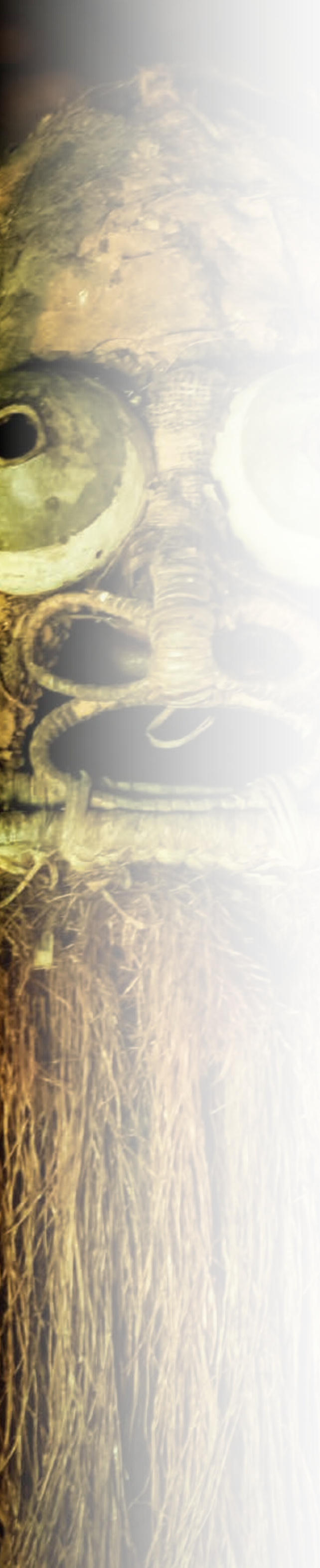


PAPUA NEW GUINEA GEOSCIENCE NETWORK

November 2018

Welcome to the Papua New Guinea Geoscience Network Newsletter! This is the first newsletter of what I hope will be an enduring and self-sustaining initiative.

Although only a few months old, the Papua New Guinea Geoscience Network is off to a strong start with representation from almost thirty individuals and fifteen institutions and companies across the website profiles and LinkedIn platform. This illustrates the interest in Papua New Guinea among the geoscience community and provides a solid platform from which to grow the network into a regionally significant entity. Indeed, we are already seeing signs that the network is promoting communication and collaboration, to provide an example, the simple awareness of the diverse range of people through the network website helped facilitate contact and encourage sharing of hard to find material from past work in the region. Thanks to Juergen and David for sharing this example!

Recent and upcoming activities from the Papua New Guinea Geoscience Network have been directed at promoting awareness of the network itself. The recent AGCC conference in Adelaide was a fantastic opportunity to connect with people interested in PNG geoscience and highlighted the scope for an initiative such as this with a great response to the network launch. The network will also be represented at the upcoming Papua New Guinea Mining and Petroleum Investment Conference in Sydney where we will focus on engaging and fostering industry participation and collaboration.

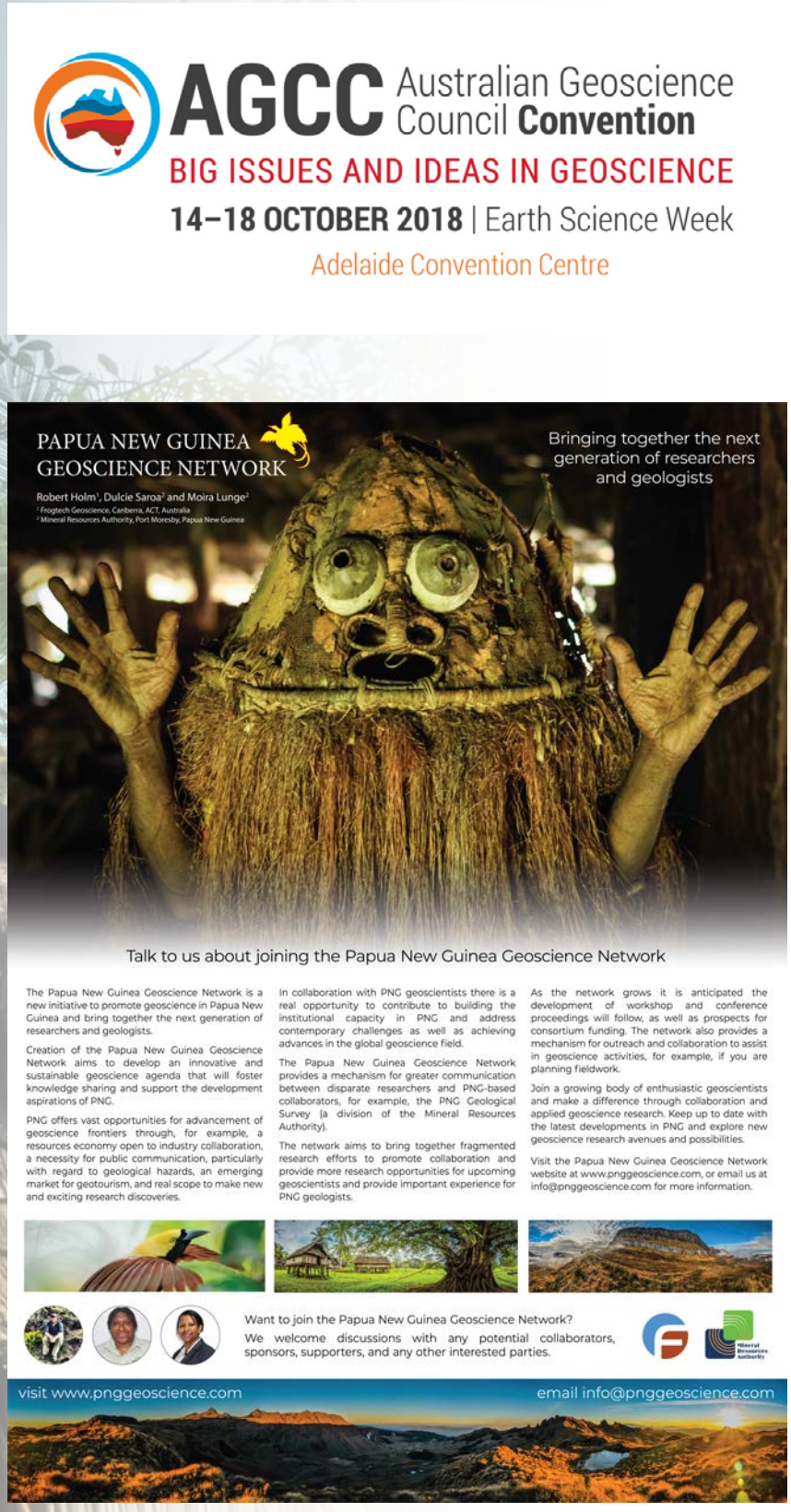
Within the network we know that PNG offers enormous opportunities for advancement of geoscience frontiers with real scope for significant collaboration between all branches of the geosciences community. In collaboration with PNG geoscientists there is a real opportunity to contribute to building the institutional capacity in PNG and address contemporary challenges as well as achieving advances in the global geoscience field. As the network develops, the associated website (www.pnggeoscience.com), this newsletter and the associated LinkedIn group will serve as outlets to update everyone on the goings on and up-to-date news. Please promote these within your circles to encourage organic outreach and help to build a strong platform from which to further grow the network.

The progress so far in establishing the Papua New Guinea Geoscience Network represents a major step forward in developing sustainable geoscience within PNG with support from international collaboration and capacity-building support. From my personal perspective, to reach the next step and develop a truly sustainable geosciences community in PNG it is essential to build the institutional capacity within the country through enthusiastic and qualified leaders. To take the crucial next step in building the network will require foundation funding to support administration and promotion of the network. Initial funding will also be required to create opportunities for collaboration and capacity-building exercises for PNG-based geoscientists, whether these are formal postgraduate training or increased exposure to different avenues of geoscience through collaboration, workshops and field work.

Please send through any contributions for future updates. This could include, for example, new publications, any events such as conferences or field work, new students, or any project updates and short articles. Send any contributions and suggestions to info@pnggeoscience.com.

Rob Holm

Introducing the PNG Geoscience Network @ AGCC



Click the poster to view full-size on ResearchGate

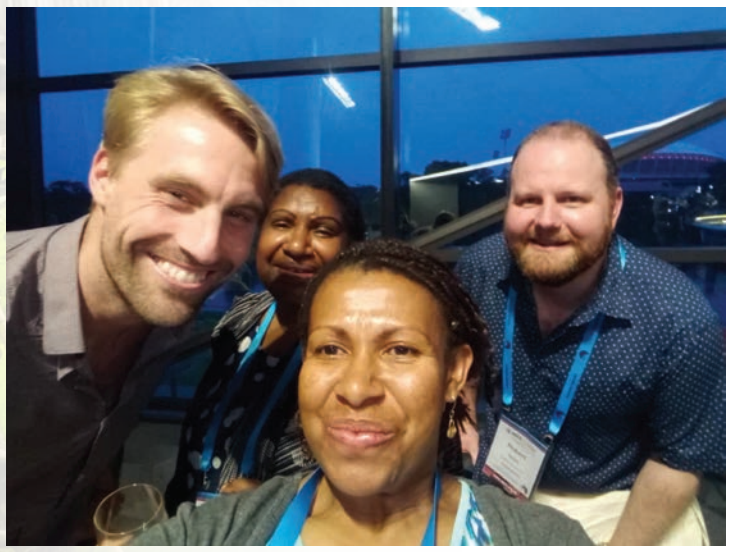
The Australian Geoscience Council Convention (AGCC) in Adelaide represented the launch event for the Papua New Guinea Geoscience Network. Throughout the conference there was great enthusiasm and interest in the development of the network, which resulted in a number of new members and support for the network. Discussions throughout the conference also resulted in a number of new ideas for potential projects and future collaborations.

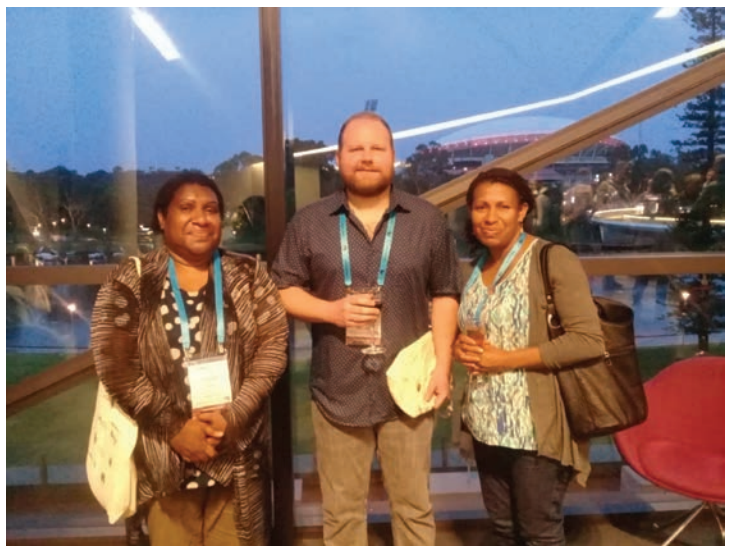
Rob Holm, Dulcie Saroa and Moira Lunge presented a poster entitled "Introducing the Papua New Guinea Geoscience Network" outlining the network initative. If you click on the poster to the left, a link will take you to ResearchGate where a full-size version of the poster is available to view.

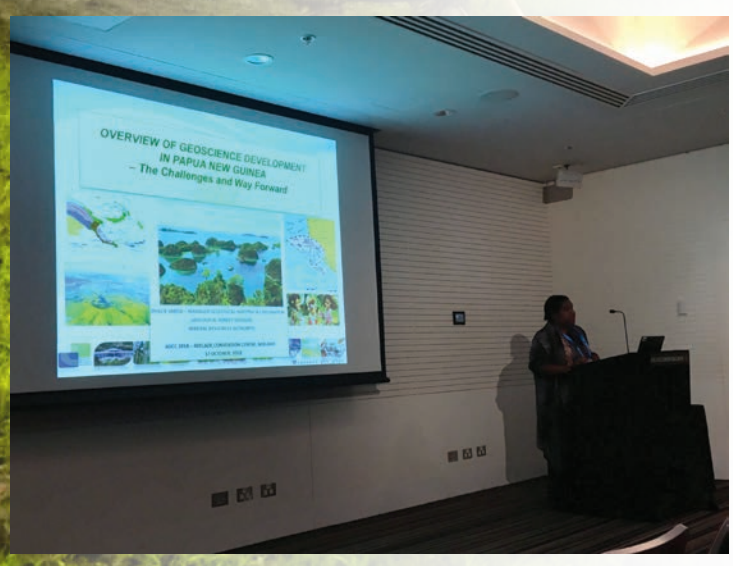
Dulcie Saroa presented a talk, "Overview of geoscience development in Papua New Guinea - The challenges and way forward". In this talk Dulcie discussed the geoscience sector at present and proposed a vision for the future growth of integrated and sustainable geosciences.

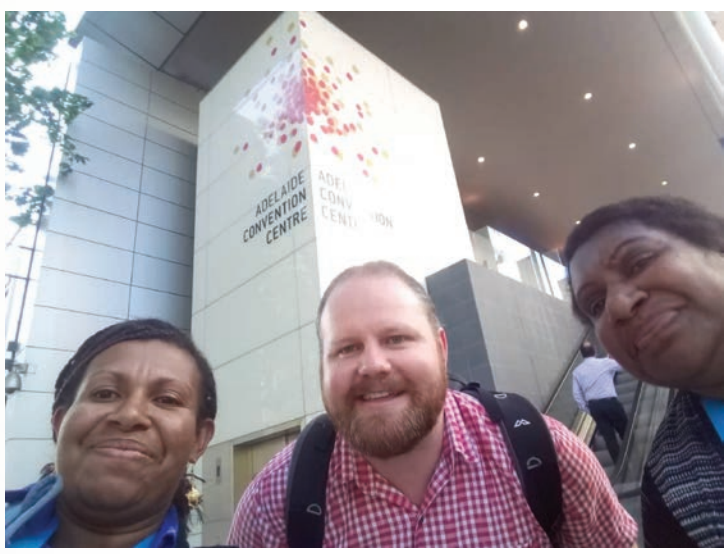
Rob Holm gave a talk on new research in collaboration with the MRA and presented the unexpected discovery of extensive inherited zircons in volcanics, which constrain the formation of much of Papua New Guinea far to the southeast along the eastern margin of the Australian continent, not to the north of Australia as currently inferred.

Moira Lunge also presented a poster on geotourism developments in Papua New Guinea, "Linking northern Australia to Papua New Guinea's southern coast through geotourism". Moira's poster introduced an initial collaborative geotourism project for PNG's coastal village of Boera, just outside of Port Moresby.



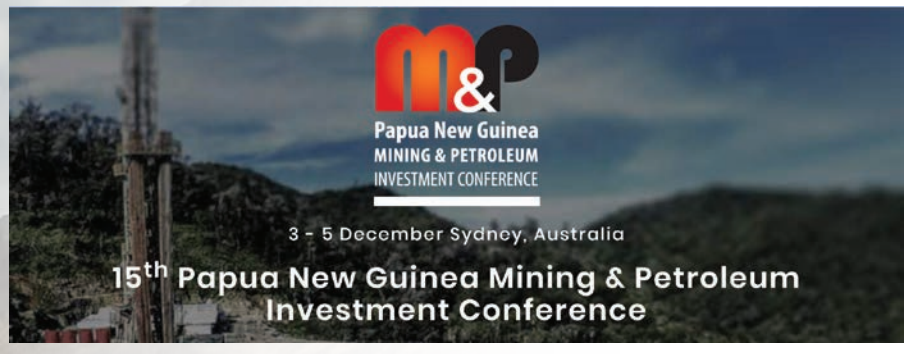






Upcoming Events

15th Papua New Guinea Mining and Petroleum Investment Conference, 3-5 December, Sydney



The Papua New Guinea Geoscience Network will have strong representation at the upcoming Papua New Guinea Mining and Petroleum Investment Conference in Sydney. Dulcie Saroa and Benny Poke are attending from the PNG Geological Survey (MRA) and will be promoting the network throughout the conference. Rob Holm will also be attending from Frogtech Geoscience. This will be a fantastic opportunity to promote the network to potential industry partners to gain awareness and support.

New Publications

Tectonic evolution and copper-gold metallogenesis of the Papua New Guinea and Solomon Islands Region

Robert J. Holm, Simon Tapster, Hielke A. Jelsma, Gideon Rosenbaum and Darren F. Mark

Published in Ore Geology Reviews, volume 104 (2019), 208-226.

Click **HERE** to follow a link to a free download of the paper (link is active until 4 January 2019)

Abstract: Papua New Guinea and the Solomon Islands are in one of the most prospective regions for intrusion-related mineral deposits. However, because of the tectonic complexity of the region and the lack of comprehensive regional geological datasets, the link between mineralization and the regional-scale geodynamic framework has not been understood. Here we present a new model for the metallogenesis of the region based on a synthesis of recent studies on the petrogenesis of magmatic arcs and the history of subduction zones throughout the region, combined with the spatio-temporal distribution of intrusion-related mineral deposits, and six new deposit ages. Convergence at the Pacific-Australia plate boundary was accommodated, from at least 45 Ma, by subduction at the Melanesian trench, with related Melanesian arc magmatism. The arrival of the Ontong Java Plateau at the trench at ca. 26 Ma resulted in cessation of subduction, immediately followed by formation of Cu-Au porphyry-epithermal deposits (at 24–20 Ma) throughout the Melanesian arc. Late Oligocene to early Miocene tectonic reorganization led to initiation of subduction at the Pocklington trough, and onset of magmatism in the Maramuni arc. The arrival of the Australian continent at the Pocklington trough by 12 Ma resulted in continental collision and ore deposit formation (from 12 to 6 Ma). This is represented by Cu-Au porphyry deposits in the New Guinea Orogen, and epithermal Au systems in the Papuan Peninsula. From 6 Ma, crustal delamination in Papua New Guinea, related to the prior Pocklington trough subduction resulted in adiabatic mantle melting with emplacement of diverse Cu and Au porphyry and epithermal deposits within the Papuan Fold and Thrust Belt and Papuan Peninsula from 6 Ma to the present day. Subduction at the New Britain and San Cristobal trenches from ca. 10 Ma resulted in an escalation in tectonic complexity and the onset of microplate tectonics in eastern Papua New Guinea and the Solomon Islands. This is reflected in the formation of diverse and discrete geodynamic settings for mineralization within the recent to modern arc setting, primarily related to upper plate shortening and extension and the spatial relationship to structures within the subducting slab.