

## Publication List - Dr Iain Pitcairn

### 1. Peer-reviewed articles

Zoheir, B, Emam, A, **Pitcairn, IK**, Boskabadi, A, Lehaye, Y, Cooper, M (2018) Trace elements and isotope data of the Um Garayat gold deposit, Wadi Allaqi district, Egypt. *Mineralium Deposita*, *Accepted*

Cardenes, V, Merinero, R, Lopez-Mungira, Rubio-Ordonez, A, Cnudde, V, **Pitcairn, IK** (2018) From shale to slate: using High Resolution X-Ray Tomography to determine the lower boundary of metamorphism in pelitic rocks. *Geological Society of London Special Publication 478 In Press* <https://doi.org/10.1144/SP478.2>

Menzies, CD, Wright, SL, Craw, D, James, RH, Alt, JC, Cox, SC, **Pitcairn, IK**, Teagle, DAH (2018) Carbon dioxide generation and drawdown during active orogenesis of siliciclastic rocks in the Southern Alps, New Zealand. *EPSL* 481, 305-315

Zoheir, B., Deshesh, F., Broman, C, **Pitcairn, IK**, El-Metwally, A, Mashall, S (2017) Granitoid-associated gold mineralisation in Egypt: a case study from the Atalla mine. *Mineralium Deposita* <https://doi.org/10.1007/s00126-017-0772-2>

Hofmann, A, **Pitcairn IK**, Wilson, A (2017) Gold mobility during Paleoproterozoic submarine alteration. *EPSL* 462, 47-54

Patten, CGC, **Pitcairn, IK**, Teagle, DAH (2017) Hydrothermal mobilisation of Au and other metals in supra-subduction oceanic crust: insights from the Troodos ophiolite. *Ore Geology Reviews* 86, 487-508

Hamisi, J, MacKenzie, D, **Pitcairn IK**, Blakemore, H, Zack, T, Craw, D (2017) Hydrothermal footprint of the Birthday Reef, Reefton goldfield, New Zealand. *New Zealand Journal of Geology and Geophysics* 60, 59-72

Boskabadi, A, **Pitcairn, IK**, Broman, C, Boyce, A, Teagle, DAH, Cooper, MJ, Azer, MK, Stern, RJ, Mohamed, FH, Majka, J (2017) Carbonate alteration of ophiolitic rocks in the Arabian–Nubian Shield of Egypt: sources and compositions of the carbonating fluid and implications for the formation of Au deposits. *International Geology Review* 59, 391-419

Patten, CGC, **Pitcairn, IK**, Teagle, DAH, Harris, M (2016) Sulphide mineral evolution and metal mobility during alteration of the oceanic crust: Insights from ODP Hole 1256D. *Geochimica et Cosmochimica Acta* 193, 132-159

Cave, BJ, **Pitcairn, IK**, Craw, D, Large, RR, Thompson, J, Johnson, SC (2016) A Metamorphic Mineral Source for Tungsten in the Turbidite-hosted Orogenic Gold Deposits of the Otago Schist, New Zealand. *Mineralium Deposita* 52, 515-537

Mortimer N, Craw D, MacKenzie DJ, Mortensen J, Ring U, **Pitcairn IK** (2016) Cretaceous tectonics and regional gold mineralisation in the Otago Schist, New Zealand. *Geology and Exploration of New Zealand Mineral Deposits*, Christie, A.B (Ed) Australasian Institute of Mining and Metallurgy Monograph, 133-140

Kleine, BI, **Pitcairn, IK**, Skelton, ADL (2016) Mineralogical controls on metamorphic fluid flow in metabasaltic sills from Islay, Scotland. *Lithos* 248, 22-39

**Pitcairn, IK**, Skelton, A, Wolgemuth-Uebewasser, CC (2015) Mobility of gold during metamorphism of the Dalradian in Scotland. *Lithos* 233, 69-88

Skelton, ADL, Lewerentz, A, Kleine, BI, Webster, D, **Pitcairn, IK** (2015) Structural Channelling of Metamorphic Fluids on Islay, Scotland: Implications for Paleoclimatic Reconstruction. *Journal of Petrology* 56, 2145-2172

Lisitsin, VA, **Pitcairn, IK** (2015) Orogenic gold mineral systems of the Western Lachlan Orogen (Victoria) and the Hodgkinson Province (Queensland): Crustal metal sources and cryptic zones of regional fluid flow. *Ore Geology Reviews* 76, 280-295

Kleine, B, **Pitcairn, IK**, Skelton, ADL (2015) The mechanism of infiltration of metamorphic fluids recorded by hydration and carbonation of epidote-amphibolite facies metabasaltic sills in the SW Scottish Highlands. *American Mineralogist* 100, 2702-2717

Patten, C, **Pitcairn, IK**, Teagle, DAH, Harris, M (2015) Mobility of Au and related elements during the hydrothermal alteration of the oceanic crust: sources of metals in VMS deposits. *Mineralium Deposita* 51, 179-200

Sosnicka, M, Bakker, RJ, Broman, C, **Pitcairn, IK**, Paranko, I, Burlinson, K (2015) Fluid types and their genetic meaning for the BIF-hosted iron ores, Krivoy Rog, Ukraine. *Ore Geology Reviews* 68, 171-194

**Pitcairn, IK**, Craw, D, Teagle, DAH (2014) Metabasalts as sources of metals in orogenic gold deposits. *Mineralium Deposita* 50, 373-390

Craw, D, Mortensen, J, MacKenzie, D, **Pitcairn, IK** (2014) Contrasting geochemistry of orogenic gold deposits in Yukon, Canada and Otago, New Zealand. *Geochemistry: Exploration, Environment, Analysis* <https://doi.org/10.1144/geochem2013-262>

Klein, B, Skelton, A, Huet, B and **Pitcairn, IK** (2014) Preservation of blueschist facies minerals along a shear zone by coupled metasomatism and fast flowing high  $X_{CO_2}$  fluids. *Journal of Petrology* 55, 1905-1939

**Pitcairn, IK**, Craw, D, Teagle, DAH (2014) The gold conveyor belt: Large-scale gold mobility in an active orogen *Ore Geology Reviews* 62, 129-142

Webber, A, Roberts, S, **Pitcairn, IK**, Taylor, R (2013) Golden Plumes: Substantial gold enrichment of oceanic crust during ridge-plume interaction *Geology* 41, 87-90

- Boskabadi, A, **Pitcairn, IK**, Stern, RJ, Azer, M, Broman, C, Mohamed, FH, Majka, J (2013) Carbonatite crystallisation and alteration in the Tarr carbonatite-albitite complex, Sinai Peninsula, Egypt. *Precambrian Research* 239, 24-41
- Pitcairn, I.K** (2013) The gold line and gold deposits in the Skellefte District. Excursion guidebook SWE2, 12th SGA Biennial Meeting, 12-15 August 2013, Uppsala, Sweden
- Pitcairn, IK** (2011) Background concentrations of gold in different rock types. *Applied Earth Science* 120, 31-38
- Arghe, F, Skelton, ADL, **Pitcairn, IK** (2011) Spatial coupling between spilitisation and carbonation of basaltic sills in SW Scottish Highlands: evidence of a mineralogical control of metamorphic fluid flow. *Geofluids* 11, 245-259
- Pitcairn, IK**, Olivo, GR, Teagle, DAH, Craw, D (2010) Sulfide evolution during prograde metamorphism of the Otago and Alpine Schists, New Zealand. *Canadian Mineralogist*, v. 48, p. 1267-1296
- Skelton, ADL, Arghe, F, **Pitcairn, IK** (2010) Regional mapping of pre-metamorphic spilitisation and associated chemical mobility in greenschist facies metabasalts of the SW Scottish Highlands. *Journal of the Geological Society, London*, v. 167, p. 1049-1061
- Pitcairn, IK**, Skelton, ADL, Arghe, F, Broman, K, Boyce, A (2010) Structurally focused fluid flow during orogenesis: The Islay Anticline, Islay, Scotland. *Journal of the Geological Society, London*, v. 167, p. 659-674
- Pitcairn, IK** and Arndt, NT (2008) Shock brecciation around the Kidd Creek Deposit, Abitibi Belt, Canada. *Canadian Journal of Earth Sciences*, v. 45, p. 871-878
- Craw, D, MacKenzie, D.J., **Pitcairn, I.K.**, Teagle, D.A.H., Norris, R.J. (2007) Geochemical signatures of mesothermal Au-mineralized late-metamorphic deformation zones, Otago Schist, New Zealand. *Geochemistry: Exploration, Environment, Analysis*, v. 7 (3), p. 225-232
- Pitcairn, I.K.**, Teagle, D.A.H., Craw, D., Olivo, G.R., Kerrich, R., Brewer, T.S. (2006) Sources of metals in orogenic gold deposits: insights from the Otago and Alpine Schists, New Zealand. *Economic Geology*, v. 101, p. 1525-1546
- Pitcairn, I.K.**, Warwick, P.E., Milton, J.A., Teagle, D.A.H. (2006) A method for ultra-low level analysis of gold in rocks: *Analytical Chemistry*, v. 78 (4), p. 1280-1285
- Pitcairn, I.K.**, Teagle, D.A.H., Kerrich, R., Craw, D., Brewer, T.S. (2005) The behaviour of Nitrogen and Nitrogen isotopes during metamorphism and mineralization: Evidence from the Otago and Alpine Schists, New Zealand: *EPSL*, v. 233, p. 229-246
- Pitcairn, I.K.**, Roberts, S., Teagle, D.A.H., Craw, D. (2005) Detecting hydrothermal graphite deposition during metamorphism and gold mineralization: *Journal of the Geological Society*, v. 162(3), p. 429-432

## 2. Peer-reviewed conference contributions (selected – 2014-2017)

Pitcairn, IK, Leventis, NG, Beaudoin, G, Dubé B (2017) A metasedimentary source of gold in the Abitibi belt? Proceedings of the 14<sup>th</sup> Biennial SGA meeting, Quebec, 20-23 August Volume 1, 91-94

Patten, CGC, Markdahl, K, Pitcairn IK, Alt, JC, Zack, T, Lehay, Y (2017) Gold-rich mineralisation in fore-arc setting at ODP site 786B: evaluation of magmatic input into oceanic crust hydrothermal system. Proceedings of the 14<sup>th</sup> Biennial SGA meeting, Quebec, 20-23 August Volume 1, 83-86

Hamisi, J, Pitcairn, IK, MacKenzie, D, Craw, D, Blakemore, H (2017) The hydrothermal footprint around the Reefton orogenic gold deposit, New Zealand. Proceedings of the 14<sup>th</sup> Biennial SGA meeting, Quebec, 20-23 August Volume 3, 1131-1134

Pitcairn, I.K. (2015) Source area gold enrichment and the formation of orogenic gold deposits. Mineral Resources in a sustainable world: Proceedings of the 13<sup>th</sup> Biennial SGA meeting, Nancy, 24-27 August. Volume 2, 619-622

Patten, C. Pitcairn, I.K. (2015) Mobility of Au and related elements during the hydrothermal alteration of the oceanic crust: implications for the sources of metals in VMS deposits. Mineral Resources in a sustainable world: Proceedings of the 13<sup>th</sup> Biennial SGA meeting, Nancy, 24-27 August. Volume 5, 2075-2078

Hofmann, A., Pitcairn I.K., Wilson, A. (2015) Evaluation of gold mobility during Palaeoarchean seafloor alteration. Mineral Resources in a sustainable world: Proceedings of the 13<sup>th</sup> Biennial SGA meeting, Nancy, 24-27 August. Volume 1, 109-112

Pitcairn, I.K., Boskabadi, A., Broman, C., Boyce, A., Teagle, D., Cooper, M., Azer, M., Mohamed, F., Stern, R. (2014) "Regional carbonate alteration in the eastern desert of Egypt: fluid sources and implications for formation of gold deposits" 38<sup>th</sup> AGM of the Mineral Deposits Studies Group, The University of Southampton, 17-19 December 2014

Klein, B., Skelton, A., Huet, B. and Pitcairn, I.K. (2014) Preservation of blueschist facies minerals along a shear zone by coupled metasomatism and fast flowing CO<sub>2</sub> bearing fluids. AGU 2014