Tanya Furman
Professor, Department of Geosciences
Pennsylvania State University

Education

1982	B.S.E. Civil Engineering	Princeton University (magna cum laude)
1989	Ph.D. Geochemistry	Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program

Professional Experience

2025-	Earth Science Delegate, Oxford University Press
2024-	Elected Member, AGU Board of Directors
2021-2022	President, Education Section of the American Geophysical Union
2013-2017	Associate Vice President & Associate Dean for Undergraduate Education
2010-2017	Director, Earth and Space Science Partnership
2015-2017	Interim Director, University Fellowships Office
2014-2015	Interim Director, Millennium Scholars Program
2007-2013	Assistant Vice President & Associate Dean for Undergraduate Education
2005-	Professor, Department of Geosciences, Pennsylvania State University
2005-2006	Acting Director, Alliance for Earth Science, Education and Development in Africa, Pennsylvania State University
1999-2004	Associate Department Head for Undergraduate Programs, Department of Geosciences, Pennsylvania State University
1998-2005	Associate Professor, Department of Geosciences, Pennsylvania State University
1992-1998	Assistant Professor, Department of Environmental Sciences, University of Virginia
1989-1993	Founding Director, Virginia Museum of Natural History, UVa Branch
1986-1988	Research Assistant, Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology
1985	Teaching Assistant, Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology

Honors and Awards

Editors' Citation for Excellence in Refereeing, American Geophysical Union, 2021
President, Education Section of the American Geophysical Union (Pres-Elect 2018-2020)
Global Programs Fellow, Penn State University (2018-2020)
Achieving Woman Award, Penn State Commission for Women (2012)
CIC-Academic Leadership Program Fellowship (2006-2007)
Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (2005)
Pennsylvania State University e-Education Fellowship (2006-2007)
Faculty Mentoring Award, College of Earth and Mineral Sciences (2003)
Project Kaleidoscope, Faculty for the 21st Century, National Steering Committee (2003-2009)
George H. Deike, Jr. Research Award, College of Earth and Mineral Sciences (2002)
Golden Key National Honor Society - Honorary Membership, University of Virginia (1997)
National Science Foundation CAREER Award (1995)
Seven Society Recognition for Excellence in Teaching and Mentoring, University of Virginia (1995)
Alumni Association Board of Trustees Distinguished Young Teacher Award, Univ. of Virginia (1994)
Lilly Teaching Fellowship, University of Virginia (1992-1993)
National Science Foundation graduate fellowship (1984-1987)
Geological Society of America Penrose Outstanding Mention (1984, 1985)
Ida Green graduate fellowship (1983-1984)
Fulbright Fellowship to Iceland (1982-1983)
W. Taylor Thom Prize in Geological Engineering, Princeton University (1982)

Current Research Interests

- Using geochemistry of volcanic rocks to unravel processes attendant to Earth's formation and internal structures (e.g., separation of core, mantle and crust; plate tectonic movements)
- Developing learning progressions for geosciences with the goal of improving pedagogy in middle grades and college (e.g., large spatial and temporal scales; 3-dimensional visualization; connections between processes, phenomena and features)

Graduate Students Supervised

Denali Kincaid (PhD candidate) Evolution of plagioclase ultraphyric basalts in southern Iceland: source contributions and crustal transport during post-glacial volcanism.

Bryan Brightbill (PhD candidate, Curriculum and Instruction, Penn State University; committee member)

Shelby Bowden (PhD 2023) Geochemical, mineralogical and tectonic evolution of mafic lavas from the subcontinental lithospheric mantle beneath the northwestern Arabian plate

Collin Oborn (MS 2020) Evolution of Tungnáhraun volcanic system, SE Iceland

Erica Pitcavage (PhD 2019) Geochemical investigations of continental rift magmatism: a case study in East Africa's Western Rift

Kathryn Bateman (PhD 2019) Assembling policy dilemmas: Science teacher responses to educational policy (Curriculum and Instruction, Penn State University; committee member)

Helen Gall (PhD 2018) A geochemical approach to mantle and crustal dynamics in Central Anatolia

Megan Pickard (PhD 2015) Geochemistry of mafic Anatolian lavas: geochemical insight on ancient continental assembly and break-up.

Sara Mana (PhD 2013, Rutgers University) Geochemical and geochronological development of the Northern Tanzania Divergence (co-supervised with Carl Swisher)

Chira Endress (MS 2010) Evolution of Mesozoic Egyptian basalts and the role of lithospheric melting in North African basalt volcanism

Wendy Nelson (PhD 2009) Isotopic heterogeneity in the South African Superplume

Sabrina Innocenti (PhD 2006) Petrographic, textural and geochemical constraints on eruptive behavior of Merapi Volcano, Indonesia

Tyrone Rooney (PhD 2006) Geochemical evidence for progressive continental rupture in the Main Ethiopian Rift

Roeland Doust (MS 2003) Volcanic hazards of Mount Agung, Bali, Indonesia.

Kelly Knight (MS 2002) Tertiary basalt magmatism in Turkana Kenya, with implications for evolution of the East African Rift System

Keith Reinhardt (MS 2000) Effects of severe flooding on base cation cycling in the Staunton River watershed, central Virginia Blue Ridge

Andrea Korsak (MS 1997) Sources of sulfur to Yellow Creek and Coal Run, Otter Creek Wilderness, West Virginia: a stable isotope approach

Ross Fitzhugh (MS 1995) Controls on longitudinal and seasonal variation of stream acidity in a headwater catchment on the Appalachian Plateau, West Virginia

Leif Riddervold (MS 1995) Sources of nitrogen to the high marsh/upland transition zone of a Virginia back-barrier system

Susan Ingersoll (MS 1994) Heterogeneous sulfate adsorption in soils derived from pre-Cambrian granite gneiss in Shenandoah National Park, Virginia (co-supervised with B.J. Cosby)

Scott Robinson (MS 1993) Variations in clay mineralogy and sediment texture in salt marsh soils of the Eastern Shore of Virginia

Postdoctoral Research Associates Supervised

Ibrahima Dia (PhD Cheikh Anta Diop University 2018) Fulbright Faculty Scholar; Evolution of the Mako belt mafic and ultramafic rock series

Gokhan Buyukkharaman (PhD Balikesir University 2013) Evolution of mafic lamprophyres in Western Anatolia, with implications for inception of slab rollback

Kaan Sayit (PhD Middle East Technical University 2010) Isotopic constraints on evolution of Hasandag and Karapinar volcanic provinces, Central Anatolia Volcanic Zone

Meredith Bembenic (PhD Penn State University 2010) Developing a hypothetical learning progression on student conceptions of plate tectonics

Godwin Mollel (PhD Rutgers University 2008) Petrogenesis of Essimingor central volcano, Tanzania

Supriyati Andreastuti (PhD University of Aukland 1999) Textural constraints on explosive volcanism at Merapi and Montserrat volcanoes (supervised with Barry Voight)

Biltan Kurkcuoglu (PhD Hacattepe University 2002; TUBITAK international postdoctoral fellowship) Geochemical evolution of post-collisional basalts in northern Anatolia, Turkey

Dongmei Yu (PhD Geneva 1990) Oxygen isotopic analysis of precipitation and stream water from Staunton River, Virginia: determining the effects of the 1995 flooding on water storage

Karen Bartels (PhD MIT 1991) Establish 1-atmosphere experimental laboratory and conduct experimental studies of elemental partitioning in mafic alkalic lavas (1 atm to 20 kbar)

Undergraduate Student Research Supervised (2000-present) (BS theses in bold)

Ava Marie Hauseman (BS 2028 ESP) Deep-sea mining of manganiferous nodules
Josephine Akhigbe (BS 2025 Biology) Recent rainfall trends in supra-Saharan Africa (WISER)
Mia Petrucela (BS 2025 Chemistry) Geochemistry of Adigrat basalts
Jackson Bryant (BS 2027) TBD
Caitlin Dooley (BS 2024) Trace element signatures of plagioclase feldspar macrocrysts from SE Iceland
Luke Benson (BS 2024) Sr isotope heterogeneity in plagioclase feldspar macrocrysts from SE Iceland
Jalen Scott (BS 2024) Geochemistry of lavas from the northern Sanandaj-Sirjan zone, Iran (MCREU)
Audrey Yin (BS 2026, University of Virginia) Geochemistry of lavas from the northern Sanandaj-Sirjan zone, Iran (AGILE)
Emma Stolinas (BS 2024) Mineralogical nature of the sublithospheric mantle beneath Uganda
Angelina Santamaria (BS 2023) Chemical zoning in clinopyroxene from Harrat Uwayrid, Saudi Arabia ***and*** Hidden Landscapes, an exhibit in the EMS Museum
Sunday Siomades (BS 2023) Internship developing monthly newsletter for AGU Education Section
Madeline Murtaugh (BS 2023) Nature of the sublithospheric mantle beneath Uganda
Amanda Urist (BS 2024) Assembly of the West African craton.
Avadhoot Date (MS 2021) Lamprophyre petrogenesis (Bose Scholar from India)
Aimee Zimmerman (BS 2022) Mapping young lavas in NW Saudi Arabia with GIS
Oliver Marra (BS 2021) Crystal size distributions in Icelandic plagioclase-ultraphyric basalts
Amanda Byrd (BS 2021) Origin of basalt magmatism in NW Saudi Arabia
Emily Loucks (BS 2020) Origin of basalt magmatism in NW Saudi Arabia
Michael Gilbert (BS 2019) Cascades rhyolites – the Big Obsidian Flow case study
Laura Hartman (BS 2016) Metasomatized peridotites and alkali basalts from Tekirdag, Turkey
Kyle Veloski (BS 2016) Petrogenesis of intermediate lavas from NW Iran
Jacob Cipar (BS 2016) Clues to crustal evolution from the petrogenesis of andesites at Hasandag, Central Anatolia (Discovery Grant recipient, 2014)
Ianna Lima (Brazilian Scientific Mobility Program, 2015) Petrogenesis of Iranian alkali granites
Berivan Gunes (BS 2015, Hacettepe University) Peridotite xenoliths from Tekirdag, Turkey
Raleigh Koberle (BS 2014) Magma chamber processes at Thrihnukurgigur, Iceland, revealed by crystal size distribution analysis
Molly Witter (BS 2013) Volcanic processes at Telica volcano, Nicaragua
Jenna Ellis (BS 2009) Tectonic geomorphology: a middle school Earth Science lesson
Charles Plummer (BS 2008, College of William & Mary) Field relations in Sivas, Turkey (summer 2006)
Charles Plummer (BS 2008, College of William & Mary) Gondwana flood basalts (summer 2005)
Abbey Rhode (BS 2007) Lithospheric thinning during Gondwana break-up
Gabriel Akec (BS 2007) A Ministry of Natural Resources for Southern Sudan
Jeff Creamer (BS 2006) Petrogenesis of felsic lavas at Turkana, Kenya
Robin Jones (BS University of New Orleans 2006) Petrogenesis of Nyiragongite and related lavas
Erica Campbell (BS Tuskegee 2005) Mineral chemistry of Main Ethiopian Rift basalts
Sheri Cahill (BS 2002) Petrology of mafic lavas from the western escarpment of the Ethiopian plateau
Kim Gehman (BS 2002) Geochemistry of Cretaceous basalts in Tortola, British Virgin Islands
Meredith Hill (BS 2002) Geochemistry of the Main Ethiopian Rift
Philip Daniels (BS 2002, University of Wales) Geochemistry of the Acatlan ignimbrite
Hilary Gittings (BA 2002, Carleton College) Geochemistry of Eocene basalts from central Virginia
Lauren Cooper (BS 2001) Petrology and mineral chemistry of Merapi andesites

Contributions to pre-college students

Crimson Education – I mentor IB high school students from China and Australasia on research projects ranging from climate to mining to seismicity.

Concord Consortium – I served as a consultant to the TecRocks project which aims to bring high-quality animations of geological processes to the pre-college classroom.

Environmentors **–** I have mentored BIPOC high school students and Penn State undergraduates in authentic research experiences and presented on my research to groups of Pennsylvania teachers.

Scientific Publications (student authors underlined where publication results from MS/PhD work)

Manuscripts in review

Dia I, Faye CI, Sy B, Gueye M, Furman T, Diagne M. What can we reliably map for orogenic gold? A scoping review and practical checklist. Minerals (submitted)

Bowden S, Furman T, Alhumimidi M & Stolinas E. Lithospheric stability and recycling linked to ancient metasomatic processes. Nature Communications (in revision).

Torkian A, Fazel ET, Furman T, Ajalli N. Geochemistry, fluid inclusions, and O-H-S stable isotopes constraints on genesis of the Rasht-Abad Cu±Au deposit and its host rocks, Tarom–Hashtjin metallogenic province, NW Iran. Geochemistry (resubmitted following revision).

Babazadeh S, D'Antonio M, Raeisi D, Furman T, Santosh M, De Renzo V, Klötzli U, Ghalamghash J, Palin RM, Cottle JM. Reconstructing the Central Iran Plateau: insights from plutonic rocks and zircons from the central Urumieh-Dokhtar magmatic arc, Iran. Chemical Geology (resubmitted following revision)

Publications

Dia I, Furman T, Sayit K, Bowden S, Guéye M, Faye CI & Vanderhaeghe O, 2025. Paleoproterozoic mafic and ultramafic rocks from the Mako Belt, Senegal: Implications for back-arc basin origin. Minerals, 15, 1057, https://doi.org/10.3390/min15101057

Furman T, Kincaid D & Oborn Brady C, 2025. Evolution of mafic Tungnárhraun lavas: transcrustal magma storage and ascent beneath the Barðabunga volcanic system. Minerals, 15, 687, https://doi.org/10.3390/min15070687

Bowden S, Furman T, Alhumimidi M, Hames W, Assiri A, Alyousif M, Almutairi R, Alqahtani H, Rogaib AB, Rushood AB, AlYousef K & Alkhammali S, 2025. Petrogenesis and evolution of Miocene-Quaternary continental basalts at Harrat Ash Shaam (Al Harrah), NW Saudi Arabia. Lithos, 504-505, https://doi.org/10.1016/j.lithos.2025.108031.

Babazadeh S, An Y, Santosh M, Furman T, Raeisi D, Gholipour B & D'Antonio M, 2025. Fe isotope systematics and their role in constraining front- and rear-arc processes in Iran Cenozoic magmatism: Beyond compositional and radiogenic isotopes evidence. Chemical Geology, 692, 122961 https://doi.org/10.1016/j.chemgeo.2025.122961.

Mashak SD, Torkian A & Furman T, 2024. Mineral chemistry and P-T estimation of coexisting minerals in the andesitic rocks from the N-Saqqez, NW Iran. Iranian Journal of Crystallography and Mineralogy, 32, 339-358. https://ijcm.ir/article-1-1915-en.html.

Babazadeh S, Furman T, Santosh M, Raeisi D, Choi SH & D'Antonio M. 2024. Middle to Late Miocene K-rich magmatism in Central Iran: Geochemical characterization of the post-collision mantle beneath the Urumieh–Dokhtar magmatic arc. Chemical Geology, 122308.

Babazadeh S, Raeisi D, Santosh M, Furman T, Choi SH & D'Antonio M. 2024. The spatial–temporal evolution of Neotethyan subduction in central to Southeast Iran: Constraints from geochemistry, zircon U–Pb–Hf, and Sr–Nd–Pb isotopes. Chemical Geology, 122247.

Delavari M, Amani K, Amini S, Azizi H, Asahara Y, Furman T, Shabani AAT, Asiabanha A & Mohammadi A. 2024. Geochemistry, Sr-Nd isotopes and zircon U-Pb dating of magmatic rocks from the Talesh range, western Alborz: new insights into the Late-Cretaceous evolution of southern margin of Eurasia. Geochemistry, 84, 126042.

Aktağ A, Sayit K, Furman T & Peters BJ, 2024. Delamination magmatism in Eastern Anatolia: A geochemical perspective. Geochemistry, Geophysics, Geosystems, 25, e2024GC011444.

Babazadeh S, Ghalamghash J, Raeisi D, Santosh M, Furman T, Choi SH, D'Antonio M, Heilimo E & Cottle JM. 2024. Arc magmatism associated with continental convergence in the SE segment of the UDMA, Iran: Insights from zircon geochronology and Hf–Sr–Nd–Fe isotopes. Lithos, 466, 107468.

Babazadeh S, D'Antonio M, Raeisi D, Furman T, Santosh M, Di Renzo V, Klötzli U, Choi SH, Ghalamghash J, Cottle JM & Palin RM. 2024. Geochemical and Sr–Nd–Hf isotopic evidence for Cenozoic partial melting of mantle beneath Natanz, Central Iran. Lithos, 468, 107489.

D'Antonio M, Raeisi D, Furman T, Santosh M, Di Renzo V, Klötzli U, Ghalamghash J, Cottle J & Palin R. 2024. Geochemical and Sr-Nd-Hf isotope evidence for Cenozoic melting of metasomatized

lithospheric mantle beneath Natanz, Central Iran. Lithos, 468–469, doi 10.1016/ j.lithos.2024.107489.
Torkian A, Furman T, Fazel ET & Ajalli N. 2024. Eocene calc-alkaline volcanic rocks related to Cenozoic episodic magmatism during Neo-Tethyan subduction, Tarom–Hashtjin Belt, NW Iran. Mineralogy and Petrology, doi 10.1007/s00710-024-00865-2.
Amani K, Delavari M, Amini S, Azizi H, Asahara Y, Furman T, Shabani AAT, Asiabanha A & Mohammadi A. 2023. Geochemistry, Sr-Nd isotopes and zircon U-Pb dating of magmatic rocks from the Talesh range, western Alborz: new insights into Late-Cretaceous evolution of the southern Eurasian margin. Geochemistry. https://doi.org/10.1016/j.chemer.2023.126042
Bowden S, Furman T, Alhumimidi M, Hames W, Assiri A, Alyousif M, Almutairi R, Alqahtani H, Rogaib AB, Rushood AB & AlYousef K, 2023. Geodynamic Controls on Basaltic Volcanism in the Arabian Peninsula: Evolution of Harrat Uwayrid, Saudi Arabia. Geochemistry, Geophysics, Geosystems, 24, https://doi.org/10.1029/2022GC010780
Pitcavage E, Furman T, Nelson WR, Graham DW, Shirey S, Kalegga PK, Barifaijo E. 2023, Isotopic constraints on lithospheric magmatism in the Bufumbira Volcanic Field, Uganda. Geochemistry, Geophysics, Geosystems, 24, e2023GC010950. https://doi.org/10.1029/2023GC010950.
Brune S, Kolawole F, Olive J-A, Stamps DS, Buck WR, Buiter SJH, Furman T & Shillington DJ, 2023, Geodynamics of continental rift initiation and evolution, Nature Reviews Earth & Environment, 4, 235-253.
Salehi N, Torkian A, Furman T & le Roux P, 2023. Petrogenesis and Geochemical Characteristics of Plio-Quaternary alkali basalts from the Qorveh-Bijar volcanic belt, north-western Iran, Kurdistan. Geological Magazine, 1-17.
Aktag A, Sayit K, Peters BJ, Furman T, Rickli J, 2022. Interaction of C-like asthenospheric melts and sub-continental mantle lithosphere beneath eastern Turkey, Lithos, 430, 106849.
Gall H, Cipar J, Kürkçüoğlu B, Krispin C & Furman T, 2022. Recycling and recharge processes at the Hasandag Stratovolcano, Central Anatolia: insights on intermediate magma petrogenesis via plagioclase textures and zoning patterns. Contributions to Mineralogy and Petrology, 177, 84; https://doi.org/10.1007/s00410-022-01949-y.
Bowden S, Gani ND, Furman T, Gani MR, VanSoest M, Abebe T, Alemu T, O'Sullivan P, Tadesse K & Abebe B, 2022. Feedback between topography and lithosphere-asthenosphere dynamics beneath the Yerer-Tulu Wellel volcano-tectonic lineament: Insights from apatite thermochronology and basalt geochemistry. Geological Journal, 1-18, https://doi.org/10.1002/gj.4488.
Pitcavage E, Furman T, Nelson W, Kalegga PK & Barifaijo E, 2021. Petrogenesis of primitive lavas from the Toro Ankole and Virunga Volcanic Provinces: Metasomatic mineralogy beneath East Africa's Western Rift. Lithos, 396-397, https://doi.org/10.1016/j.lithos.2021.106192.
Babazadeh S, Ghalamghash J, Furman T, D'Antonio M & Raeisi D. 2021. The Oligocene Avaj volcanic-plutonic complex of Central Iran: a record of magma evolution and mineral equilibria. Journal of Asian Earth Sciences, 222, 104962.
Babazadeh S, Ghalamghash J, D'Antonio M, Furman T. 2021. Hydrothermal alteration in Eshtehard volcanoes, Iran: Constraints from trace elements redistribution and stable isotope geochemistry. Journal of Geochemical Exploration, 222, 106719.
Gall H, Hanan B, Kürkçüoğlu B, Sayit K, Yurur T, Pickard M, Sen E, Alici Sen P & Furman T, 2021. Post-delamination magmatism in south-central Anatolia. Lithos, https://doi.org/10.1016/j.lithos. 2021.106299.
Furman T, Hanan BB, Pickard M, Kürkçüoğlu B, Sayit K, Sen E, Alici Sen P & Yurur T, 2021. Evolution of mafic lavas from Central Anatolia: Mantle source domains. Geosphere, 17, https://doi.org/ 10.1130/GES02329.1.
Salehi N, Torkian A & Furman T, 2019. Olivine-hosted melt inclusions in Pliocene-Quaternary lavas from the Qorveh-Bijar volcanic belt, western Iran: implications for source lithology and cooling history. International Geology Review, DOI: 10.1080/00206814.2018.1564890.
Babazadeh S, Furman T, Cottle J, Raeisi D & Lima I. 2019. Magma chamber evolution of the Ardestan pluton, Central Iran: evidence from mineral chemistry, zircon composition and crystal size distribution. Mineralogical Magazine, 83, 763-780.

Nelson W, Hanan B, Graham DW, Shirey SB, Yirgu G, Ayalew D & Furman T. 2019. Distinguishing plume and metasomatized lithospheric mantle contributions to post-flood basalt volcanism on the southeastern Ethiopian Plateau. Journal of Petrology, doi: 10.1093/petrology/egz024.

Torkian A, Furman T, Salehi N & Veloski K, 2019. Petrogenesis of adakites from the Sheyda volcano, NW Iran. Journal of African Earth Sciences, 150, 194-204.

Furman T, Nelson W & Elkins-Tanton L 2016, Evolution of the East African Rift: drip magmatism, lithospheric thinning and mafic volcanism. Geochimica et Cosmochimica Acta 185, 418-434.

Witter M, Furman T, Feineman M, LaFemina P & Geirsson H 2016, Understanding magmatic processes at Telica volcano, Nicaragua: Crystal size distribution and textural analysis. American Mineralogist 101, 1052-1060.

Kürkçüoğlu B, Pickard M, Sen P, Hanan BB, Sayit K, Plummer C, Sen S, Yurur T & Furman T 2015, Geochemistry of mafic lavas from Sivas, Turkey and the evolution of Anatolian lithosphere. Lithos 232, 229-241.

Aldanmaz E, Pickard M, Meisel T, Altunkaynak S, Sayit K, Sen P, Hanan BB & Furman T 2015, Source components and magmatic processes in the genesis of Miocene to Quaternary lavas in western Turkey: constraints from HSE distribution and Hf-Pb-Os isotopes. Contributions to Mineralogy and Petrology 170, 1-20.

Torkian A & Furman T 2015, The significance of mafic microgranular enclaves in petrogenesis of the Granitoid Complex, the north of Sanandaj-Sirjan Zone, Iran. Journal of Mineralogy and Geochemistry (Neues Jahrbuch für Mineralogie, Abhandlungen), 192/2, 117-133.

Mana S, Carr MJ, Furman T, Turrin BD, Feigenson MD & Swisher CC 2014, Magmatic activity across the East African North Tanzanian Divergence Zone. Journal of the Geological Society, 2014-072.

Rooney TO, Nelson W, Dosso L, Furman T & Hanan B 2014, The role of continental lithosphere metasomes in the production of HIMU-like magmatism on the northeast African and Arabian plates. Geology, 42, 419-422.

Innocenti S, del Marmol MA, Voight B, Andreastuti S & Furman T 2013, Textural and mineral chemistry constraints on evolution of Merapi Volcano, Indonesia. Journal of Volcanology and Geothermal Research, 261, 20-37.

Innocenti S, Andreastuti S, Furman T, Voight B & del Marmol MA 2013, The pre-eruption conditions for effusive and explosive eruptions at Merapi volcano as revealed by crystal texture and mineralogy. Journal of Volcanology and Geothermal Research, 261, 69-86.

Mana S, Furman T, Carr MJ, Mollel GF, Mortlock RA, Feigenson MD, Turrin B & Swisher III CC 2012, Geochronology and geochemistry of the Essimingor volcano: melting of metasomatized lithospheric mantle beneath the North Tanzanian Divergence Zone (East African Rift), Lithos, htto://dx.doi.org/10.1016/j.lithos.2012.09.009.

Nelson WR, Furman T, van Keken PE, Shirey SB & Hanan B 2012, Os-Hf isotopic insight into mantle plume dynamics beneath the East African Rift System. Chemical Geology, 320-321, 66-79.

Rooney TO, Hanan BB, Graham DW, Furman T, Blichert-Toft J & Schilling J-G 2012. Upper mantle pollution during Afar plume – continental rift interaction. Journal of Petrology, 53, 365-389. doi: 10.1093/petrology/egr065.

Endress C, Furman T, Abu El-Rus MA & Hanan BB 2011, Geochemistry of 24 Ma basalts from NE Egypt: source components and fractionation history. Geological Society, London, Special Publications January 1, 2011, 357, 265-283, doi: 10.1144/SP357.14.

Graham D, Furman T, Blichert-Toft J, Lupton J, Ebinger C & Rogers N 2011, Isotopic variations in mafic volcanic rocks from the western branch of the East African Rift. Mineralogical Magazine, 75, 941.

Nelson W, Shirey SB & Furman T 2011, An isotopic glimpse of the lithospheric mantle beneath the East African Rift System. Mineralogical Magazine, 75, 1531.

Sayit K, Goncuoglu MC & Furman T 2010, Petrological reconstruction of Triassic seamounts / oceanic islands with the Palaeotethys: geochemical implications from the Karakaya subduction / accretion complex, northern Turkey. Lithos, 119, 501-511.

Kurkcuoglu B, Furman T & Hanan B 2008, Geochemistry of post-collisional mafic lavas from the North Anatolian Fault Zone, Northwestern Turkey, Lithos, 101, 416-434.

Reinhardt KS & Furman T 2008, Effects of catastrophic flooding on stream biogeochemistry in a headwater stream, Hydrological Processes, 22, 3759–3771.

Furman T 2007. Geochemistry of East African Rift basalts: an overview. Journal of African Earth Sciences, doi:10.1016/j.jafrearsci.2006.06.009.

Rooney T, Furman T, Bastow I, Ayalew D & Yirgu G 2007, Lithospheric modification during crustal extension in the Main Ethiopian Rift, Journal of Geophysical Research, 112, B10201, doi:10.1029/2006JB004916.

Furman T, Bryce J, Rooney T, Hanan B, Yirgu G & Ayalew D 2006 Heads and tails: 30 million years of the Afar plume. Journal of the Geological Society, London, 259, 97-121.

Furman T, Knight KM & Bryce JG 2006, Tertiary mafic lavas of Turkana, N. Kenya: constraints on temporal evolution of the EARS and on the occurrence of HIMU volcanism in Africa, Journal of Petrology, doi:10.1093/petrology/egl009.

Rooney T, Furman T, Yirgu G & Ayalew D 2005, Structure of the Ethiopian lithosphere: evidence from mantle xenoliths. Geochimica et Cosmochimica Acta, 69, 3889-3910.

Furman T, Rooney T, Bryce J, Yirgu G, Ayalew D & Hanan B 2004, Continental rupture in the Main Ethiopian Rift: constraints from magma source compositions. Proceedings volume, International Conference on the East African Rift System: Development, Evolution and Resources.

Furman T, J Bryce, J Karson & A Iotti 2004, Geochemistry of Quaternary mafic lavas from Turkana, Kenya: evidence for a common asthenospheric source beneath the East African Rift System. Journal of Petrology, 45, 1069-1088.

Keranen K, Klemperer SL, Gloaugen R, Asfaw L, Ayele A, Ebinger C, Furman T, Harder S, Keller GR, Mackenzie GD, Maquire PKH & Stuart GW 2004. Three-dimensional seismic imaging of a protoridge axis in the main Ethiopian Rift. Geology, 11, 949-952.

Ebinger CJ & Furman T 2003, Geodynamical setting of the Virunga volcanic province, East Africa, Acta Vulcanologica, 15, 9-16.

Furman T & Gittings H 2003, Eocene basalt volcanism in central Virginia: implications for Cenozoic tectonism, Southeastern Geology, 42, 111-122.

Maguire PH, Ebinger CJ, Stuart GW, Mackenzie GD, Whaler KA, Kendall J-M, Khan MA, Fowler CMR, Klemperer SL, Keller GR, Harder S, Furman T, Mickus K, Asfaw L, Ayele A & Abebe B 2003, Geophysical project in Ethiopia studies continental breakup. EOS 84, 337-343.

Bartels KS & T Furman 2002, Effect of sonic and ultrasonic frequencies on crystallization of basalt. American Mineralogist, 87, 217-226.

Fitzhugh RD, T Furman & AK Korsak 2001, Sources of stream sulfate in headwater catchments in Otter Creek Wilderness, West Virginia, USA. Hydrological Processes, 15, 541-556.

Furman T & D Graham 1999, Erosion of lithospheric mantle beneath the East African Rift system: evidence from the Kivu volcanic province. Lithos, 48, 237-262.

Fitzhugh RD, T Furman & BJ Cosby 1999, Longitudinal and seasonal patterns of stream acidity in a headwater catchment on the Appalachian Plateau, West Virginia. Biogeochemistry, 47, 39-62.

Furman T, P Thompson & B Hatchl 1998, Primary mineral weathering in the central Appalachians: a mass balance approach. Geochimica et Cosmochimica Acta, 62, 2889-2904.

Furman T 1995, Melting of metasomatized subcontinental lithosphere: undersaturated mafic lavas from Rungwe, Tanzania. Contributions to Mineralogy and Petrology, 122, 97-115.

Furman T, FA Frey & K-H Park 1995, The scale of source heterogeneity beneath Iceland's eastern neovolcanic zone. Journal of the Geological Society of London, 152, 997-1002.

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Data publications

Furman T & Oborn C, 2025. Whole rock major element chemistry of Tungnáhraun lavas, Version 1.0. Interdisciplinary Earth Data Alliance (IEDA). https://doi.org/10.26022/IEDA/112835. Accessed 2023-03-15.

Furman T & Oborn C, 2025. EPMA analyses of Pl+Ol+Cpx from Tungnáhraun basalt lavas, SE Iceland, Version 1.0. Interdisciplinary Earth Data Alliance (IEDA). https://doi.org/ 10.26022/IEDA/112836. Accessed 2023-03-15.

Pitcavage E, Furman T, Nelson W, Graham D & Shirey S. 2023. Geochemical and isotopic analyses of mafic lavas, Bufumbira (Virunga volcanic province, Uganda), version 1.0 [Dataset]. Interdisciplinary Earth Data Alliance (IEDA). https://doi.org/ 10.26022/IEDA/112774

Publications on the Scholarship of Learning (student authors underlined, K-12 teachers in italics)

Publications

Wysession ME, Furman T, Holzer M, Houghton J, Manduca CA, Pfirman S, Ricchezza VJ & Tong V, 2022. The American Geophysical Union Steps it up on Climate Science Education. Connected Science Learning, 4. https://www.nsta.org/connected-science-learning/connected-science-learning-may-june-2022/american-geophysical-union

Fortner SK, Manduca CA, Ali HN, Saup CM, et al., 2022 (Furman is one of two lead authors for Geoscience Education Practice Writing Team). Geoscience Education Perspectives on Integrated, Coordinated, Open, Networked (ICON) Science. Earth and Space Science, https://doi.org/10.1029/2022EA002298.

Furman T and Moldwin M, 2021. Higher education during the pandemic: truths and takeaways, EOS, 102, https://doi.org/10.1029/2021EO160171.

Ortiz-Suslow DG, Furman T, Clement A, Potter H and Sun-Suslow N, 2020. Perspectives on parenting while researching (during a pandemic), EOS, 101, https://doi.org/10.1019/2020EO149235.

Plummer JD, Palma C, Rubin K, Flarend A, Ong YS, Ghent C, Gleason T, McDonald S, Botzer B and Furman T, 2020. Evaluating a learning progression for the solar system: Progress along gravity and dynamical properties dimensions. Science Education. https://doi.org/10.1002/sce.21567

McDonald S, Bateman K, Gall H, Tanis-Ozcelik A, Webb A & Furman T, 2019. Mapping the increasing sophistication of students' understandings of plate tectonics: A learning progressions approach. Journal of Geoscience Education. DOI: 10.1080/10899995.2018. 1550972.

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Bateman K, McDonald S, Gall H, Tanis-Ozcelik A, Webb A & Furman T. (2018). Getting beneath the surface. Science Scope 42, 45-54.

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Plummer JD, Palma C, Flarend A, Rubin K, Ong YS, Botzer B, McDonald S & Furman T, 2015. Development of a learning progression for the formation of the Solar System. International Journal of Science Education, 37, 1381–1401. http://doi.org/10.1080/09500693.2015.1036386

Furman T 2013. Assessment of General Education. Journal of General Education, 62, 129-136.

Furman T 2013. An integrated model for instruction in deep time, mass extinctions and radiometric decay. The Earth Scientist, 29, 37-40.

Guertin L & Furman T 2013. Mentoring middle school and high school Earth science teachers to publish. In the Trenches, 3, 4-5.

Bembenic M, Guertin L & Furman T 2012. Adaptable inquiry-based activities about national patterns of coal and energy use. Science Scope, 35, 49-55.

Shafer B, Cratsley CE & Furman T 2011. Eliminating students' misconceptions of radioactive decay and radiometric dating through hands-on activities. The Earth Scientist, 27, 18-21.

Cole H, Furman T, Guertin L & Cratsley CE 2011. Engaging students in learning ecosystem-based biogeochemical cycles. The Earth Scientist, 27, 13-16.

Cratsley CE, Guertin L & Furman T 2011. Promoting geographic literacy of African environments through map exercises. The Earth Scientist, 27, 27-32.

Furman T, Guertin L & Pickard M 2011. Now what? Experienced teachers reflect on their unplanned transitions to teach earth science. The Earth Scientist, 27, 9-12.

Baber LD, Pifer MJ, Colbeck C & Furman T 2010. Increasing diversity in the geosciences; recruitment programs and student self-efficacy. Journal of Geoscience Education, 58, 32-41.

Dorsch A, Forman T & Guertin L 2009. Five activities for differentiated instruction on human-induced climate change. The Earth Scientist, 25, 7-9.

Drozynski D, Ellis J, Furman T & Guertin L 2009. Students' inquiry in and about the Earth Science classroom, The Earth Scientist, 25, 10-13.

Ellis J, Furman T, *McAninch S & Stout H* 2009. Improving comprehension of geomorphic concepts through inquiry-based learning. The Earth Scientist, 25, 14-18.

Charles L, Klein C, Narkiewicz M, Furman T & Guertin L 2009. Improving Earth Science instruction with an integrated Earth systems matrix, The Earth Scientist, 25, 19-22.

Hartwell B, *Schoch K*, Furman T & Guertin L 2009. Understanding the rock cycle through a "Choose Your Own Adventure©" classroom activity. The Earth Scientist, 25, 23-26.

Nelson W, Furman T & Guertin L 2009. The rewards and challenges of integrating graduate student teaching fellows into the middle and high school classroom. The Earth Scientist, 25, 27-30.

Hoffman J, Vishio N, Furman T & Guertin L 2009. Designing sustainable communities: an inquiry-based approach to teaching Earth Systems science. The Earth Scientist, 25, 35-39.

Williams Q, Morris VR & Furman T 2007, A real-world plan to increase diversity in the geosciences, Physics Today, 60, 54-55.

Furman T 2006, The right advice, Nature, 442, doi:10.1038/nj7098-106b.

Furman T et al. 2006, Mentoring for science, technology, engineering and workforce development and lifelong productivity: success across the K through grey continuum. White Paper produced at the request of the National Science Foundation and the Office of Science and Technology Policy.

Furman T 2003, Earth Inquiry: Monitoring and mitigating volcanic hazards. WH Freeman publisher (peer-reviewed educational activity for Physical Geology; available nationally).

Furman T & E Merritt 2000, A data-intensive approach to studying climate and climate change in Africa. Journal of Geoscience Education, 48, 464-468.

Funding History for Scientific and Educational Research

PI or co-PI on grants totaling over $21.5 million (PI grant total over $12.6 million)

NSF Petrology and Geochemistry (Furman PI) Genesis of Harrat Basalts in Western Saudi Arabia. EAR 2218248; 8/1/22-7/31/24; total budget $332,625

NSF Petrology and Geochemistry (Furman PI) Collaborative Research: Geochemical and geodynamic investigation of lithospheric drip viability beneath the East African Rift. EAR 1753696; 7/1/18 – 6/30/21; total budget $457,570 with $232,885 to Furman

NSF Targeted Math Science Partnership (Furman PI) Middle Grades Earth and Space Science Education DUE 0962782; 8/15/2010 – 8/31/2017; total budget $9,205,578

NSF International Programs (Furman PI) OISE 0827211; 6/24/2008 – 2/21/2008; total budget $10,000. Funding to teach undergraduate field course in Ngorongoro Volcanic Highlands, Tanzania

NSF Instrumentation and Facilities (Furman co-PI) EAR 0744425; 9/1/2008 – 8/31/2009; total budget $66,254. Acquisition of a Quadrupole Inductively-Coupled Plasma Mass Spectrometer (ICP-MS) for Earth and Related Sciences

NSF Petrology and Geochemistry; Collaborative Research (Furman PI) EAR 0738963; 6/27/2008 – 6/26/2010; total budget $86,834 to Penn State. Geochemical Consequences of Slab Breakoff and Lithospheric Delamination: Examples from Turkish Neo-Volcanic Zones (Collaboration with San Diego State University)

NSF Collaborative Studies of the Earth's Deep Interior (Furman PI) EAR 0551954; 6/1/2006 – 5/31/2008; ~700K total, $186,773 to Furman. Geochemical Structure and Dynamics of the Mantle Below the East African Rift System. Collaboration among Penn State, University of New Hampshire, San Diego State University, University of Michigan and Oregon State University

NSF Earth Sciences GEO-Teach (Furman Penn State PI) Transforming Earth System Science Education EAR 0631377; 1/1/2007 – 4/30/2013; ~$3 million total, $681,557 to Furman. Partnership among University of New Hampshire, Penn State, Dillard and Elizabeth City State

NSF International Programs (Furman co-PI) PIRE: AfricaArray: Imaging the African Superplume, building African partnerships, and enhancing diversity in the geosciences

OISE 0530062; 9/15/2005 – 8/14/2012; total budget $2,915,667 Furman unpaid consultant

NSF Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring DUE 0528089; 12/1/2005 – 11/30/2006; $10,000 to Furman

NSF Opportunities to Enhance Diversity in the Geosciences (Furman PI) Track II program: Building and maintaining a pipeline to increase diversity. GEO 0503521; 7/15/2005 – 6/30/2012; total budget $1.5 million; $900,872 to Furman. Partnership between Penn State and Jackson State University

NSF Opportunities to Enhance Diversity in the Geosciences (Furman PI). Track I program: Building a pipeline for diversity. GEO 0351740; 8/15/2003 – 7/30/2005; total budget $41,840

NSF Petrology and Geochemistry (Furman PI) Geochemical and Textural Constraints on Eruptive Behavior of Merapi Volcano, Indonesia. EAR 0230328; 1/1/2003 – 12/31/2005; total budget $170,512

NSF Continental Dynamics Collaborative Research: US-EAGLE (Ethiopia-Afar Grand Lithospheric Experiment): Modification of lithospheric structure during continental break-up. EAR 0207764; 9/1/2002 – 8/31/2006; total budget $2.5 million; $202,632 to Furman

George H. Deike Award, College of Earth & Mineral Sciences, Penn State University (Furman, PI) Structure of the Afar mantle plume and the inception of oceanic rifting. 6/1/02 – 5/31/04; total budget $45,000

US Biological Service (USGS) (Furman PI) Effects of flooding on Staunton River. 9/1/98 – 7/31/00; total budget $300,000

American Chemical Society (Furman PI) Sulfur isotopic evidence for biological fixation in natural wetlands. Petroleum Research Fund; 1/1/96 – 12/31/97; budget $50,000

NSF CAREER Award, Petrology and Geochemistry (Furman PI) Magmatism in the African Western Rift: Lithospheric structure and melting dynamics. EAR 6/1/95 – 5/31/99; total budget $91,000

NSF Petrology and Geochemistry (Furman PI) Interaction between asthenospheric and lithospheric melts: alkalic volcanism in the Rungwe province, African Western Rift. EAR 6/1/94 – 5/31/96; total budget $82,375 with REU supplement awarded summer 1995

NSF Petrology and Geochemistry (Furman PI) Continental rift propagation: volcanics of the Albertine Rift, Africa. EAR 5/1/90 – 4/31/91; total budget $11,340

Professional Memberships

American Geophysical Union
Geological Society of America
Geochemical Society
Association of Women Geoscientists
American Mineralogical Society
National Association of Geoscience Teachers
Pennsylvania Earth Science Teachers Association

Selected Service to the University

Department of Geosciences

Member, Undergraduate and Graduate Program Committees (various years)
Faculty Advisor, Women for the Waves (undergraduate student club)

Assistant Vice President and Associate Dean for Undergraduate Education

- Provide vision and leadership in university-wide efforts to develop and assess learning objectives in baccalaureate programs, general education and the co-curriculum
- University representative to AAU STEM Initiative
- Project lead for implementing diagnostic adaptive mathematics placement test for university
- Direct Bachelor of Philosophy degree program (shared with J. Edmondson)
- Leadership and oversight of Penn State Learning, providing learning assistance across the university community (shared with J. Edmondson)
- University representative to Committee on Institutional Cooperation (CIC) on Assessment
- University representative to Mayor Nutter's Philadelphia College Completion Task Force
- Advisory Board, Journal of General Education

Selected Relevant Committee Membership

- Education Abroad Advisory Council (2020-present)
- Fixed Term Faculty Promotion Committee (2019-2022)
- General Education Task Force and Assessment Sub-Committee (2013 – 2015)
- Prior Learning Assessment Task Force (2013)
- Self-Study for Middle States Commission on Higher Education (2013)
- Graduate Program Committee, Department of Geosciences (2012 – present)
- Developmental Courses Working Group (2012)
- Chair, Faculty Scholar Medal committee (Physical Sciences) (2011, 2012)
- Faculty Senate Undergraduate Education subcommittee (2011 – 2013)
- NSSE Steering Committee (2007 – 2013)
- SARA Advisory Board (Student Affairs Research and Assessment) (2007 – 2013)
- Acting Director, AESEDA (2005 – 2006)
- Organized and administered college-wide research opportunity for Upward Bound Math Science students (SEEMS) (2005 – 2008)
- Associate Head for Undergraduate Programs, Department of Geosciences (1999 – 2004)

Service to the Scientific and Educational Community

President, Education Section of AGU (2021-2022)

- Provide leadership to Executive Committee
- Oversee Section affairs including fall meeting, fundraising, scholarships, communications
- Supervise newsletter intern
- Convene session annually for poetry and dance in AGU fields
- Spearhead Honor an Educator campaign to support K-12 teachers
- Member of AGU Council
- Develop position statements for AGU around education, climate change, evolution

Director, Earth and Space Science Partnership (2010-2017)

- Partnerships with seven underserved public school districts in Pennsylvania
- Revision of all K-12 state standards for Earth and Space science content
- Graduate-level courses for middle- and high-school teachers (topics: Water, Climate, Energy, Astronomy and Plate Tectonics)
- Inquiry-based science courses for college students intending to pursue teaching careers

- Revised curricula for general education courses (Geosc 040, Astro 001, Earth 297)
- Research on student learning in earth and space science concepts, which has profound implications for college-level teaching
- Training (in pedagogy and in working in multi-cultural settings) and financial support for grad students leading research activities for Upward Bound Math Science
- Year-round professional development for teachers
- Development of PAESTA, the Pennsylvania chapter of the Earth Science Teachers Association which includes an advocacy site to maintain the teaching and improve the status of earth science in PA schools (250 members, annual national conference, sponsor peer-reviewed journal issues)
- Workshops on effective science teacher professional development for the Penn State community

Scientific proposal and program reviewer:

- National Science Foundation (Tectonics, Petrology/Geochemistry, NSF GEO-NERC, CAREER, Polar Programs, Marine Geology & Geophysics, Undergraduate Education)
- Leakey Foundation
- Ministry of Education and/or Science (Italy, Greece, Portugal, Turkey, Germany)
- National Science Foundation Panelist: Polar Programs, PAESMEM
- National Science Foundation Committee of Visitors: ADVANCE, CAREER, EPSCOR
- Manuscript reviewer (journals listed below)

Bulletin of Volcanology
Canadian Journal of Earth Sciences
Chemical Geology
Contributions to Mineralogy and Petrology
Earth and Planetary Science Letters
Geochemistry, Geophysics, Geosystems
Italian Journal of Geoscience
Journal of African Earth Sciences
Journal of Asian Earth Sciences
Journal of General Education
Journal of Geosciences Education
Journal of the Geological Society of London
Journal of Petrology
Journal of Volcanology & Geothermal Research
Lithos
Nature Geosciences
Nature Communications
South African Journal of Geology

National and state academic standards review and authorship:

- K-12 Earth and Space Science academic standards for Pennsylvania (author, 2013-)
- K-12 Core Curriculum in Mathematics for the Pennsylvania Department of Education (2012)
- K-12 science standards proposed by the National Research Council (Critical Stakeholder, 2012-)

National Committee Service:

Geological Society of America (2012, 2013) Mineralogy, Geochemistry, Petrology, Volcanology Awards
Project Kaleidoscope Faculty for the 21st Century

Selected Invited Seminars, Presentations and Public Conversations

Geochemical evolution of Turkana Basin volcanism (Turkana Basin Institute; presented to international audience from Europe, Africa and North America; 2022).

Volcanic and tectonic evolution of Anatolia. Virginia Tech (2020)

Centennial Panelist: Perspectives on parenthood within the academic research environment. EOS Trans AGU (2019)

Growing a culture of support for STEM learning (with Angela Miller and Willie D West). Council for Opportunity in Education national conference, Atlanta GA (2015)

Teaching and learning: plate tectonics. Towson University (2015)

Teaching and learning: plate tectonics. Pennsylvania State University (2015)

Petrogenesis of Sivas mafic lavas: implications for crustal assembly. University of Iowa (2012)

Petrogenesis of Sivas mafic lavas: implications for crustal assembly. Hacettepe University, Ankara Turkey (2012)

Volcanoes of the African Rift: making new oceans by recycling old ones. Spokane Community College outreach series (2007).

Plumes beneath East Africa: constraints from geochemistry. University of Idaho (2007).

Geochemical signals of progressive continental rupture in the East African Rift. Rutgers University (2003).

Geochemical evidence for a single plume source beneath the East African Rift. Duke University (2003).

Volcanism in the African Rift. Presentation to parents and families of Schreyer Honors College students (2003).

Geochemistry Matters: An introduction to the East African Rift for geophysicists. Presented at EAGLE Workshop, Stanford University (2003)

Rifting in East Africa – is there a mantle plume? PSU Geosciences departmental colloquium (2001).

Partnering for success: supporting diversity in the Geosciences. Symposium on Diversity and Innovation in the Geosciences, Keynote (Texas state-wide conference, 2010)

Enhancing scientific literacy in the K-20 classroom. Pennsylvania Western Regional STEM conference (2010)

Building meaningful partnerships to enhance Earth System Science literacy. National Earth Science Teachers Association, national meeting, Keynote (2010)

Space for women in science. State University of New York, Buffalo (2008)

How can information technology enhance undergraduate SME&T? Contribution to CAR-2001 Technology Roundtable, Dallas, Texas (March 2-4, 2001), sponsored by Project Kaleidoscope

British Broadcast Corporation (BBC) – Radio Frontiers: Future Oceans (broadcast focused on current research in the African Rift, April 21, 2004).

Abstracts of Presentations on Scientific Research: (abstracts from 2015 listed here)

Furman T, Kincaid D & Oborn Brady C, 2025. Transcrustal magma storage and evolution during Holocene deglaciation: the Tungnarhraun mafic lavas, SE Iceland. AGU abstract.

Furman T, Tesfay K, Petrucela M, Peppe D, Tadesse AZ, Emishaw L, 2025. Adigrat basalts, northern Ethiopia: geochemical constraints on the final stage of flood basalt activity. AGU abstract.

Torkian A & Furman T, 2024. Petrological characteristics of bimodal intrusive complexes northeast of Songhar (Kermanshah province, Iran): mineral and whole rock geochemistry. AGU abstract.

Dia I, Turman T, Sayit K, Bowden S, Gueye M, Faye CI, Vanderhaeghe O & Baratoux L, 2024. Tectonic setting and geodynamic evolution of the West African Craton from local (Mako Belt, Senegal) to regional scales using mafic and ultramafic rocks of Paleoproterozoic Birimian terranes. AGU abstract

Kurkcuoglu B, Yurur T, Gunes B, Furman T & Hanan B, 2023, The evidences of deep melting from the xenolith bearing mafic rocks in Southern Thrace region: the significance of the peridotite and the pyroxenite source melting. European Geophysical Union General Assembly EUG23-15786, https://doi.org/10.5194/egusphere-egu23-15786.

Mashak S, Scott J, Yin A, Bowden S, Torkian A & Furman T, 2023. Lavas of the northern Sanandaj-Sirjan Zone, Iran: fractionation of multiple parental melts. Geological Society of America annual meeting, Abstract 186-26

Benson L, Kincaid D, Bowden S, Oborn C & Furman T, 2023. Isotopic differences between plagioclase and matrix in the Tungnárhraun, South Iceland. Geological Society of America annual meeting, Abstract 186-25

Dia I, Nelson W, Bowden S, Furman T, Urist A. 2022. Mafic and ultramafic rocks of the Birimian greenstone belts, West African Craton: Tectonic setting and geodynamic evolution, AGU abstract V12C-0063.

Stolinas E, Bowden S, Furman T. 2022. Fluid transport in Earth's mantle: insights from Harrat Uwayrid, Saudi Arabia. AGU abstract V11C-06.

Santamaria A, Snider J, Bowden S, Furman T. 2022. Hidden Landscapes: Geosciences education through visual art exhibition. AGU abstract ED35D-0588.

Nelson W, Furman T, Stolinas E, Murtaugh M, Bowden S, Dawson M, Spencer S. 2022. Incipient continental rifting: evidence from mantle xenoliths from northern Uganda. AGU abstract T45A-27.

Bowden S, Furman T & Graham DW, 2021. Evolution of pulsed magmatism in the Northwest Arabian Peninsula: detachment and melting of lithospheric drips revealed by bulk rock elemental, isotopic, and He-in olivine and pyroxene data from Harrats Ash Shaam and Uwayrid. EOS.

Seyglinski T, Nelson WR, Rooney TO, Steiner RAA, Brandon AD, Furman T, Hanan BB, Kappelman JW & Marita N, 2021. Petrogenesis of Eocene flood basalts in the Turkana region of the East African Rift System: Re-Os constraints. EOS

Stolinas E, Murtaugh M, Nelson WR, Pitcavage E, Kalegga PK, & Furman T, 2021. Mineralogical characterization of lithospheric mantle xenoliths from Katwe-Kikorongo, Uganda. EOS

Babazadeh S, Furman T, D'Antonio M & Ghalamghash J. 2020. Trace and rare-earth element redistribution and O-H isotope geochemistry in the hydrothermal alteration facies from the central Urumieh-Dokhtar Magmatic Arc, Iran. Geological Society of America meeting abstract.

Babazadeh S, Furman T, Cottle JM, Raeisi D & Lima A. 2020. Magma storage beneath Ardestan pluton, Iran: Insights from silicate minerals, zircon signatures and crystal size distribution. Goldschmidt conference abstract https://doi.org/10.46427/gold2020.101

Bowden S, Furman T, Alhumimidi M, Assiri AM, Smye A & Crispin K. 2020. Petrogenesis of mafic lavas from Harrat Uwayrid, Saudi Arabia: geochemical characteristics and tectonic implications of lower lithospheric melting. EOS Trans AGU (V038-0005)

Johnson-Gutierrez, S, Furman T, Nelson W, Pitcavage E & Kallegga P. 2020. Analysis of the geochemical spatial variation in the volcanic rocks of the Toro-Ankole Volcanic Province. SACNAS abstract.

Nelson WR, Dawson M, Piccoli PM, Pitcavage E & Furman T. 2020. Exploring the origin of pyroxenites using spinel compositions of Western Rift Ugandan xenoliths. EOS Trans AGU (DI001-0003)

Oborn C, Furman T & LaFemina P. 2020. Constraints from plagioclase on the post-glacial magma

storage and ascent beneath the Barðarbunga volcanic system. EOS Trans AGU (V003-0011)

Nelson WR, Dawson M, Piccoli PM, Pitcavage E & Furman T, 2020. Exploring the origin of pyroxenites using spinel compositions of Western Rift Ugandan xenoliths. EOS Trans. AGU.

Johnson-Gutierrez S, Furman T, Nelson WR & Pitcavage P, 2020. Nature and scale of lithospheric heterogeneity: xenoliths and lavas at Toro Ankole, Uganda. EOS Trans. AGU.

Bowden S, Furman T, Alhumimidi M, Assiri AM, Smye A & Crispin KL, 2020. Petrogenesis of mafic lavas from Harrat Uwayrid, Saudi Arabia: geochemical characteristics and tectonic implications of lower lithospheric melting. EOS Trans. AGU.

Oborn C, Furman T & LaFemina P, 2020. Constraints from plagioclase on the post-glacial magma storage and ascent beneath the Bardabunga volcanic system. EOS Trans. AGU

Furman T, Date A, Buyukkahraman G & Garber J. 2019. Petrogenesis of lamprophyres from Central Sarkarya (NW Anatolia, Turkey): intraplate magmatism at the onset of slab rollback. EOS Trans. AGU.

Pitcavage E, Furman T, Nelson WR, Kulyanyingi PK & Spencer S, 2019. Mineral geochemistry of primitive lavas and xenoliths from East Africa's Western Rift: implications for rift magmatism. EOS Trans AGU.

Oborn C, Furman T & LaFemina P, 2019. Geochemical insights into post-glacial volcanism in Iceland's Eastern Volcanic Zone: the Tungnárhraun lava flows. EOS Trans AGU.

Ferreira de Lima I, Pierosan R & Furman T, 2019. Petrology of volcanic and granitic rocks of the southeasternmost Amazonian Craton in the Sierra Dos Magalhaes Region, Mato Grosso, Brazil. EOS Trans AGU.

Pitcavage E, Furman T, Nelson WR, & Spencer S, 2019. Mineral-scale geochemistry of primitive lavas from Bufumbira, Uganda: implications for rift magmatism. Goldschmidt Abstracts 2764.

Crispin KL, Furman T & Cipar J, 2018. Diffusion (dis)equilibration of Cr-spinels and Fo-rich olivines at the Red Sea – Dead Sea Transform. EOS Trans AGU.

Furman T, Crispin K, Loucks E, Byrd A & Aldaajani T, 2018. Cenozoic mafic volcanism in NW Saudi Arabia: geochemical and petrological evidence for interaction between peridotite and metasomatic fluids. EOS Trans AGU.

Pitcavage E, Furman T, Nelson WR, Kulyanyingi PK & Barijaijo E, 2018. Microscale geochemical analysis of primitive lavas from Bufumbira, Uganda: implications for rift magmatism. EOS Trans AGU.

Demchuk R, Nelson WR, Pitcavage E, Piccoli PM & Furman T, 2018. Preliminary petrography and mineral chemistry of potassic mafic lavas from the Virunga volcanic province, Rwanda. EOS Trans AGU.

Spencer SN, Nelson WR, Pitcavage E, Piccoli PM, Barijaijo E, Kulyanyingi PK & Furman T, 2018. Pyroxenite xenoliths preserve partial melting event in the Western Rift, Uganda. EOS Trans AGU.

Ducatte A, Nelson WR, Pitcavage E, Barijaijo E, Kulyanyingi PK & Furman T, 2018. Evaluating the origin of pyroxenite xenoliths in the East African Rift System via Re-Os isotopes and highly-siderophile elements. EOS Trans AGU.

DiMaggio E, Sarkawi G, Glover C, Polites E, Garello D, Campisano CJ, Arrowsmith R & Furman T, 2018. Application of LA-ICP-MS to tephra correlation studies in Afar, Ethiopia. EOS Trans AGU.

DiMaggio E, Sarkawi G, Furman T, Garello D, Campisano CJ, Arrowsmith R, Wynn JG, Quade J & Feibel CS, 2018. Application of LA-ICP-MS to tephra correlation studies in Afar, Ethiopia. GSA Annual Meeting abstract 184-21.

Pitcavage E, Furman T & Nelson W, 2018. Microscale geochemical analysis of primitive lavas from Bufumbira, East Africa: implications for lithospheric stability and heterogeneity. Goldschmidt Abstracts.

Furman T, Loucks E, Byrd A, Cipar J, Alotaibi T & Crispin K, 2018. Lithospheric drip magmatism in NW Saudi Arabia highlights N. Red Sea - Dead Sea Transform interaction. Goldschmidt Abstracts.

Gall H, Cipar J, Crispin K & Furman T, 2017. Recycling and recharge processes at the Hasandağ Stratovolcano, Central Anatolia: Insights on magma chamber systematics from plagioclase textures and zoning patterns. EOS Trans AGU.

Pitcavage E, Furman T & Nelson W, 2017. Lithospheric drip magmatism and magma-assisted rifting: a case study in the Western Rift, East Africa. EOS Trans AGU.

Nelson WR, Furman T & Pitcavage E, 2016. Using osmium isotopes to explore the link between alkaline lavas and metasomatized mantle in the Western Branch, Uganda. EOS Trans. AGU, abstract T51C-2924 (invited).

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Cipar J, Gall H & Furman T, 2016. Origin of andesites at Hasandağ, Central Anatolia: timescales of magma mixing and eruption. EOS Trans. AGU, abstract V53D-3148.

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