



Australia and New Zealand form the Australia-New Zealand IODP Consortium (ANZIC), and the two countries have access to all IODP activities. This bulletin provides current news, job opportunities, scholarships and events relating to both national and international scientific communities.

**Wishing all our members and supporters a
MERRY CHRISTMAS
AND A HAPPY NEW YEAR.**

**Regards
Neville and Catherine**



News from the ANZIC Office

We wish all our supporters a very happy Christmas and New Year, and look forward ourselves to a really exciting 2017.

This last year was an exceptionally good one for ANZIC, with two *JOIDES Resolution* expeditions carried out in our region, and another six scheduled for 2017 and 2018 (see list below). We have lots of co-chief scientists and lots of participants in expeditions, and the scientific reward will be huge. Since 2008, when we joined IODP, we have had participants on all expeditions, and co-chief scientists on two. We have had 59 scientists on science parties, plus three publicity officers. Of the scientific participants 54% were senior scientists and 46% were early career scientists; doctoral students made up 23% of the participants. These numbers are very pleasing. Most of the participants had substantial sums of post-cruise funding for analytical work, and good numbers of high-quality papers with ANZIC authors or co-authors have resulted.

In 2016, nine ANZIC scientists and one publicity officer went to sea, and we supported 32 other scientists, in nine groups, with special analytical post-cruise funding to work on legacy material. We also supported two highly successful Masterclasses for forty students in all, one run in Perth by CSIRO, Curtin University and UWA, and the other in New Zealand by GNS Science and Otago University. Most of the students were carefully selected and outstanding second year science students, but some were more advanced. The New Zealand Masterclass is covered in more detail below.

ANZIC Governing Council met at ANU on 30 November. Geoff Garrett is stepping down as ANZIC Chair in mid-December and he will be missed for his dynamic leadership but, he is being replaced by marine biologist Ian Poiner, an equally dynamic leader of Australian science, who was CEO of AIMS and holds a number of important positions in marine science in Australia. The meeting was important in that it approved a fairly generous budget for 2017, aiming to hold ANZIC science support at present levels, depending on the \$US exchange rate. Council is delighted by the unprecedented level of activity in our region as shown on page 3.

The *JOIDES Resolution* Mariana Convergent Margin Expedition 366 (December 8 to February 7) is investigating the geochemistry, tectonics and biology in an active subduction zone by coring the summits and flanks of serpentinite mud volcanoes on the forearc of the Mariana system, a non-accretionary convergent plate margin. Re-entry cones will be installed in cased boreholes at three sites to provide infrastructure for future installation of long-term borehole monitoring systems; the borehole observatory CORK in Hole 1200C will be retrieved. The sediment, rock, and fluid samples obtained during this expedition will be used to understand mass transport and geochemical cycling, track the spatio-temporal variability of subduction-related fluids and water-rock interactions, and study how physical properties and dehydration might control seismicity in non-accretionary convergent forearc systems. Biological activity at mud volcanoes will also be studied. Emanuelle Frery (CSIRO sedimentologist) is aboard.

The *JOIDES Resolution* Western Pacific Warm Pool Expedition 363 has just ended and is very important to our understanding of changes in global climate on all scales (e.g. El Niño – La Niña). It was joined by scientists Brad Opdyke (ANU sedimentologist) and Jennifer Wurtzel (ANU petrophysicist). In addition, we had a teacher, Katie Halder (Canning College, Perth), aboard in a public relations role. All reports from the expedition are exceedingly positive, all objectives were met, and we await many highly significant scientific publications.

Plans for the Australasian IODP Planning Workshop to be held at Sydney University from June 13 to June 16, 2017 are well advanced. This will be a major regional workshop (SW Pacific, Southern and eastern Indian Oceans) like the earlier, highly successful, Indian Ocean and Southwest Pacific Ocean workshops. The workshop will cover all platform possibilities, but our main aim will be to start the process of writing good proposals to attract *JOIDES Resolution* back into our region around 2022. We are now seeking funding from the major potential sources.

The ANZIC Marine Geoscience Masterclass, for 20 outstanding second year students, was held in New Zealand from 1-11 December. It involved lectures and practical work, including land fieldwork in the Wairarapa east of Wellington, and marine fieldwork on the Research Vessel *Polaris II* in Doubtful Sound. The feedback from those running the course was that the highly motivated students were a delight to work with. The general feedback from the students was that it was a wonderful experience, with some saying it would change their academic choices, and some suggesting that it should be longer in future. New Zealand will be hosting the next two annual Masterclasses and the organisers are thinking about extending them somewhat. All those involved in running the masterclass, from GNS Science and Otago University, are to be congratulated on the success and thanked for their contributions.



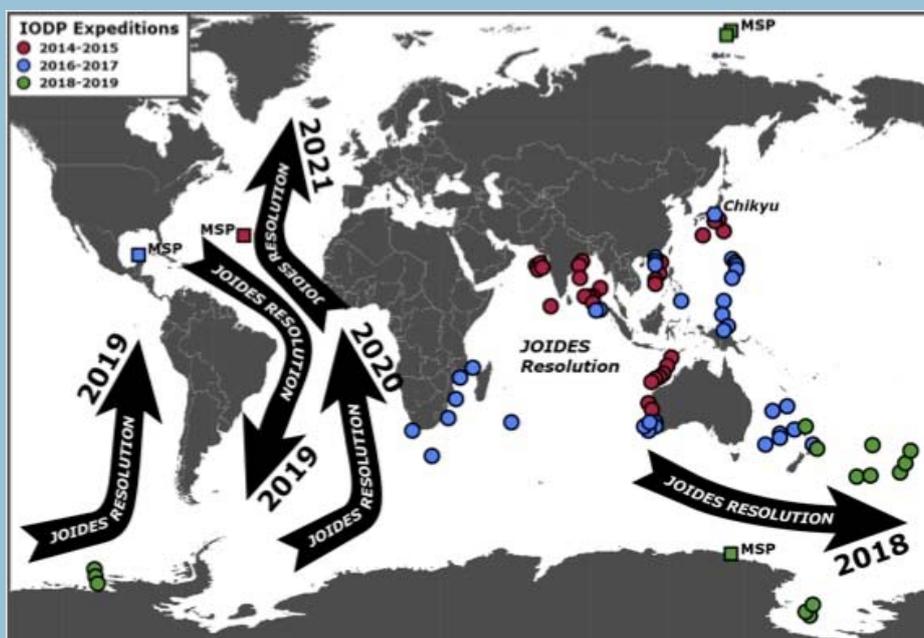
ANZIC Masterclass Crew, 2016

Neville Exon and Catherine Beasley

Forthcoming IODP expeditions in our region from mid-2017

- Expedition 371 (Tasman Frontier Subduction, Lord Howe Rise, Co-chief Rupert Sutherland, (VUW): July 27 to September 26, 2017. Wanda Stratford (GNS) was appointed as a physical property specialist and we expect appointments of another three ANZIC Scientists soon.
- Expedition 369 (Australia Cretaceous Climate and Tectonics, Naturaliste Plateau): September 26 to November 26, 2017. Lloyd White (Wollongong) was appointed as a sedimentologist and we expect appointments of another two ANZIC Scientists soon.
- Expedition 372 (Creeping Gas Hydrate Slides & Hikurangi margin LWD, Co-chiefs Ingo Pecher, Auckland) and Phil Barnes, NIWA): November 26, 2017 to January 4, 2018. Several other ANZIC scientists are being considered by the organisers.
- Expedition 373 (Alternative platform Antarctic Cenozoic Paleoclimate, George V Land and Adélie Land shelf sediments) has been deferred until 2019-20.
- Expedition 374 (West Antarctic Ice Sheet Climate, Ross Sea, Co-chief Rob McKay, VUW): January 4 to March 8, 2018. ANZIC rankings are with the organisers.
- Expedition 375 (Hikurangi subduction margin, Co-chief Laura Wallace, GNS): March 8 to May 5, 2018. ANZIC rankings are with the organisers.
- Expedition 376 (Brothers Arc Flux, north of New Zealand, May 5 to July 5, 2018). Cornel de Ronde (GNS) has just been appointed co-chief scientist. Applications should be called for soon.
- Expedition 378 (South Pacific Paleogene): October 14 to December 14, 2018
- Expedition 379 (Amundsen Sea Ice Sheet History) January 18 to March 20, 2019

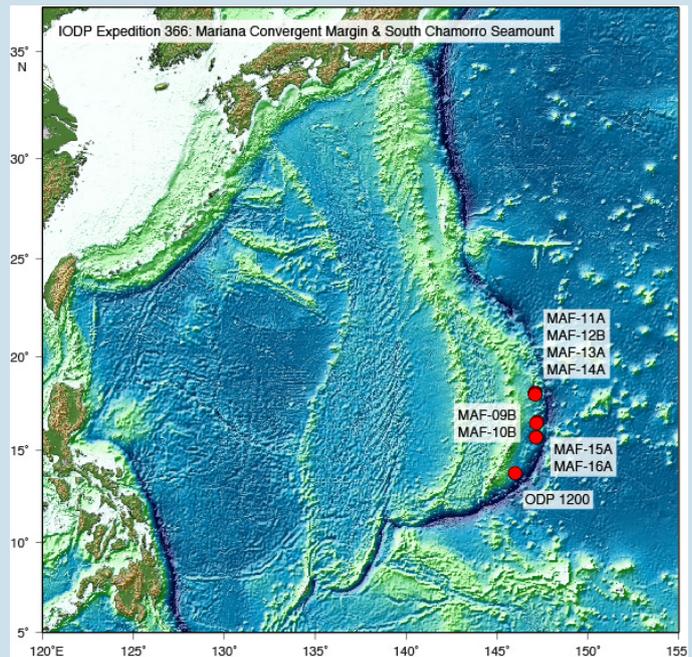
All the applicants for expeditions will be informed by Neville Exon of where they stand once that information is available. Our successful applicants will be informed by JRSO.



AT SEA

Expedition 366: Mariana Convergent Margin

The IODP Mariana Convergent Margin Expedition (based on IODP proposals 505-Full5 and 693-APL) will investigate geochemical, tectonic, and biological processes at intermediate depths of an active subduction zone. This expedition will core the summits and flanks of serpentinite mud volcanoes on the forearc of the Mariana system, a non-accretionary convergent plate margin in the western Pacific. In addition, a reentry cone and casing system will be installed at three of these sites to provide the infrastructure for post-cruise installation of long-term monitoring; the existing Hole 1200C borehole observatory (CORK) will also be removed.



Sediments, rocks, and fluids recovered during this expedition will be used to (1) to understand mass transport and geochemical cycling in subduction zones of non-accretionary forearcs at convergent margins; (2) to ascertain spatial and temporal variability of slab-related fluids in the forearc environment to trace dehydration, carbonate dissolution, and water/rock reactions in the subduction zone; (3) to understand physical properties of the subduction zone as controls over dehydration reactions and seismicity; (4) to study spatial and temporal variability in metamorphic and tectonic processes and the history of these processes in non-accretionary forearc regions; and (5) to investigate controls over biological activity associated with these mud volcano processes.

Dr Emanuelle Frery of CSIRO has joined the science party as a core description specialist.

Follow the *JOIDES Resolution* on [Facebook](#) or <https://www.youtube.com/user/theJOIDESResolution> and read daily or weekly reports at: <http://iodp.tamu.edu/scienceops/sitesumm.html>

