

James K. Muller, PhD

Scripps Institution of Oceanography, UC San Diego
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EDUCATION	PhD, Earth Science	2019–2025
	Scripps Institution of Oceanography, UC San Diego, CA, USA Dissertation advisor: Dr. Emily J. Chin	
	AM, Earth & Planetary Sciences	2016–2019
	Harvard University, MA, USA	
	MA, Geological & Environmental Science	2014–2016
	Queens College, City University of New York, NY, USA Thesis advisor: Dr. Marc-Antoine Longpré	
	BA, Geology	2009–2013
	Pomona College, CA, USA Thesis advisors: Dr. Jade Star Lackey and Dr. Richard W. Hazlett	
	Field camp	2012
	Frontiers Abroad, University of Canterbury, New Zealand	
EMPLOYMENT	Postdoctoral Researcher	10/2025–present
	Scripps Institution of Oceanography, UC San Diego, La Jolla, CA	
	Graduate Researcher & Teaching Assistant	09/2019–09/2025
	Scripps Institution of Oceanography, UC San Diego, La Jolla, CA	
	Curation Intern	06/2019–08/2019
	Harvard Museum of Natural History, Cambridge, MA	
	Graduate Researcher & Teaching Assistant	06/2016–05/2019
	Harvard University, Cambridge, MA	
	Graduate Research & Teaching Assistant	08/2014–05/2016
	CUNY Queens College, Flushing, NY	
	Hydrogeologist	05/2015–08/2015
	Thomas Harder & Co., Inc., Anaheim, CA	
	Hydrogeologist I	08/2013–08/2014
	Leggette, Brashears & Graham, Inc., Shelton, CT	
	Teaching Assistant	01/2013–05/2013
	Pomona College, Claremont, CA	

**SCHOLARLY
PUBLICATIONS** *IN PRINT*

1. Durkin, K., P. R. Castillo, S. M. Straub, S. Mallick, A. Saal, **J. K. Muller** (2025) Widespread contamination of the Pacific upper mantle during the Cretaceous: *Marine Geology*, 107460, [doi:10.1016/j.margeo.2024.107460](https://doi.org/10.1016/j.margeo.2024.107460).
2. **Muller, J. K.**, M.-A. Longpré (2024) Tephra dispersal and composition reveal the explosive onset of a large basaltic fissure eruption: Timanfaya, Lanzarote 1730–1736 CE: *Bulletin of Volcanology*, vol. 86, no. 38, [doi:10.1007/s00445-024-01729-5](https://doi.org/10.1007/s00445-024-01729-5).

IN REVIEW/REVISION

1. **Muller, J. K.**, E. J. Chin, Enigmatic lavas from a fossil slab remnant beneath Baja California, Mexico: *Geology*. (manuscript available upon request)

IN PREPARATION

1. **Muller, J. K.**, E. C. McIntosh, S. T. Curran, B. H. Gruber, J. Lyakov, S. Maher, E. J. Chin, J. M. D. Day, Hot, or not? Testing hotspot and lithospheric extension models for the formation of the Fieberling-Guadalupe Seamount Trail, eastern North Pacific Ocean.

**CONFERENCE
PROCEEDINGS**

1. **J. K. Muller**, E. J. Chin, 2025, Young lavas from melting of a fossil slab remnant, Baja California, Mexico: Geol. Society of America Abstracts with Programs, v. 57, no. 4.
2. Wilson, A. M., C. Pagniello, J. S. Greenbaum, K. Auzenne, M. C. Kerr, K. Barbeau, W. Chapman, J. Dedrick, C. J. Ellis, M. M. Faulkner, K. Guirguis, A. Ho, L. Hoffman, J. Kalansky, J. A. MacKinnon, **J. K. Muller**, P. Mulrooney, M. Nelson, N. Oakley, S. Ogle, A. Rodriguez, L. M. Russell, R. Sanchez, M. Sierks, A. Schulberg, P. Yao, 2021, URGE at Scripps Institution of Oceanography — Accomplishments, challenges, and future plans: American Geophysical Union Fall Meeting, New Orleans, LA, Abstracts, no. U35A-2268.
3. **Muller, J. K.**, M. S. Kemmerlin, J. M. Gonzalez-Santana, H. I. Shamloo, Y. J. Tan, Y. Zhan, C. M. Smith, M. Myers, P. M. Gregg, G. A. Abers, T. A. Plank, P. J. Wallace, B. J. Andrews, D. C. Roman, G. Bergantz, K. M. Cooper, 2019, Tectonic and compositional controls on magma storage depths globally: Results from CIDER 2019: American Geophysical Union Fall Meeting, San Francisco, CA, Abstracts, no. V23D-0256.
4. Schools, J., J. V. Adams, K. Chotalia, **J. K. Muller**, E. C. Weidner, M. I. Billen, L. N. Moresi, M. S. Miller, 2019, Slab-wedge coupling promotes deep subduction of sediment: Geodynamic insights to mantle geochemical heterogeneity: American Geophysical Union Fall Meeting, San Francisco, CA, Abstracts, no. DI33B-0036.
5. Thompson, E.C., E. Bredow, N. Creasy, K.E. Godfrey, **J. K. Muller**, M. Xu, C. Wang, M. Ballmer, S. Huang, G. Morra, S. Mukhopadhyay, 2019, Thermochemical evolution of mantle plumes observed spatially: *Geophysical Research Abstracts* v. 21, no. EGU2019-10523-1.

6. **Muller, J. K.**, J. Schools, K. Chotalia, E. Weidner, J. V. Adams, M. Billen, L. Moresi, M. Miller, L. Waszek, T. Becker, C. Lithgow-Bertelloni, L. Stixrude, D. Weis, 2018, Can a subducted sedimentary layer survive into the deep mantle? American Geophysical Union Fall Meeting, Washington, D.C., Abstracts, no. DI23B-0040.
7. Thompson, E. C., E. Bredow, N. Creasy, K. E. Godfrey, **J. K. Muller**, M. Xu, C. Wang, M. Ballmer, S. Huang, G. Morra, S. Mukhopadhyay, 2018, Thermochemical evolution of mantle plumes observed spatially: American Geophysical Union Fall Meeting, Washington, D.C., Abstracts, no. T51D-0196.
8. Ferguson, D. J., C. H. Langmuir, Y. Li, K. Costa, P. Huybers, J. McManus, S. Carbotte, **J. K. Muller**, 2018, Time-series for mid-ocean ridge magmas from sediment-hosted volcanic glasses: 28th Goldschmidt Conference, Boston, MA, Abstracts, no. 698.
9. Longpré, M.-A., **J. K. Muller**, P. Beaudry, A. Andronikides, A. Felpeto, 2017, Historical volcanic eruptions in the Canary Islands, tephra composition, and insights into the crystal cargo of basaltic magmas: American Geophysical Union Fall Meeting, New Orleans, LA, Abstracts, no. V23C-0494.
10. **Muller, J. K.**, M.-A. Longpré, 2015, Reconstructing the 1730-1736 Timanfaya eruption (Lanzarote, Canary Islands) using tephrostratigraphy: 26th IUGG General Assembly, Prague, Czech Republic, Abstracts, no. VS24-5093.
11. **Muller, J. K.**, P. Beaudry, M.-A. Longpré, 2015, Exploring the eruptive sequence and chemical evolution of the AD 1730-1736 Timanfaya eruption, Lanzarote, Canary Islands: 2015 AGU Joint Assembly, Montreal, Canada, Abstracts, no. VGP24A-0398.
12. **Muller, J. K.**, J. S. Lackey, B. R. Jicha, R. W. Hazlett, I. N. Bindeman, 2014, Age and origin of the Malapai Hill basalt, Joshua Tree National Park, California: Geol. Society of America Abstracts with Programs, v. 46, no. 5.
13. Murphy, B. S., K. S. Metcalfe, G. Ruiz, L. G. Curtin, S. R. Chestler, J. C. Penido, **J. K. Muller**, E. B. Grosfils, 2012, Magma reservoir rupture beneath a Venusian edifice: when does lithospheric flexure become important? 43rd Lunar & Planetary Sci. Conference, The Woodlands, TX, Abstracts, no. 1060.
14. Lackey, J. S., K. Beeler, M. Williams, **J. K. Muller**, I.N. Bindeman, J.W. Valley, 2011, Resolving the cementation history of sandstones in the Long Valley Caldera, CA: 43rd American Chemical Society Western Regional Meeting, Pasadena, California, Abstracts, no. 240.
15. **Muller, J. K.**, Y. Ma, J. G. Muller, Y. L. Chiu, S. G. Memtsoudis, 2010, The prevalence of comorbidities in patients with pulmonary hypertension undergoing knee arthroplasty: American Society of Anesthesiologists, 2010 Annual Meeting, San Diego, CA, Abstracts, no. A1419.

TEACHING

(F: Fall, S: Spring)

UC San Diego

<i>SIO 152</i>	Lecturer (instructor of record), <i>Petrology</i>	S'26 (upcoming)
<i>SIO 152</i>	Teaching Assistant, <i>Petrology</i>	S'24
<i>SIO 16</i>	Teaching Assistant, <i>Geology of the National Parks</i>	S'21, S'23
<i>SIO 50</i>	Teaching Assistant, <i>Introduction to Physical Geology</i>	F'21

Harvard University

<i>EPS 109</i>	Teaching Fellow, <i>Earth Resources & the Environment</i>	S'19
<i>EPS 142</i>	Teaching Fellow, <i>Mineralogy</i>	F'17

Queens College, City University of New York

<i>GEOL 201</i>	Instructor, <i>Petrology</i>	S'16
<i>GEOL 101</i>	Lab Instructor/TA, <i>Introduction to Geology</i>	F'14, S'15, F'15

Pomona College

<i>GEOL 20</i>	Grader/TA, <i>Oceanography</i>	S'13
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GRANTS

<i>UC Ship Funds</i>	2025 PI, Research ship time ~40% to JKM; total \$598,724 Project: <i>Volcanism of the CA Borderlands</i> (sailing 02/2026)	
<i>SIO, UCSD</i>	2025 Shepard Foundation Research Grant Project: <i>Big Pine Volcanic Field magmatic processes</i>	\$1,620
<i>SIO, UCSD</i>	2024 SIO Graduate Student Research Grant Project: <i>Ar-Ar geochronology of Spiess Seamount Chain lavas</i>	\$1,500
<i>SIO, UCSD</i>	2023 SIO Graduate Student Travel Grant Participation in cruise KH23-9	\$1,500
<i>Sigma Xi</i>	2020 Grant-in-Aid of Research Project: <i>Ar-Ar geochronology of Fieberling Seamounts</i>	\$1,000
<i>SIO, UCSD</i>	2020 Shepard Foundation Research Grant Project: <i>Fieldwork in the Golden Trout Volcanic Field</i>	\$1,969
<i>Geol. Soc. Am.</i>	2015 Graduate Student Research Grant Project: <i>Electron microprobe analyses of Timanfaya lavas</i>	\$1,250

AWARDS

<i>SIO, UCSD</i>	Scripps Faculty Fellowship (\$32,000)	2019
<i>GNS Science</i>	PhD Scholarship (with U. Auckland; <i>declined</i>)	2019
<i>Cornell U.</i>	Cornell Fellowship (<i>declined</i>)	2019
<i>U. Nevada</i>	Mackay Scholar (<i>declined</i>)	2016
<i>U. Wisconsin</i>	Weeks Assistantship (<i>declined</i>)	2016
<i>Sigma Xi</i>	Honor Society inductee (CUNY Queens College)	2015
<i>Queens College</i>	Roux Tuition Award (\$2,975)	2015
<i>Queens College</i>	Gural Scholarship (\$3,000)	2015
<i>Pomona College</i>	R. Strehle Memorial Award (\$1,000)	2013

PROFESSIONAL SERVICE	<i>Journal Reviewer</i>	
	– Journal of Petrology	2025–present
	<i>Mentorship</i>	
	– Co-PI, MSc research, Emmerson Lahey (UCSD)	2025–present
	Project: <i>Diffusion timescales of Big Pine Volcanic Field magmatism</i>	
	– Mentor, undergraduate research, Kris Wang (UCSD)	2024–present
	Project: <i>Characterization of volcanic rocks, Isla Guadalupe, MEX</i>	
	– Mentor, undergraduate research, George Lee (UCSD)	2022–2023
	Project: <i>Olivine insights to magmatism, Golden Trout Volcanic Field, CA</i>	
	– Mentor, undergraduate research, Anju Singh (Queens College)	2015
	Project: <i>Zoning in crystal cargo of Timanfaya lavas, Lanzarote, ESP</i>	
	<i>Other Service & Outreach</i>	
	– Alumni admissions interviewer (Pomona College)	2013–present
	– Geophysics faculty search committee student member (UCSD)	2024
	– IAVCEI ECR Network leadership committee	2015–2023
	– Convener, IAVCEI Scientific Assembly	2023
	– Tectonics faculty search committee student member (UCSD)	2020
	– SIO graduate student community events organizer (UCSD)	2019–2020
	– Departmental seminar organizer (Harvard)	2016–2019
	– EPS inclusive spaces committee member (Harvard)	2018–2019
	– Tectonics faculty search committee student member (Harvard)	2019
	– Organizer, graduate student field trips (Harvard)	2016–2018
	– Student field trip organizer (Queens College)	2015
	– Guest lecturer (Inst. de Educación Sec. les Zonzamas, Lanzarote)	2015
	– Desert Institute field trip co-presenter (Joshua Tree NP Assoc.)	2013
	– Student geology demonstrator (Pomona College)	2012–2013
WORKSHOPS	Cooperative Institute for Dynamic Earth Research (CIDER), UC Berkeley	2019
	CIDER, UC Santa Barbara	2018
	IAVCEI Tephra workshop, Portland, OR	2017
	IAVCEI Tephra workshop, Prague, Czech Republic	2015
	SIMS workshop, UC Los Angeles	2015
PROFESSIONAL ASSOCIATIONS	American Geophysical Union	
	Geological Society of America	
	International Assoc. of Volcanology & Chemistry of Earth's Interior	
	Geochemical Society	
	Sigma Xi	