assistant Professor, Earlham College</i>   | 2023–present<br>2023–2024  |
| PhD students<br>Moshammat Mijjum, Purdue University, EAPS<br>Matias Romero, UW-Madison, Geoscience (co-advised with Shaun Marcott)<br>Wenbo Zhang, Purdue University, EAPS<br>Dr. John Carter, SUERC (co-advised with Darren Mark)<br><i>Current position: Postdoctoral Scholar, Berkeley Geochronology Center</i>   | 2020–present<br>2022–present<br>2023–present<br>2018–2021  |
| MS students<br>Addison Curtis, Purdue University, EAPS<br>John Fink, Purdue University, EAPS<br><i>Current Position: PhD student, Boise State University</i>   | 2023–present<br>2020–2023  |
| Undergraduate & postbaccalaureate research assistants<br>Hannah Tharrington, Purdue Chemistry<br>Zachary Rynder, Purdue EAPS<br>Cayden Woolery, Purdue EAPS (REAL Scholar)<br>Abbigail Mackey, Purdue EAPS (REAL Scholar)<br>Abbigail Mackey, Purdue EAPS<br>Ain Sofea Zulkarnain, Purdue EAPS<br>Taylor Bourikas, Purdue EAPS<br>Kamden Maddox, Purdue EAPS<br>Kamden Maddox, Purdue EAPS<br>Bethany Remian, Purdue EAPS<br>Bethany Remian, Purdue EAPS<br>Gabrielle Wagner, Purdue EAPS<br>Justin Daisey, Purdue EAPS<br>Sui Xiong Tay, Purdue Materials Science Engineering<br>Devin Blair, Purdue EAPS<br>Brittany Linn, Purdue Chemistry<br>Juliana Peckenpaugh, Purdue EAPS<br>John Herring, Purdue EAPS (URSA Scholar)<br>Simon Mason, Purdue Computer Science (Summer Stay Scholar)<br>Isabella Zuffoletti, Purdue EAPS (URSA Scholar) | 2025–present<br>2024–2025<br>2024<br>2024<br>2023–2024<br>2023–2024<br>2023–2024<br>2022–2024<br>2022–2024<br>2022–2023<br>2021–2022<br>2021–2022<br>2021–2021<br>2020–2021<br>2020–2023<br>2020 |
| Samantha Golding, Purdue EAPS<br>Abigail Robinson, SUERC (Paneth Meteorite Trust Intern)<br>Matthew Kirk, UC Berkeley EPS  | 2019–2020<br>Summer 2018<br>2017–2018  |

| Tristan Bench, UC Berkeley EPS             |                                   | 2016–2017          |
|--|-----------------------------------|--------------------|
| Maura Uebner, UC Berkeley EPS (Honors      | s thesis)                         | 2015–2017          |
| Sylvia Woodmansee, UC Berkeley EPS         |                                   | Summer 2015        |
| Sarah Beroff, UC Berkeley EPS (NERDS       | program)                          | Summer 2013        |
| PhD student advisory committees            | committee chair)                  | 2019_present       |
| Grunden Goss Vale University Earth and     | Planetary Sciences                | 2013-present       |
| Xianmei Huang Purdue University FAPS       | (committee chair)                 | 2021-present       |
| Carlos Monteio University of Idaho Geolo   | ogical Sciences                   | 2023-present       |
| Yasmeen Orellano-Salazar, University of    | Wisconsin-Madison, Geoscience     | 2024–present       |
| Emily Apel, Purdue University, EAPS        | ,                                 | 2021–2023          |
| Dr. Laura Chaves, Purdue University, EAF   | PS (committee chair)              | 2019-2023          |
| Dr. Erin Donaghy, Purdue University, EAF   | PS (committee chair)              | 2020–2024          |
| Dr. Alexandria Koester, Purdue University  | , EÀPS                            | 2019–2023          |
| Dr. Riley McGlasson, Purdue University, E  | EAPS                              | 2021–2024          |
| Dr. Angus Moore, Purdue University, EAP    | S                                 | 2020–2023          |
| Dr. Sean Wiggins, Purdue University, EAF   | PS                                | 2020–2022          |
| MS student advisory committees             |                                   |                    |
| Chloë Weeks, University of Idaho, Geolog   | ical Sciences                     | 2021–2022          |
| PhD student examining committees           |                                   |                    |
| Joanne Elkadi, University of Lausanne, Ins | stitute of Earth Surface Dynamics | 2022               |
|  |                                   |                    |
| TEACHING                                   |                                   |                    |
|  |                                   |                    |
| Purdue University (as Instructor)          |                                   |                    |
| EAPS 100 Planet Earth                      | Spring 2021, Spring 2022, Spring  | 2023, Spring 2024, |
|  |                                   | Spring 2025        |

|                                  | Spring 2025                     |
|----------------------------------|---------------------------------|
| EAPS 591 Geo/cosmochemistry      | Fall 2020                       |
| EAPS 504 Geologic Dating Methods | Fall 2019, Fall 2021, Fall 2024 |
|                                  |                                 |

| UC Berkeley (as Graduate Student Reader or Graduate Stu | dent Instructor)         |
|---|--------------------------|
| EPS 124/224 Isotope Geochemistry                        | Spring 2015, Spring 2017 |
| EPS 116 Structural Geology and                          | Spring 2016              |
| Tectonics   |                          |
| EPS 117 Geomorphology                                   | Fall 2014                |
| EPS 131 General Geochemistry                            | Spring 2013              |

# DEPARTMENT & UNIVERSITY SERVICE

# **University Service**

| EAPS representative, College of Science Faculty Council                      | 2024–2025    |
|--|--------------|
| Search Committee, Frederick L. Hovde Dean of the College of Science          | 2023         |
| Fellowship Review Committee, Purdue Graduate School                          | 2023–2025    |
| Faculty Mentor, Emerging Leaders Science Scholars Program, Purdue University | 2023-present |
| College of Science   |              |

| Research Mentor, Research Excellence, Access and Learning (REAL) Scholars<br>Program, Purdue University Office of Diversity, Inclusion & Belonging | 2024         |
|--|--------------|
| Professional Participant, Widening the WISP Network event, Women in Science<br>Program   | 2024         |
| Career Mentor, Focus Forward Fellowship, Military Family Research Institute  | 2023         |
| Interviewee, Purdue Women's Network Cocktails and Conversation series  | 2023         |
| Snack and Chat faculty participant, Purdue College of Science Student Council  | 2021         |
| Judge, Purdue Undergraduate Research Conference  | 2020, 2024   |
| Panelist, "Ask a Scholar: Goldwater Scholars' Advice for Current Applicants,"<br>National and International Scholarships Office                    | 2020, 2021   |
| Department Service   |              |
| Safety Committee, Purdue EAPS  | 2020-present |
| Seminar Committee, Purdue EAPS   | 2024-present |
| Strategic Planning Committee, Purdue EAPS  | 2024-present |
| Organizer, EAPS Geology & Geophysics 'Gaggle' talk series  | 2020–2024    |
| Executive Committee, Purdue EAPS   | 2021–2024    |
| EAPS Advisor, Advanced Materials cluster search  | 2023         |
| Award Presenter, EAPS Awards Banquet   | 2022, 2023   |
| Ad hoc search committee in aqueous geochemistry  | 2022         |
| Organizer, EAPS recruitment booth, Meteoritical Society meeting, Glasgow   | 2022         |
| Graduate Committee, Purdue EAPS  | 2019–2021    |
| Outreach Committee, Purdue EAPS  | 2019–2021    |
| Rapporteur, EAPS Strategic Planning Initiative, "From the Bottom Up:<br>Interconnections between earth's interior and surface"                     | 2022         |
| Featured presenter, EAPS on the Rocks alumni event   | 2021         |
| Service in Former Departments  |              |
| Coordinator, SUERC seminar series  | 2018–2019    |

| Member, SUERC self-assessment team, Athena-SWAN Charter application         | 2018      |
|---|-----------|
| Co-coordinator, Center for Isotope Geochemistry seminar series, UC Berkeley | 2017      |
| Graduate Student Representative, Earth and Planetary Science, UC Berkeley   | 2015      |
| Co-coordinator, EPS graduate student brown bag seminar, UC Berkeley         | 2013–2014 |

# **PROFESSIONAL SERVICE**

# Peer-reviewed Journals

Associate Editor, *Geochronology (GChron)* Associate Editor, *The Journal of Geology* Guest Editor, *Elements* magazine, Noble Gas Thermochronology thematic issue Journal Referee: *American Journal of Science; Applied Geochemistry; Boreas; Chemical Geology; Chemical Physics; Earth and Planetary Science Letters; Earth Surface Dynamics; Geochemical Perspective Letters; Geochemistry, Geophysics, Geosystems; Geochimica et Cosmochimica Acta; Geochronology; Geology; Geophysical Research Letters; Geosphere; Journal of Geology; Journal of the Geological Society; Journal of Geophysical Research: Earth Surface; Journal of Geophysical Research: Planets; Meteoritics & Planetary Science; Nature; Nature Geoscience; Palaeogeography, Palaeoclimatology, Palaeoecology; Quaternary Geochronology; Quaternary Science Reviews; Science Advances; Tectonics* 

# **Funding Agencies**

- Proposal Review Panelist: American Association for the Advancement of Science Research Competitiveness Program; National Aeronautics and Space Administration; National Science Foundation; Advancing Geochronology Science, Spaces, and Systems (AGeS<sup>3</sup>)
- Ad Hoc Proposal Referee: American Chemical Society Petroleum Research Fund; European Commission; National Aeronautics and Space Administration; National Geographic; National Science Foundation; UK Science and Technology Facilities Council

| Conferences and Workshops   |           |
|---|-----------|
| Vice Chair, Gordon Research Conference on Geochronology                                     | 2023–2025 |
| Invitee and participant, Workshop on the future of the Cooperative Institute for            | 2024      |
| Dynamic Earth Research (CIDER)  |           |
| Session Convener, "What's the cosmognosis? Recent Advances in                               | 2024      |
| Understanding Earth and Planetary Processes with Cosmogenic Nuclides"                       |           |
| Geological Society of America Annual Meeting  |           |
| Session Convener, "Novel advances in understanding the behavior of noble                    | 2024      |
| gases in geologic materials" 34 <sup>th</sup> Annual V.M. Goldschmidt Conference            |           |
| Scientific Committee, 18 <sup>th</sup> International Conference on Thermochronology         | 2022–2023 |
| (Thermo2023)  |           |
| Discussion Leader, Evolution of the Lithosphere, Gordon Research Conference                 | 2020–2023 |
| on Geochronology  |           |
| Session Convener, "Developments and Challenges in (U-Th-Sm)/He                              | 2023      |
| Thermochronology" Thermo2023 Conference   |           |
| Session Convener, "Investigating Earth surface processes using cosmogenic                   | 2022      |
| nuclides, non-traditional isotope systems, and other novel proxies" 32 <sup>na</sup> Annual |           |
| V.M. Goldschmidt Conference   |           |
| Organizing Committee, 17 <sup>th</sup> International Conference on Thermochronology         | 2019–2021 |
| (Thermo2021)  |           |
| Invitee and participant, Strategic Planning Summit, American Association for the            | 2021      |
| Advancement of Science  |           |
| Discussion Moderator, National Academies of Sciences, Engineering, and                      | 2021      |
| Medicine Workshop, Identifying New Community-Driven Science Themes for                      |           |
| NSF's Support of Paleoclimate Research  |           |
| EarthRates All Hands Meeting invitee and participant  | 2021      |
| Session Convener, "Charles and Nancy Naeser Early Career Session"                           | 2021      |
| Thermo2021 Conference   |           |
| Session Convener, "Additional Noble Gas and Solid State Thermochronometers"                 | 2021      |
| Thermo2021 Conference   |           |
| Session Convener, "Advances and applications in Quaternary geochronology"                   | 2019      |
| 100" Annual American Geophysical Union Fall Meeting   | 0047      |
| Session Convener, "Innovations and Advances and in Thermochronology" 27"                    | 2017      |
| Annual V.M. Goldschmidt Conference  | 0040      |
| Session Convener, "Novel Geochemical Approaches for Quantifying Rates of                    | 2016      |
| Surface Processes 26" Annual V.M. Goldschmidt Conference                                    |           |
| Society Londorphin & Volunteering   |           |
| Member International Standing Committee on Thermochronology                                 | 2022 2021 |
| Member, Mineralogical Society of America Award Nomination Committee                         | 2023-2031 |
| Member at large Early Career Professional Penrose Conferences & Thomson                     | 2023-2024 |
| Field Forum Committee, Geological Society of America  | 2022-2020 |
| Volunteer Mentor, Geochronology Division, Geological Society of America Appual              | 2024      |
| Meeting, Anaheim, CA  | 2024      |

| Volunteer Mentor, Geochronology Gordon Research Conference                   | 2023      |
|--|-----------|
| Drop-in Mentor, Geological Society of America Annual Meeting, Portland, OR   | 2021      |
| Outstanding Student Paper Award Coordinator & Student Travel Grant Reviewer, | 2017–2018 |
| VGP Section, American Geophysical Union                                      |           |

# DIVERSITY, EQUITY, AND INCLUSION INVOLVEMENT

| Research Mentor, Research Excellence, Access and Learning (REAL) Scholars    | 2024         |
|--|--------------|
| Program Purdue University Office of Diversity Inclusion & Belonging          | 2024         |
| Faculty Mentor, Emerging Leaders Science Scholars Program, Purdue University | 2023-present |
| College of Science   |              |
| Unlearning Racism in Geosciences (URGE), Purdue pod faculty member           | 2021         |
| Member, ADVANCE Resource and Coordination (ARC) Network STEM Equity          | 2020-present |
| Brain Trust  |              |
| NASA Workshop Preventing Harassment in Science: Building a Community of      | 2020         |
| Practice Toward Meaningful Change  |              |
| Hollaback! Bystander Intervention Training to stop anti-Asian/American and   | 2020         |
| xenophobic harassment  |              |
| Purdue FIDIA Be a Better Ally: What We Say at Purdue and Why it Matters      | 2020         |
| Workshop   |              |
| Purdue LGBTQ Center Safe Zone training                                       | 2019         |
| Purdue ADVANCE/OVPEC Faculty Search Committee training                       | 2019         |
| Maximizing Student Potential Conference, Purdue Division of Diversity and    | 2019         |
| Inclusion  |              |

# OUTREACH AND VOLUNTEERING

| Classroom visits on Antarctica, Indianapolis Public Schools                | 2023         |
|--|--------------|
| SciLine Expert Source, American Association for the Advancement of Science | 2020-present |
| Science-A-Thon, Earth Science Women's Network                              | 2018–2021    |
| Speaker, Indiana Astronomical Society 2020 program series                  | 2020         |
| Guest, Purdue College of Science Superheroes of Science podcast            | 2019, 2023   |
| Volunteer, Skype a Scientist   | 2019–2021    |
| Pen pal, Letters to a Pre-Scientist  | 2018–2021    |
| Mentor, Society of Women in the Physical Sciences, UC Berkeley             | 2013–2015    |
| EPS graduate student outreach, Bay Area Scientists in Schools              | 2013–2016    |
| Research Mentor, UC Berkeley NERDS program                                 | 2013         |
| Alumni Admissions Representative, Barnard College                          | 2014–2020    |

# **PROFESSIONAL MEMBERSHIPS**

American Association for the Advancement of Science (2020–present); American Geophysical Union (2009–present); European Association of Geochemistry (2018–present); Geochemical Society (2012–present); Geological Society of America (2009–present); Mineralogical Society of America (2020–present); Meteoritical Society (2017–present); National Association of Geoscience Teachers (2020–present).