# Professor Thomas Gernon

## Publication Highlights

As of 25 September 2026, I have 100 peer-reviewed publications (3,660 citations) and a h index of 34.

**Gernon, T.M.**, Hincks, T.K., Goodwin, P., Paxman, G.J.G., Brune, S., Rohling, E.J., Keir, D. & Braun, J. *Continental breakup-induced uplift instigated East Antarctic Ice Sheet formation*. **Science**, v. 392, eadz6758, doi: 10.1126/science.adz6758 (2026). Article attracted an associated in-depth news feature in Science: Voosen, P., How an ancient continental breakup ultimately helped spawn the vast Antarctic Ice Sheet. **Science**, 393 (6806), p. 20, doi: 10.1126/science.aek1832. Additional news from Science: *Science Advisor*, "Boosting into an ice age", 03 July 2026 and a major feature in the Science podcast of 02 July 2026.

**Gernon, T.M.**, Hincks, T.K., Rugen, E.J., Brune, S., Braun, J. & Marshak, S. Exhumation of Grand Canyon's basement along the Great Escarpment of Laurentia. **Geology**, doi: https://doi.org/10.1130/G55133.1 (2026).

Liu, Y.H., Wan, B., Mitchell, R.,N., Xiao, W.J. & **Gernon, T.M.**, Seamount subduction drives bonanza-grade gold mineralization. **Science Advances**, v. 12, p. eaef6613, doi: 10.1126/sciadv.aef6613 (2026).

Inglis, G.N., Hemingway, J., Stockey, R., Hollingsworth, E., Valdes, P., Farnsworth, A., Elling, F.J., Badger, M., Zhao, X., Pancost, R.D., Pearson, A., **Gernon, T.M.** & Hilton, R. *Enhanced marine burial of terrestrial organic carbon through the Palaeocene–Eocene Thermal Maximum*. **Nature Geoscience**, v. 19, p. 966–972, doi: 10.1038/s41561-026-02012-2 (2026).

**Gernon, T.M.** & Brune, S. Mantle Waves, **American Scientist** (solicited article for the magazine of Sigma Xi, *The Scientific Research Honor Society*), v. 114, p. 112-119, doi: 10.1511/2026.114.2.112 (2026).

**Gernon, T.M.**, Brune, S., Hincks, T.K., Palmer, M.R., Spencer, C.J., Watts, E.J. & Glerum, A. *Enriched mantle generated through persistent convective erosion of continental roots*. **Nature Geoscience**, v. 18, p. 1311–1318, doi: 10.1038/s41561-025-01843-9 (2025). Received coverage in Science (*Science Advisor*, 12 Nov 2025).

**Gernon, T.M.** & Brune, S. *Continental rifting sweeps enriched mantle from the roots of continents into the oceanic mantle*. Solicited 'Research Briefing' in **Nature Geoscience**, v. 18, p. 1200–1201, doi: 10.1038/s41561-025-01854-6 (2025).

**Gernon, T.M.**, Brune, S., Hincks, T.K. & Keir, D. *A viable Labrador Sea rifting origin of the Northern Appalachian and related seismic anomalies*. **Geology**, 53 (10), p. 859–863, 10.1130/G53588.1 (2025).

Watts, E.J., Rees, R., Jonathan, P., Keir, D., Taylor, R.N., Siegburg, M., Chambers, E.L., Pagli, C., Cooper, M.J., Michalik, A., Milton, J.A., Hincks, T.K., Gebru, E.F., Ayele, A., Abebe, B., and **Gernon, T.M.** *Mantle upwelling at Afar triple junction shaped by overriding plate dynamics*. **Nature Geoscience**, 18, p. 661–669, doi: 10.1038/s41561-025-01717-0 (2025).

Spencer, C.J., **Gernon, T.M.**, Davies, N.S., McMahon, W. & Merdith, A., 2025. *From Plant Roots to Mountain Roots: Impact of Land Plants on Subduction Zone Magmatism*. **Geology**, 53(8), p. 679–683, 10.1130/G53235.1 (2025).

Spencer, C.J., **Gernon, T.M.** & Mitchell, R.N., 2025. *Greenlandic debris in Iceland likely tied to Bond event 1 ice-rafting in the Dark Ages*. **Geology**, 53(7), p. 572–575, doi: 10.1130/G53168.1.

Merdith, A.S., **Gernon, T.M.**, Maffre, P., Donnadieu, Y., Goddéris, Y., Longman, J., Müller, R.D. & Mills, B.J.W. *Phanerozoic icehouse climates as the result of multiple solid-Earth cooling mechanisms*. **Science Advances**, 11(7), doi: 10.1126/sciadv.adm9798 (2025).

**Gernon, T.M.**, Mills, B.J.W., Hincks, T.K., Merdith, A.S., Alcott, L.J., Rohling, E.J.R. & Palmer, M.R. *Solid Earth forcing of Mesozoic oceanic anoxic events*. **Nature Geoscience**, 17, 926–935, doi: 10.1038/s41561-024-01496-0 (2024).

****Gernon, T.M.**, Hincks, T.K., Brune, S., Braun, J., Jones, S.M., Keir, D., Cunningham, A. & Glerum, A., *Coevolution of craton margins and interiors during continental breakup*. **Nature**, 632, 327–335, doi: 10.1038/s41586-024-07717-1 (2024).

Article attracted an in-depth news feature in Science: Richter, H., In sweeping geological theory, mantle waves lift up plateaus. **Science**, 588 (6709), 588–589, doi: 10.1126/science.z1mp7qn.

**See the Special Issue News feature for "Breakthrough of the Year" (Finalists/Runners-Up) by P. Voosen, *Mantle waves sculpt the continents*. **Science** 386 (6727), 1210-1215, doi: 10.1126/science.adv2101.

Russo, M., **Gernon, T.M.**‡, Santaguida. A. & Hincks, T.K., 2024. *Improving Earth science communication and accessibility with data sonification*. **Nature Reviews Earth & Environment** 5, 1–3; doi: 10.1038/s43017-023. ‡Corresponding author.

**Gernon, T.M.**, Jones, S.M., Brune, S., Hincks, T.K., Palmer, M.R., Schumacher, J.C., Primiceri, R.M., Field, M., Griffin, W.L., O'Reilly, S.Y., Keir, D., Spencer, C.J., Merdith, A. & Glerum, A., 2023. *Rift-induced disruption of cratonic keels drives kimberlite volcanism*. **Nature** 620, 344–350, doi: 10.1038/s41586-023-06193-3.
Article attracted an in-depth news feature in Science: Voosen, P., 2023. *Origin of diamond-bearing eruptions revealed*. **Science**, 381 (6656), 362–363, doi: 10.1126/science.adj9527.

Spencer, C.J., Davies, N.S., **Gernon, T.M.**, Wang, X., McMahon, W.J., Morrell, T.R., Hincks, T.K., Puhfal, P.K., Brasier, A., Seraine, M., & Lu, G.M., 2022. *Composition of continental crust altered by the emergence of land plants*. **Nature Geoscience** 15 (9), 735–740, doi: 10.1038/s41561-022-00995-2.
Associated Perspective: Greber, N., 2022. *Plant fingerprints in the deep Earth*. **Nature Geoscience** 15, p. 685–686; doi: 10.1038/s41561-022-01022-0; Editorial, *Plants rooted in rocks*. **Nature Geoscience** 15, p. 683; doi: 10.1038/s41561-022-01030-0, and Research Highlight: Grocholski, B., 2022. *Geochemistry: Deep-rooted change*, **Science**, 378 (6615), 37-38, doi: 10.1126/science.adf1655.

**Gernon, T.M.**, Barr, R., Fitton, J.G., Hincks, T.K., Longman, J., Merdith, A., Mitchell, R.N. & Palmer, M.R., 2022. *Mobilization of lithospheric mantle carbon during the Palaeocene-Eocene thermal maximum*. **Nature Geoscience** 15, 573–579, doi: 10.1038/s41561-022-00967-6.
Associated in-depth news feature in Science: Voosen, P., 2022. *Hidden carbon layer may have sparked ancient bout of global warming*. **Science**, 377 (6601), 12–13, doi: 10.1126/science.add6369.

Longman, J., Mills, B.J.W., Manners, H.R., **Gernon, T.M.** & Palmer, M., 2021. *Late Ordovician climate change and extinctions driven by elevated volcanic nutrient supply*. **Nature Geoscience** 14, p. 924–929; doi: 10.1038/s41561-021-00855-5.

**Gernon, T.M.**, Hincks, T.K., Merdith, A., Rohling, E.J., Palmer, M.R., Foster, G.L., Bataille, C.P. & Müller, R.D., 2021. *Global chemical weathering dominated by continental arcs since the mid-Palaeozoic*. **Nature Geoscience** 14, p. 690–696; doi: 10.1038/s41561-021-00806-0.

Mitchell, R.N.‡, **Gernon, T.M.**‡, Cox, G.M., Nordsvan, A.R., Kirscher, U., Xuan, C., Liu, Y., Liu, X. & He, X., 2021. *Orbital forcing of ice sheets during snowball Earth*. **Nature Communications** 12, 4187; doi: 10.1038/s41467-021-24439. ‡Contributed equally.

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Associated Perspective: Koeberl, C., 2019. *When Earth got pummeled*. **Science** 363 (6424), p. 224–225; doi: 10.1126/science.aav8480; and News Feature: Voosen, P., 2019. *Moon's craters reveal recent spike in outer space impacts on Earth*, **Science**, doi: 10.1126/science.aaw7085.

Keller, C.B., Husson, J.M., Mitchell, R.N., Bottke, W.F., **Gernon, T.M.**, Boehnke, P., Bell, E.A., Swanson-Hysell, N.L. & Peters, S.E., 2019. *Neoproterozoic glacial origin of the Great Unconformity*. **Proceedings of the National Academy of Sciences** 116 (4), p. 1136–1145; doi: 10.1073/pnas.1804350116.
News and Views: Chakravorty, A. (2019), *Did global glaciation cause the Great Unconformity?* **Eos**, 100, doi: 10.1029/2019EO120289.

Hincks, T.K., Aspinall, W., Cooke, R. & **Gernon, T.M.**‡, 2018. *Oklahoma's induced seismicity strongly linked to wastewater injection depth*. **Science** 359, p. 1251–1255; doi: 10.1126/science.aap7911. ‡Corresponding author.

**Gernon, T.M.**, Hincks, T.K., Tyrrell, T., Rohling, E.J. & Palmer, M.R., 2016. *Snowball Earth ocean chemistry driven by extensive ridge volcanism during Rodinia breakup*. **Nature Geoscience** 9, p. 242–248; doi: 10.1038/ngeo2632.
Associated News & Views feature: Fairchild, I. J., 2016. *Ocean chemistry: Neoproterozoic glass-bleeding*. **Nature Geoscience** 9, p. 192–193; doi: 10.1038/ngeo2643.

Blackford, J., Stahl, H., Bull, J., Berges, B., Cevatoglu, M., Lichtschlag, A., Connelly, D., James, R., Kita, J., Long, D., Naylor, M., Shitashima, K., Smith, D., Taylor, P., Wright, I., Akhurst, M., Chen, B., **Gernon,**

**T.M.**, Hauton, C., Hayashi, M., Kaieda, H., Leighton, T., Sato, T., Sayer, M., Suzumura, M., Tait, K., Vardy, M., White, P. & Widdicombe, S., 2014. *Detection and impacts of leakage from sub-seafloor carbon dioxide storage.* **Nature Climate Change**, 4, p. 1011-1016, doi: 10.1038/nclimate2381.

**Gernon, T.M.**, Brown, R.J., Tait, M.A. & Hincks, T.K., 2012. *The origin of pelletal lapilli in explosive kimberlite eruptions.* **Nature Communications**, 3 (832), p. 1–7, doi: 10.1038/ncomms1842.

**Gernon, T.M.**, Gilbertson, M.A., Sparks, R.S.J. & Field, M., 2008. *Gas-fluidisation in an experimental tapered bed: insights into processes in diverging volcanic conduits.* **Journal of Volcanology and Geothermal Research**, 174 (1-3), p. 49–56, doi: 10.1016/j.jvolgeores.2007.12.034.
Paper featured in **Nature** (2008), Research Highlights, 451, p. 502, doi: 10.1038/451502a.

## Further Publications

Rugen, E.J., Strachan, R., Chew, D., Molesworth, J., Lee, J., Vermeesch, P., Frei, D., Morton, A., Whittaker, Z., Storey, C., Seraine, M., Kirkland, C.L., **Gernon, T.M.** & Shields, G.A., 2026. Neoproterozoic-Early Ordovician sedimentation on the eastern margin of Laurentia: A detrital zircon provenance perspective on the Dalradian Supergroup, Scotland and Ireland. **Earth-Science Reviews**, v. 277, p. 105446. 10.1016/j.earscirev.2026.105446.

Seraine, M., Spencer, C.J., **Gernon, T.M.**, Hincks, T.K., Kirkland, C.L., Rugen, E., DaSilva, L., Shafaii Moghadam, H., Soares, L.P. & Fazio, G., 2026. Cryogenian Glacial Erosion and Tectonics as Agents of Crustal Recycling. **Terra Nova**, 38, p. 87-96. doi: 10.1111/ter.70016.

Griffin, C., **Gernon, T.M.**, Fu, M., Rugen, E.J., Spencer, A.M., Warrington, G. & Hincks, T.K., 2026. Interannual to multidecadal oscillations occurred during Cryogenian glaciation. **Earth and Planetary Science Letters**, 679, p. 119891. doi: 10.1016/j.epsl.2026.119891.

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Rawlings, J.J., **Gernon, T.M.**, Stock, M.J., Palmer, M.R., Petrone, C.M., Brown, R.J. & Humphreys-Williams, E., 2026. A classification scheme for olivine populations in the Upper Pleistocene to Holocene Igwisi Hills (Tanzania) kimberlite lavas and investigation of grain origins and evolution. **Journal of Volcanology and Geothermal Research**, 469, 108497, doi: 10.1016/j.jvolgeores.2025.108497.

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Rohling, E.J., **Gernon, T.M.**, Heslop, D., Reichart, G.J., Roberts, A.P. & Yu, J., 2024. *Reconciling the apparent discrepancy between deep-sea temperatures from proxies and from benthic oxygen isotope deconvolution.* **Paleoceanography and Paleoclimatology**, 39, e2024PA004872, doi: 10.1029/2024PA004872.

Longman, J., Manners, H.R., **Gernon, T.M.**, McManus, J., Palmer, M.R., Rowland, S.J. & Sutton, P.A., 2024. *Production and preservation of organic carbon in sub-seafloor tephra layers.* **Marine Chemistry** 258, 104334, doi: 10.1016/j.marchem.2023.104334.

**Gernon, T.M.**, Hincks, T.K., Tyrrell, T., Rohling, E.J. & Palmer, M.R., 2024. *Submarine volcanism along shallow ridges did not drive Cryogenian cap carbonate formation: COMMENT.* **Geology** 52 (8), e578, doi: 10.1130/G51884.1.

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Callow, B., Falcon-Suarez, I., Bull, J.M., **Gernon, T. M.**, Ruffell, S., Grippa, A. & Hurst, A., 2022. *Permeability heterogeneity of sandstone intrusion fluid  escape systems, Panoche Hills, California: Implications for sedimentary basins globally*. **Sedimentology** 69, p. 2463–2485, doi: 10.1111/sed.12997.

Lan, Z., Mitchell, R.N., **Gernon, T. M.** & Nordsvan, A.R., 2022. *Did an asteroid impact cause temporary warming during snowball Earth?* **Earth and Planetary Science Letters** 581, 117407, doi: 10.1016/j.epsl.2022.117407.

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Longman, J., **Gernon, T.M.**, Palmer, M.R., Jones, M.T., Stokke, E.W. & Svensen, H.H., 2021. *Marine diagenesis of tephra aided the Paleocene-Eocene Thermal Maximum termination*. **Earth and Planetary Science Letters** 571, 117101, doi: 10.1016/j.epsl.2021.117101.

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Hatter, S., Palmer, M.R., **Gernon, T.M.**, Taylor, R.N., Cole, P.D., Barfod, D. & Coussens, M., 2018. *The evolution of the Silver Hills volcanic centre, and revised $^{40}Ar/^{39}Ar$ geochronology of Montserrat, Lesser Antilles.* **Geochemistry, Geophysics, Geosystems** 19, p. 1–26; doi: 10.1002/2017GC007053.

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## Conference Papers

As of September 2026, my research has been presented in 144 conference contributions at approximately 85 distinct conferences and meetings worldwide, including 46 as lead author, with presentations ranging from invited and keynote lectures to contributed talks and posters.

**Gernon, T.M.**, Hincks, T.K., Goodwin, P., Paxman, G.J., Brune, S., Rohling, E.J., Keir, D. & Braun, J., 2026. *Continental breakup–driven uplift instigated East Antarctic Ice Sheet formation* (Session T022: Unveiling Solid Earth structure and Tectonics at both Poles in the roadmap towards the International Polar Year), Forthcoming American Geophysical Union (AGU) Conference in San Francisco, December 2026.

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**Gernon, T.M.**, Brune, S., Hincks, T.K. & Braun, J., 2026. *Mantle Waves Connect Rifted Margins and Cratonic Interiors.* Session: From mantle to mountains: understanding interactions between deep Earth and surface processes from geologic data and modelling. The Geological Society of America, GSA Connects 2026 Meeting in Denver, Colorado, USA, https://tinyurl.com/GSA26497.

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Griffin, C., **Gernon, T.M.**, Rugen, E.J., Spencer, A.M., Warrington, G. & Hincks, T.K. *Interannual to multidecadal oscillations occurred during Cryogenian glaciation.* European Geophysical Union General Assembly 2025, EGU25-2138, April, 2025, https://doi.org/10.5194/egusphere-egu25-2138.

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**Gernon, T.M.**, 2024. *Planetary design flaws and slow self-stabilising feedbacks.* Chance and Purpose in the Evolution of Biospheres, Royal Society Discussion meeting, November, 2024.

Stockey, R.G., Mills, B.J., Saupe, E.E., Monarrez, P., Gruszka, P., Pohl, A., Monteiro, F., Xie, Y., Vervoort, P., Inglis, G., **Gernon, T.M.**, Hülse, D., Ridgewell, A. & Lunt, D. *Phanerozoic ocean biogeochemistry and marine biodiversity in space and time.* Life and Planet Meeting—The annual meeting of the Earth System Science Group of the Geological Society of London, July 2024.

Longman, J., **Gernon, T.M.**, Hincks, T., Panitz, S. & Palmer, M., 2024. *A million-year reconstruction of global volcanism intensity: How does it link to glaciation?* European Geophysical Union General Assembly 2024, EGU24-17827, https://doi.org/10.5194/egusphere-egu24-17827.

Wheen, L., **Gernon, T.M.**, Hall, C., Wright, J. & Benjamin, O., 2024. *The largely linear response of Earth's ice volume to orbital forcing.* European Geophysical Union General Assembly 2024, EGU24-64, https://doi.org/10.5194/egusphere-2023-2893.

Tomsett, C., Leyland, J., Darby, S., **Gernon, T.M.**, Parsons, D., Hincks, T. & Wolstenholme, J., 2024. *Vertical Mixing of Suspended Sediment in Big Rivers using ADCP data and Machine Learning.* European Geophysical Union General Assembly 2024, EGU24-9717, https://doi.org/10.5194/egusphere-egu24-9717.

**Gernon, T.M.**, Brune, S., Hincks, T.K., Mills, B., Jones, S., Alcott, L., Palmer, M., Keir, D., Rohling, E.J. & Merdith, A., 2024. *A multi-million-year legacy of volcanism in the Earth system.* Volcanic and Magmatic Studies Group (VMSG) Meeting, Jan 2024.

Horn, E.L., Taylor, R.N., **Gernon, T.M.**, Schofield, K.E. & Stock, M.J., 2024. *New insights into the magmatic systems feeding caldera-forming eruptions from juvenile nodules in lag breccias.* Volcanic and Magmatic Studies Group (VMSG) Meeting, Jan 2024.

Rawlings., J., **Gernon, T.M.**, Humphreys-Williams, E., Stock, M. & Palmer, M.R., 2024. *Constraining ascent velocities of diamond bearing kimberlite magmas using diffusion chronometry.* Volcanic and Magmatic

Studies Group (VMSG) Meeting, Jan 2024.

Watts, E.J., Rees, R., **Gernon, T.M.**, Jonathan, P., Keir, D., Taylor, R., Chambers, E.L. & Pagli, C., 2024. *Afar triple junction fed by single, heterogeneous mantle upwelling.* Volcanic and Magmatic Studies Group (VMSG) Meeting, Jan 2024.

Tomsett, C., Leyland, J., Darby, S., **Gernon, T.M.**, Hincks, T., 2023. *Investigating Patterns in the Vertical Mixing of Suspended Sediment in Big Rivers Globally.* In AGU Fall Meeting Abstracts (Vol. 2023, EP41D-2347), https://studio.m-anage.com/agu/fm23/meetingapp.cgi/Paper/1287157.

**Gernon, T.M.**, Jones, S.M., Brune, S., Hincks, T.K., Palmer, M.R., Schumacher, J.C., Primiceri, R.M., Field, M., Griffin, W.L., O'Reilly, S.Y., Keir, D., Spencer, C.J., Merdith, A. & Glerum, A., 2023. *Rift-induced disruption of cratonic keels drives kimberlite volcanism.* In AGU Fall Meeting Abstracts (Vol. 2023, T21C-06), https://studio.m-anage.com/agu/fm23/meetingapp.cgi/Paper/1429111.

**Gernon, T.M.**, Mills, B., Hincks, T.K., Merdith, A., Alcott, L., Rohling, E. & Palmer, M., 2023. *Solid Earth forcing of oceanic anoxic events.* Life and Planet Meeting—The annual meeting of the Earth System Science Group of the Geological Society of London, July 2023.

**Gernon, T.M.**, Jones, S.M., Brune, S., Hincks, T.K., Palmer, M.R., Schumacher, J.C., Primiceri, R.M., Field, M., Griffin, W.L., O'Reilly, S.Y., Keir, D., Spencer, C.J., Merdith, A. & Glerum, A., 2023. *Kimberlite ascent by rift-driven disruption of cratonic mantle keels.* Goldschmidt, Lyon, July 2023, doi: https://doi.org/10.7185/gold2023.16554.

Illsley-Kemp, F., Jacobs, K., Wallace, L., Hincks, T. & **Gernon, T.M.**, 2023. *The Silent Trigger: Do slow-slip earthquakes trigger volcanic unrest in the Taup Volcanic Zone?* IAVCEI 2023 Scientific Assembly, Contribution number 1230, Rotorua, New Zealand.

Horn, E.L., Taylor, R.N., **Gernon, T.M.** & Stock, M.J., 2023. *Melt-rich nodules capture the isotopic heterogeneity of a magma mush reservoir.* IAVCEI 2023 Scientific Assembly, Contribution number 472, Rotorua, New Zealand.

Watts, E.J., **Gernon, T.M.**, Taylor, R., Keir, D., Siegburg, M., Jarman, J., Pagli, C. & Gioncada, A., 2023. *A window into the inner workings of proto-oceanic rift volcanoes: An Afar case study.* IAVCEI 2023 Scientific Assembly, Contribution number 688, Rotorua, New Zealand.

Watts, E.J., **Gernon, T.M.**, Taylor, R., Keir, D., Siegburg, M., Jarman, J., Pagli, C. & Gioncada, A., 2023. *A window into the inner workings of proto-oceanic rift volcanoes: An Afar case study.* Volcanic and Magmatic Studies Group (VMSG) Meeting Jan 2023 (best talk).

Spencer, C.J., Davies, N.S., **Gernon, T.M.**, Wang, X., McMahon, W.J., Morrell, T.R., Hincks, T.K., Puhfal, P.K., Brasier, A., Seraine, M. & Lu, G.M., 2022. *The emergence of land plants changed the composition of the continental crust.* Geological Society of America (GSA) Connects 2022 meeting, Denver, Colorado, Geological Society of America Abstracts with Programs. Vol 54, No. 5. doi: https://doi.org/10.1130/abs/2022AM-377625.

Merdith, A., Mills, B., Maffre, P., Goddéris, Y., Donnadieu, Y. & **Gernon, T.M.**, 2022. *Delineating driving mechanisms of Phanerozoic climate: building a habitable Earth.* EGU General Assembly 2022 (EGU22-11544); https://doi.org/10.5194/egusphere-egu22-11544.

Horn, E.L., Taylor, R.N., **Gernon, T.M.** & Stock, M.J., 2021. *Compositional evidence for dynamic, transcrustal mush systems at an ocean island volcano: The 289 ka Fasnia eruption, Tenerife.* In AGU Fall Meeting Abstracts.

Watts, E.J., **Gernon, T.M.**, Keir, D., Taylor, R. & Pagli, C., 2021. *Geochemical Evidence of Varying Melt Production at the Erta Ale Volcanic Segment.* In AGU Fall Meeting Abstracts (Vol. 2021, pp. T43D-06).

Horn, E.L., Taylor, R.N., **Gernon, T.M.** & Stock, M.J., 2021. *Petrological and geochemical snapshot of a melt-rich crystal mush: The 289 ka Fasnia eruption, Tenerife.* Goldschmidt2021, Virtual, July 2021, https://conf.goldschmidt.info/goldschmidt/2021/goldschmidt/2021/meetingapp.cgi/Paper/7147.

**Gernon, T.M.**, Hincks, T.K., Aspinall, W. & Cooke, R., 2021. *Machine learning of seismicity induced by hydraulic fracturing.* Invited keynote speaker, 3rd Institute of Mathematics and OR Society Conference on Mathematics of Operational Research (virtual).

**Gernon, T.M.**, 2021. *The role of volcanism in shaping Neoproterozoic snowball Earth.* Invited keynote speaker, Volcanic and Magmatic Studies Group Meeting, Geological Society of London (virtual assembly).

Watts, E.J., **Gernon, T.M.**, Taylor, R.N., Keir, D., Siegburg, M., Jarmin, J., Pagli, C. & Gioncada, A., 2021. *Evolution of the Alu-Dalafilla and Borale Volcanoes, Afar.* EGU General Assembly (virtual assembly) (EGU21-7898), https://doi.org/10.5194/egusphere-egu21-7898.

Watts, E.J., **Gernon, T.M.**, Taylor, R.N., Keir, D., Siegburg, M., Pagli, C. & Gioncada, A., 2021. *Evolution of the Alu-Dalafilla and Borale Volcanoes, Afar, Ethiopia.* Volcanic and Magmatic Studies Group Meeting, Geological Society of London (virtual assembly).

Rees, R., **Gernon, T.M.** & Keir, D., 2021. *Volcanic and geochemical evolution of the Northern Main Ethiopian Rift (NMER) in East Africa: volcanism in the NMER–Afar transition zone.* Volcanic and Magmatic Studies Group Meeting, Geological Society of London (virtual assembly).

**Gernon, T.M.**, Hincks, T.K., Merdith, A., Rohling, E.J., Palmer, M.R., Foster, G.L., Bataille, C. & Müller, D., 2020. *Tectonic forcing of global chemical weathering since the mid-Paleozoic.* EGU General Assembly 2020 (virtual assembly), EGU2020-10623, https://doi.org/10.5194/egusphere-egu2020-10623.

Longman, J., Palmer, M. & **Gernon, T.M.**, 2020. *Quantifying the role of volcanic ash supply in the oceanic iron and manganese cycles.* EGU General Assembly 2020 (virtual assembly), EGU2020-10721, https://doi.org/10.5194/egusphere-egu2020-10721.

Merdith, A., Andreani, M., Daniel, I. & **Gernon, T.M.**, 2020. *A magnesium budget for serpentinisation of abyssal peridotite during the Cenozoic.* EGU General Assembly 2020 (virtual assembly), EGU2020-19115, https://doi.org/10.5194/egusphere-egu2020-19115.

Watts, E.J., **Gernon, T.M.**, Keir, D., Taylor, R.N., Siegburg, M., Pagli, C. & Gioncada, A., 2020. *Geological evolution of the Alu-Dalafilla volcanic complex, Afar.* Volcanic and Magmatic Studies Group Meeting, Plymouth University.

Horn, E.L., Taylor, R.N., **Gernon, T.M.** & Stock, M.J., 2020. *Stratigraphy of a mushy magma reservoir: insights from the 289 ka Fasnia eruption, Tenerife.* Volcanic and Magmatic Studies Group Meeting, Plymouth University.

Hicks, S., Verdon, J., Baptie, B., Luckett, R., Mildon, Z., **Gernon, T.M.**, 2019. *The 2018 Newdigate, Surrey, UK earthquake sequence: induced by nearby oilfield development/production, or not?* Society for Earthquake and Civil Engineering Dynamics Conference (SECED 2019), Greenwich, London.

Longman, J., **Gernon, T.M.**, & Palmer, M.R., 2019. *Authigenic carbonate formation during the PETM: A mechanism for removal of atmospheric $CO_2$?* EGU General Assembly, Geophysical Research Abstracts Vol. 21, EGU2019-7850, https://meetingorganizer.copernicus.org/EGU2019/EGU2019-7850.pdf.

Siegburg, M., **Gernon, T.M.**, Bull, J.M., Keir, D., Taylor, R.N., Nixon, C.W., Abebe, B. 2019. *Evolution of faulting and volcanism during magmatic rifting in the Ethiopian Rift: A case study of the Boset-Bericha Volcanic Complex.* UK RiftVolc Consortium, Hawassa, Ethiopia.

Bottke, W., Mazrouei, S., Ghent, R., Parker, A. & **Gernon, T.M.**, 2018. *What really happened to Earth's older craters?* 49th Lunar and Planetary Science Conference 2018, The Woodlands, Texas (LPI Contrib. No. 2083). https://www.hou.usra.edu/meetings/lpsc2018/pdf/1457.pdf

Illsley-Kemp, F, Bull, J., Keir, D., Gerya, T., Pagli, C., **Gernon, T.M.**, Ayele, A., Goitom, B., Hammond, J.O.S. & Kendall, J.M., 2017. *Formation of an oceanic transform fault prior to seafloor spreading.* Abstract T53B-03 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.

Bottke, W., Mazrouei, S., Ghent, R., Parker, A. & **Gernon, T.M.**, 2017. *What really happened to Earth's older craters?* American Astronomical Society, 49th Annual Division for Planetary Sciences Meeting, Provo, Utah, 2017DPS....4910003B.

**Gernon, T.M.**, Hincks, T.K., Tyrrell, T., Rohling, E.J. & Palmer, M.R., 2017. *'Snowball Earth' ocean chemistry driven by weathering of a shallow ridge system during Rodinia breakup.* **Invited keynote speaker**, Goldschmidt, Paris (No. 1325), https://goldschmidtabstracts.info/2017/1325.pdf.

Taylor, R.N., Farley, E.M.R., Davilla-Harris, P., Branney, M. & **Gernon, T.M.**, 2017. *Pulsing evolution of a hotspot: constraining the scale of mantle heterogeneities.* Goldschmidt, Paris, 2017 (No. 3894), https://goldschmidtabstracts.info/2017/3894.pdf

Manners, H.R., Palmer, M.R., **Gernon, T.M.**, Sutton, P.A., Rowland, S.J. & McManus, J., 2017. *Selective preservation of organic matter in tephra layers.* International Meeting on Organic Geochemistry, Florence, Italy.

Siegburg, M., **Gernon, T.M.**, Bull, J., Keir, D., Taylor, R., Nixon, C., Abebe, B. & Ayele, A., 2017. *Morphometric and magmatic evolution at the Boset-Bericha Volcanic Complex in the Main Ethiopian Rift.* 19th EGU General Assembly, EGU2017, proceedings from the conference held 23-28 April, 2017 in Vienna, Austria, p.1109, 2017EGUGA..19.1109S.

Farley, E.M.R., Taylor, R.N. & **Gernon, T.M.**, 2017. *A single eruption "snapshot" through a complete magma reservoir.* Joint assembly of TSG-VMSG-BGA, Liverpool.

Siegburg, M., **Gernon, T.M.**, Bull, J., Keir, D. & Nixon, C., 2017. *Magmatic and morphometric evolution of Boset-Bericha Volcanic Complex in the Main Ethiopian Rift.* Joint assembly of TSG-VMSG-BGA, Liverpool.

Illsley-Kemp, F, Bull, J., Keir, D., Gerya, T., Pagli, C., **Gernon, T.M.**, Ayele, A., Goitom, B., Hammond, J.O.S. & Kendall, J.M., 2017. *Formation of an oceanic transform fault during continental rifting.* Joint assembly of the Tectonic Studies Group (TSG), Volcanic and Magmatic Studies Group (VMSG) and British Geophysical Association (BGA), Liverpool.

**Gernon, T.M.**, Hincks, T.K., Tyrrell, T., Rohling, E.J. & Palmer, M.R., 2016. *'Snowball Earth' ocean chemistry driven by extensive ridge volcanism during Rodinia breakup.* **Invited keynote speaker**, Sprigg Symposium, Australian Earth Science Convention (AESC), Adelaide.

Hatter, S.J., Palmer, M.R., Taylor, R.N. & **Gernon, T.M.**, 2016. *Geochemical evolution of Montserrat and Guadeloupe (Lesser Antilles Arc): investigating the role of subducting oceanic basement ridges.* Volcanic and Magmatic Studies Group Meeting, Trinity College Dublin.

Emeana, J., Dix, J., **Gernon, T.M.**, Thompson, C.E., Henstock, T., & Pilgrim, J., 2015. *Physical modelling of the effects of sediment thermal regimes on subsea HV cable performance.* AGU Fall Meeting, San Francisco.

Illsley-Kemp, F, Keir, D., Bull, J., Ayele, A., Hammond, J., Kendall, J.M., Gallacher, R., **Gernon, T.M.** & Goitom, B., 2015. *Magmatic plumbing at an incipient oceanic spreading centre: Evidence from local earthquake data in Northern Afar.* AGU Fall Meeting, San Francisco.

**Gernon, T.M.**, Hincks, T.K., Tyrrell, T., Rohling, E.J. & Palmer, M.R., 2015. *'Snowball Earth' ocean chemistry driven by explosive unzipping of Rodinia.* Earth's Uninterrupted Habitability, Geological Society of London.

Cevatoglu, M., Bull, J.M., Vardy, M.E., Wright, I.C. & **Gernon, T.M.**, 2015. *First controlled sub-seabed $CO_2$ release experiment: qualitative and quantitative analysis of high-resolution seismic reflection data.* IEAGHG The Risk Management and Environmental Research Meeting, Southampton.

Manners, H.R., Palmer, M.R., **Gernon, T.M.**, Sutton, P.A., Rowland, S.J. & McManus, J., 2015. *The Role of Marine Diagenesis of Tephra in the Carbon Cycle.* International Meeting on Organic Geochemistry, Prague, Czech Republic.

Siegburg, M., **Gernon, T.M.**, Bull, J.M., Keir, D.K., Nixon, C.W., Taylor, R.N. & Abebe, B., 2015. *Tectonomagmatic interaction at the Boset Volcanic Complex in the Main Ethiopian Rift.* British Geophysical Association, Postgraduate Research in Progress Meeting, Southampton.

Illsley-Kemp, F, Keir, D., Bull, J., Ayele, A., Hammond, J., Kendall, J.M., Gallacher, R., **Gernon, T.M.**, & Goitom, B., in prep. *Seismicity of an incipient oceanic spreading centre in Northern Afar.* British Geophysical Association, Postgraduate Research in Progress Meeting, Southampton.

Emeana, J., Dix, J., Henstock, T., **Gernon, T.M.**, Thompson, C.E. & Pilgrim, J., 2015. *The thermal regime around buried submarine high voltage cables.* British Geophysical Association, Postgraduate Research in Progress Meeting, Southampton.

Hughes, T.J., Henstock, T.J., Dix, J.K., Pilgrim, J.A., **Gernon, T.M.** & Thompson, C.E.L., 2015. *Influence of sediment permeability on typical temperature response times of submarine high voltage cables.* British Geophysical Association, Postgraduate Research in Progress Meeting, Southampton.

Hatter, S.J., Palmer, M.R. & **Gernon, T.M.**, 2015. *Discovery of a 2.5Ma, VEI-5 Plinian eruption on Guadeloupe.* Goldschmidt Conference, Prague, Czech Republic (best student poster prize).

Hatter, S.J., Palmer, M.R., **Gernon, T.M.** & Taylor, R.N., 2015. *Marine sediments as an archive of arc volcanic history: Montserrat and Guadeloupe, Lesser Antilles.* IUGG General Assembly, Prague, Czech Republic.

Palmer, M.R., Manners, H.R., **Gernon, T.M.**, Sutton, P.A. & Rowland, S.J., 2015. *Selective preservation of amides in marine tephra layers.* Goldschmidt Conference, Prague, Czech Republic (No. 2387), https://goldschmidtabstracts.info/2015/2387.pdf.

Hughes, T.J., Henstock, T.J., Dix, J.K., Pilgrim, J.A., **Gernon, T.M.** & Thompson, C.E.L., 2015. *Thermal ratings of submarine HV cables informed by environmental considerations.* Jicable—9th International Conference on Insulated Power Cables, Versailles, France.

Illsley-Kemp, F., Keir, D., Bull, J., **Gernon, T.M.**, Hammond, J., Kendall, J.M., Goitom, B., & Ayele, A., 2015. *Magmatic plumbing at an incipient oceanic spreading centre: Evidence from local earthquake data in Northern Afar.* History of Seismology Meeting: From Hooke to Helioseismology, University of Leicester.

**Gernon, T.M.**, Keir, D., Bull, J. & Taylor, R.N., 2015. *Development of the Boset-Bericha volcanic complex, northern Main Ethiopian Rift.* Volcanic and Magmatic Studies Group Meeting, Norwich, UK.

Taylor, R.N., **Gernon, T.M.**, Stock, M.J. & Brown, R.J., 2015. *The mixing, evolution and eruption history of a disaggregated magma reservoir.* Volcanic and Magmatic Studies Group Meeting, Norwich, UK.

Hatter, S.J., Palmer, M.R., **Gernon, T.M.** & Taylor, R.N., 2015. *Marine sediments as an archive of arc volcanic history, Montserrat.* Volcanic and Magmatic Studies Group Meeting, Norwich, UK.

Coussens, M., Talling, P., Watt, S., Cassidy, M., Wall-Palmer, D., **Gernon, T.M.** & Palmer, M.R., 2015. *Investigating the long-term evolution of an island-arc volcano.* Volcanic and Magmatic Studies Group Meeting, Norwich, UK.

Coussens, M., Talling, P., Watt, S., Cassidy, M., Wall-Palmer, D., Jutzeler, M., **Gernon, T.M.** & Palmer, M.R., 2015. *Investigating the long-term evolution of an island-arc volcano.* Martinique volcanology conference.

**Gernon, T.M.**, 2014. *Diamond eruptions.* **Invited keynote speaker**, Mineral Deposits Studies Group Meeting, Southampton, UK. (**Gernon, T.M.**, 2014. *Diamond eruptions*, Applied Earth Science (Trans. Inst. Min. Metall. B), 124(1), p. 35–36).

Elliott, H.A., **Gernon, T.M.**, Roberts, S., Hewson, C. & Boyce, A., 2014. *Diatreme volcanism and Pb-Zn mineralisation in the Limerick district of the Irish orefield.* Mineral Deposits Studies Group Meeting, Southampton, UK. (Elliott, H.A., **Gernon, T.M.**, Roberts, S., Hewson, C. & Boyce, A., 2015. *Diatreme volcanism and Pb-Zn mineralisation in the Limerick district of the Irish orefield*, Applied Earth Science (Trans. Inst. Min. Metall. B), 124(1), p. 32–33). Rio Tinto Prize for best talk.

**Gernon, T.M.**, 2014. *Volcanic venting and the eruption of alkaline igneous rocks.* Geophysical Research Abstracts, Vol. 16, EGU General Assembly, Abstract EGU2014-3003.

**Gernon, T.M.** & Gilbertson, M.A., 2014. *Segregation of particles in a tapered fluidized bed with implications for pyroclastic volcanism.* Geophysical Research Abstracts, Vol. 16, EGU General Assembly, Abstract EGU2014-10505.

Hughes, T.J., Henstock, T.J., Dix, J.K., Pilgrim, J.A. & **Gernon, T.M.**, 2014. *Heat Transfer in HV Cable Systems Under the Seafloor.* 7th UHVnet (Universities High Voltage Network) Colloquium.

Emeana, C.J., Dix, J.K., Henstock, T.J., **Gernon, T.M.**, Pilgrim, J.A. & Thompson, C.E.L., 2014. *Sediment thermal properties and the implication for the performance of sub-seabed HV cables.* 7th UHVnet (Universities High Voltage Network) Colloquium.

Coussens, M., Talling, P., Watt, S., **Gernon, T.M.** & Palmer, M., 2014. *Investigating the long term evolution of an island arc volcano.* Volcanic and Magmatic Studies Group Meeting, Edinburgh, UK.

Elliott, H.A.L., **Gernon, T.M.**, Roberts, S., & P.B. Redmond, 2013. *Facilitation of Pb-Zn mineralisation by diatremes in the Irish Orefield?* Eos Trans. AGU, Fall Suppl., Abstract V41D-2833.

Cevatoglu, M., Bull, J.M., Vardy, M.E., Wright, I.C. & **Gernon, T.M.**, 2013. *First controlled sub-seabed $CO_2$ release experiment: Insights into gas migration pathways and impacts on sediment physical properties.* Eos Trans. AGU, Fall Suppl., Abstract OS11E-05.

Cevatoglu, M., Bull, J.M., Vardy, M.E., Wright, I.C. & **Gernon, T.M.**, 2013. *First controlled sub-seabed $CO_2$ release experiment: Insights into gas migration pathways and impacts on sediment physical properties.* British Geophysical Association, Postgraduate Research in Progress Meeting, Cambridge.

Hughes, T.J., Henstock, T.J., Pilgrim, J.A., Dix, J.K., **Gernon, T.M.**, 2013. *Environmental Controls on the State of HV cables under the seafloor.* HubNet Smartgrids Symposium, Cardiff.

Palmer, M.R., **Gernon, T.M.** & SHIPBOARD SCIENTISTS OF IODP LEG 340, 2013. *The role of tephra diagenesis in the carbon cycle.* Goldschmidt 2013 Conference Abstracts, Mineralogical Magazine 77 (5), p. 1915, doi: 10.1180/minmag.2013.077.5.16.

Johnson, P., Inglis, E., Marchant, I., Cassidy, M., Palmer, M.R., Talling, P.J., **Gernon, T.M.**, Watt, S. & SHIPBOARD SCIENTISTS OF IODP LEG 340, 2013. *Marine sediments as an archive of the evolution of volcanism on Montserrat.* Goldschmidt 2013 Conference Abstracts, Mineralogical Magazine 77 (5), p. 1400, doi: 10.1180/minmag.2013.077.5.10.

**Gernon, T.M.**, Wood, M., Brown, R.J., Medlin, C., Tait, M. & Hincks, T.K., 2013. *Pyroclastic granulation in explosive volcanic eruptions.* Volcanic and Magmatic Studies Group Meeting, Bristol, UK.

Stock, M.J., Taylor, R.N. & **Gernon, T.M.**, 2013. *Triggering of major volcanic eruptions recorded by actively forming cumulates on Tenerife.* Volcanic and Magmatic Studies Group Meeting, Bristol, UK.

Elliott, H.A., **Gernon, T.M.**, Roberts, S. & Redmond, P., 2013. *Diatreme volcanism facilitating Pb-Zn mineralisation in the Irish Orefield?* Volcanic and Magmatic Studies Group Meeting, Bristol, UK (awarded the VMSG Bob Hunter prize for best oral presentation).

Brooker, R.A., Ogilvie-Harris, R.C., **Gernon, T.M.**, Sparks, R.S.J. & Field, M., 2013. *The Snap Lake kimberlite; a true composite intrusion.* Volcanic and Magmatic Studies Group Meeting, Bristol, UK.

**Gernon, T.M.**, Brown, R.J., Tait, M. & Hincks, T.K., 2012. *The origin of pelletal lapilli in explosive kimberlite eruptions.* 10th International Kimberlite Conference, Bangalore, India, 10IKC-A-00372.

Sparks, R.S.J., Brown, R.J., Field, M., **Gernon, T.M.** & Kavanagh J., 2012. *Dynamics of kimberlite magma ascent, intrusion and eruption.* 10th International Kimberlite Conference, Bangalore, India, 10IKC-A-00368.

**Gernon, T.M.**, Field, M., Sparks, R.S.J. & Ogilvie-Harris, R.C., 2012. *Emplacement of the Snap Lake kimberlite intrusion, NW Territories, Arctic Canada.* 10th International Kimberlite Conference, Bangalore, India, 10IKC-A-00278.

Stock, M.J., Taylor, R.N. & **Gernon, T.M.**, 2012. *Major Plinian eruptions on Tenerife: An insight into driving mechanisms from cumulate nodules.* Volcanic and Magmatic Studies Group Meeting, Durham, UK.

Elliott, H.A., **Gernon, T.M.**, Roberts, S. & Redmond, P., 2012. *Pb-Zn mineralization within the Limerick Basin (SW Ireland): A role for volcanism?* Mineral Deposits Studies Group Meeting, Cardiff, UK.

**Gernon, T.M.**, 2011. *Kimberlite volcanology.* **Invited keynote speaker**, International Diamond School, University of Padua, Bressanone-Brixen, Italian Alps.

**Gernon, T.M.**, Field, M., Sparks, R.S.J. & Ogilvie-Harris, R.C., 2010. *Emplacement of crystal-rich magmas: insights from the Snap Lake kimberlite intrusion (NW Territories, Canada).* Geophysical Research Abstracts, Vol. 12, EGU General Assembly, Abstract EGU2010-12326.

Gernon, T.M. & Hincks, T.K., 2010. *Depositional processes of the basaltic Elie Ness diatreme, East Fife, Scotland.* Geophysical Research Abstracts, Vol. 12, EGU General Assembly, Abstract EGU2010-11710.

**Gernon, T.M.**, Field, M., Sparks, R.S.J. & Ogilvie-Harris, R.C., 2010. *Emplacement of crystal-rich magmas: insights from the Snap Lake kimberlite intrusion (NW Territories, Canada).* British Geophysical Association meeting, "Magma emplacement and storage in the Earth's crust", New Advances in Geophysics, Geological Society of London.

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