

Scott Angus MacLennan

Graduate Student

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Education

- Expected 2019* **Princeton University**, Princeton, NJ
Ph.D., Geosciences
Thesis: *High Precision time constraints from the Mesoproterozoic Pilbara craton in Australia and Neoproterozoic Tambien Group in northern Ethiopia*
Advisors: Blair Schoene and Adam Maloof
- 2015* **Princeton University**, Princeton, NJ
M.A., Geosciences
- 2012* **University of Cape Town**, Cape Town, South Africa
M.Sc. Geology
Thesis: *Structural, Geophysical and Geochemical characterization of a Mesoproterozoic Paleosuture zone, Barberton Greenstone Belt, South Africa*
Advisors: Maarten de Wit, Ute Weckmann, Erik Spangenberg, Oliver Ritter and Moctar Doucoure
- 2008* **University of Cape Town**, Cape Town, South Africa
B.Sc. (Hons) Geology
Thesis: *Geology of the Kaaimansgat Inlier, Western Cape*
Advisors: Christie Rowe and Maarten de Wit

Scientific Publications

1. Eddy, MP, Ibaez-Mejia, M, Burgess, SD, Coble, MA, Cordani, UG, DesOrmeau, JW, Gehrels, GE, Li, X, **MacLennan, S**, Pecha, M, Sato, K, Schoene, B, Valenica, VA, Vervoort, JD, and Wang, T(In Press), GHR1 - a new Eocene natural reference material for in situ U-Pb Geochronology and Hf isotopic analysis of zircon. *Geostandards and Geoanalytical Research*
2. Victor Guevara, **Scott MacLennan**, Mark Caddick, Blair Schoene, Besim Dragovic, Andrew Kylander-Clark, Chris Coueslan (Submitted), Timescales of Archean ultrahigh-temperature metamorphism: integration of high-spatial and high- temporal resolution U-Pb petrochronology. *Journal of Petrology*
3. **Scott MacLennan**, Yuem Park, Nicholas Swanson-Hysell, Adam Maloof, Blair Schoene, Mulubrhan Gebreslassie, Eliel Antilla, Tadele Tesema, Mulugeta Alene, and Bereket Haileab (2018), The arc of the Snowball: U-Pb dates constrain the Islay anomaly and the initiation of the Sturtian glaciation. *Geology*,46(6), pp.539-542
4. Maarten de Wit, Harald Furnes, **Scott MacLennan**, Moctar Doucour, Blair Schoene, Ute Weckmann, Uma Martinez, Sam Bowring (2018), Paleoproterozoic bedrock lithologies across the Makhonjwa Mountains of South Africa and Swaziland linked to geochemical, magnetic and tectonic data reveal early plate tectonic genes flanking subduction margins. *Geoscience Frontiers.*, 9(3), pp.603-665.
5. Rowe, Christie D., Nils R. Backeberg, Tamsyn van Rensburg, **Scott A. MacLennan**, Carly Faber, Catherine Curtis, and Pia A. Viglietti (2010), Structural geology of Robben Island: Implications for the tectonic environment of Saldanian deformation. *South African Journal of Geology.*, 113(13), pp.57-72.

Teaching and Mentoring Experience

I was a teaching assistant for two classes at Princeton University. The mineralogy class gave students an introduction into symmetry, crystal structures, crystal chemistry and mineral identification in hand sample. The Natural Disasters class was aimed at non-majors and covered the fundamental observations that support plate tectonics, seismic and volcanic hazards and walked students through the greenhouse effect and the possible effects of climate change.

2018	Thesis co-advisor	Mentored undergraduate student thesis on using Al concentration in hornblende to constrain emplacement depth of Mesoarchean granitoids
2016	Teaching Assistant	GEO 378: Mineralogy Responsible for creating and grading labs
2015	Teaching Assistant	GEO 103: Natural Disasters Responsible for a lab group
2014	Teaching Assistant	GEO 103: Natural Disasters Responsible for grading examinations
2014	Teaching Assistant	GEO 378: Mineralogy Responsible for creating and grading labs

Conference Abstracts

- 2018 **Scott MacLennan**, Blair Schoene., U-Pb age constraints and chemostratigraphy from the pre-Sturtian Tambien group, Ethiopia: *North East Geobiology Symposium*, Oral Presentation.
- 2017 **Scott MacLennan** and Blair Schoene., Using U-Pb apatite thermochronology to track the structural evolution of granitoid-orthogneiss domes from the Archean Pilbara craton: *American Geophysical Union Fall Meeting*, Oral Presentation.
- 2016 **Scott MacLennan** and Blair Schoene., New apatite U-Pb thermochronological constraints on the development of granite-gneiss domes in the Mesoarchean eastern Pilbara craton *35th International Geological congress*, Oral Presentation.
- 2016 **Scott MacLennan**, Yuem Park, Adam Maloof, Nick Swanson Hysell, Blair Schoene, Elliel Antilla, Tadele Tasema, Mulubrhan Gebreslassie, Mulugeta Alene, Berekat Haileab ., New geochronological constraints on the upper Tambien Basin, northern Ethiopia, reveal that it records a continuous record of paleoenvironmental conditions leading into the Sturtian glaciation: *North East Geobiology Symposium*, Poster Presentation.
- 2015 **Scott MacLennan** and Blair Schoene., Thermal and Temporal Constraints on the Development of Dome and Keel Structures in the Eastern Pilbara Craton Using U-Pb Thermochronology: *American Geophysical Union Fall Meeting*, Oral Presentation.
- 2011 **Scott MacLennan**, Ute Weckmann, Eric Spangenberg, Oliver Ritter and Maarten de Wit., Electrical conductivity of rocks from the Barberton Greenstone Belt, South Africa, using Impedance Spectroscopy: *German Geophysical Society*, Poster Presentation.
- 2010 **Scott MacLennan**, Ute Weckmann, Eric Spangenberg, Oliver Ritter and Maarten de wit., Geophysical and Structural transect across an Archean suture zone: *Inkaba yeAfrica*, Poster Presentation.

Field Experience

2018	Southwest Virginia, USA [1 week]	<i>Exploratory geochronological sampling in Neoproterozoic diamictite in a Laurentian rift sequence</i>
2015, 2017	Northern Ethiopia [4 Months]	<i>Sample collection, field mapping and sedimentological characterization of a complete pre-Sturtian succession</i>
2016	Death Valley, Nevada, USA [2 weeks]	<i>Exploratory geochronological sampling around sediments that record the Sharam carbon isotope excursion</i>
2013, 2014	Northwest Australia [4 Months]	<i>Sample collection and structural analysis across Mesoarchean granite-gneiss domes and supracrustal successions</i>
2010, 2011	Central Zambia [16 Months]	<i>Field mapping, soil sampling, core logging and sampling in a hydrothermal base metal deposit</i>
2009, 2010	Barberton Greenstone Belt [3 Months]	<i>Field mapping and structural analysis in a metasomatized ultramafic complex, as well as facilitating a magnetotelluric geophysical data acquisition campaign</i>
2008	Western Cape, South Africa [1 Month]	<i>Field mapping of a Neoproterozoic structural window within the Cape Fold Belt</i>

Professional Experience

Jan 2012 - June 2013 The MSA Group, Johannesburg, South Africa
Field Geologist: Responsible for core logging, geological mapping, sediment and rock chip sampling, data entry and progress updates for clients.

Awards and Honors

2017 Arnold Guyot Teaching Award

Press Coverage

2018 Science Magazine: "Ancient Earth froze over in a geologic instant"
<http://www.sciencemag.org/news/2018/06/ancient-earth-froze-over-geologic-instantly>