



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.

For more information contact:

Website: [www.iodp.org.au](http://www.iodp.org.au)

Website: [drill.gns.cri.nz](http://drill.gns.cri.nz)

## News from the ANZIC Office

A call for applications from Australians for special funding for analytical work on legacy ocean drilling material was sent out to our e-mail list on April 22. As was the case last year, we are offering \$150,000 in a two-tiered approach, with grants of either \$20,000 or \$10,000 for work on DSDP, ODP or IODP archival material. Applications close on May 23 and grants should be made in July. For full information, see the notice below.

Further to yesterday's email, we are now accepting ANZIC applications for scientific participation in the IODP Expedition 370 "Temperature Limit of the Deep Biosphere off Muroto" this year. The drilling vessel *Chikyu* will explore the limits of seafloor life and the biosphere in the proto-thrust zone of the Nankai accretionary prism off Japan. The expedition is planned for 10 September to 10 November in 2016, including 3 days of port call. It will be accompanied by overlapping shore-based activities at Kochi Core Center (KCC), planned from 27 September to 24 November. This expedition is based on IODP Proposal 865, "Constraining the temperature limit of the microbial deep biosphere in the Nankai Trough seafloor". It should be of especial interest to microbiologists, geochemists and biogeochemists, who may not be on our mailing lists, but we ask our members to circulate the email or the short version of our call for participation, on page five, widely.

We are very grateful to CSIRO, Curtin University and the University of Western Australia for hosting the highly successful one-week ANZIC Marine Geoscience Masterclass in Perth for the last three years. The masterclass is designed for high-quality undergraduates from our partner universities (mostly second year students) to get an idea of the field at the stage when they are still deciding their future careers. A call has just gone out encouraging all our partners to consider putting in an Expression of Interest to host the Masterclass for the next three years, either individually or in local groups.

The revised *Chikyu* Proposal 871-CPP was submitted to the Proposal Data Bank by Ron Hackney of Geoscience Australia at the end of March for consideration by the Science Evaluation Panel at its late June meeting. It is entitled "First deep stratigraphic record for the Cretaceous eastern Gondwana margin: Tectonics, paleoclimate and deep life on the Lord Howe Rise high-latitude continental ribbon", and is a joint Geoscience Australia-JAMSTEC-university proposal for which we have high hopes. The JAMSTEC-Geoscience Australia seismic site survey expedition is underway now.

A single-site APL-897 was also submitted by Simon Holford of the University of Adelaide at the end of March, to follow-on from the ill-fated Great Australian Bight full Proposal 884-CPP. This is entitled "Cenomanian-Turonian OAE2 black shales in the Southern Ocean – an expression of global anoxia at high southern latitudes?" It would drill the black shale sequence dredged by Geoscience Australia some years ago, and the hope is that it will be included in the Naturaliste Plateau Expedition 369 at the end of 2017.

A new preliminary proposal “Pleistocene Paleoceanography of the Southwestern Indian sector of the Southern Ocean (PePSI-SO)” involves Giuseppe Cortese (GNS Science) and Leanne Armand (Macquarie University).

Richard Hobbs and Brian Huber, leading proponents of the Naturaliste-Mentelle Cretaceous Expedition 369, to be drilled in late 2017, are the co-chiefs for the drilling leg. They are meeting IODP at College Station with their science coordinator, Kara Bogus, in late July. There they plan to develop the preliminary documents that describe the science objectives, the drilling plan and the personnel requirement, including the Scientific Prospectus.

The Australian Earth Sciences Convention will be in Adelaide from 26 to 30 June. The very interesting IODP Session (27 & 28 June) is convened by Neville Exon and Richard Arculus. The program enables us to report to the geoscience community on the various IODP expeditions of the recent past and plans for the future. The seventeen IODP speakers are listed below. There will be also an ANZIC Booth at AESC.

The *JOIDES Resolution* South African Climates Expedition 361, with John Rolison of the University of Otago aboard as an inorganic geochemist and Luna Brentegani from QUT aboard as a nannofossil expert, arrived in Cape Town in April. It was designed to study the effects of the Agulhas Current on the southeast African margin in the last five million years. All six planned sites were very successfully cored, and the participants look forward to some exciting research.

The alternative platform Chixculub Impact Crater Expedition 364 started in the Gulf of Mexico on 12 April and is scheduled to finish on 8 June. Marco Coolen of Curtin University is aboard as an organic geochemist and is excited by the progress to date. The expedition is designed to core through the peak ring of the Chicxulub K/T boundary impact crater to investigate (1) the nature and formational mechanism of peak rings, (2) how rocks are weakened during large impacts, (3) the nature and extent of post-impact hydrothermal circulation, (4) the deep biosphere and habitability of the peak ring, and (5) the recovery of life in a sterile zone. Of additional interest is the composition and character of impact breccias, melt rocks, and peak-ring rocks; and any observations from the core that would help constrain the volume of dust and climatically active gases released into the stratosphere by this impact.

There will now be a break in the *JOIDES Resolution* schedule until the latter half of the year, when the Sumatra Seismogenic Zone Expedition 362 (August-September) and the Western Pacific Warm Pool Expedition 363 (October-November) will take place. Two Australians will be on each expedition.

The two *JOIDES Resolution* Rifted Margin Expeditions 367 & 368 to the South China Sea will take place early next year. They aim to understand the mechanisms of lithosphere extension during continental breakup at a non-volcanic rifted margin. Isabel Sauermilch (University of Tasmania) has just been accepted as our scientist on Expedition 367, and Kelsie Dadd (Macquarie University) on Expedition 368.

Neville Exon and Catherine Beasley



## IODP speakers at the Australian Earth Sciences convention on 27 and 28 June, 2016.

We are excited to offer a fantastic line-up for the IODP session at AESc. We will circulate the schedule once it is finalised and look forward to meeting many of our participants and supporters at the conference.

- **Brad Clement** (US science operations) on recent *JOIDES Resolution* Indian Ocean expeditions
- **Richard Arculus** (ANU) on inception and evolution of the Izu-Bonin-Mariana arc, as drilled by *JOIDES Resolution* in 2014
- **Bob Musgrave** (NSW Geological Survey & Sydney University) on fluids, faults and foliation in the Izu rear-arc, revealed by *JOIDES Resolution* drilling in 2014
- **Kelsie Dadd** (Macquarie University) on Miocene seamount volcanism in the South China sea, revealed by *JOIDES Resolution* drilling in 2014
- **Stephen Gallagher** (Melbourne University) on the Miocene-Pliocene record of reefs, oceans, and climate, drilled by *JOIDES Resolution* off northwest Australia in 2015
- **Chelsie Korpanty** (University of Queensland) on the ecology of Late Miocene coral assemblages from near Rowley Shoals, drilled in 2015 on the above expedition
- **Sean Johnson** (University of Tasmania) on the evolution of the Baltic Sea Basin as reflected in sulphide geochemistry, drilled from an alternative platform in 2013
- **Adriana Dutkiewicz** (University of Sydney) on the global distribution of sea floor sediments and its implications for interpreting the deep-sea sedimentary record
- **Jamie Austin** (IODP Forum chair) on IODP's future scientific ocean drilling plans
- **Gilbert Camoin** (ECORD) on new opportunities in scientific drilling
- **Neville Exon** (ANU) on ANZIC's part in IODP
- **Nadine Hallmann** (ECORD) on mission-specific drilling platform expeditions in 2014-2018
- **Irina Borissova** (Geoscience Australia) on Cretaceous tectonic and climate history on the 2017 *JOIDES Resolution* Naturaliste Plateau and Mentelle Basin Expedition in late 2017
- **Rob McKay** (Victoria University Wellington) on the forthcoming expeditions in the SW Pacific and Antarctica
- **Cornel de Ronde** (Victoria University Wellington) on future drilling of the Brothers volcano hydrothermal system by *JOIDES Resolution* north of New Zealand
- **Ron Hackney** (Geoscience Australia) on the proposed deep *Chikyu* drilling for Cretaceous tectonics and ancient life on the Lord Howe Rise
- **Saneatsu Saito** (JAMSTEC) on the early 2016 seismic profiling for that expedition.



CALL FOR APPLICATIONS, 2016

## SPECIAL FUNDING FOR AUSTRALIANS FOR ANALYTICAL WORK ON OCEAN DRILLING MATERIAL LEADING TO PUBLICATION

ANZIC Governing Council wishes to encourage our scientists to work on legacy ocean drilling material, in order to fill gaps in existing research, and increase the number and quality of ANZIC publications within the life of IODP. We offer a funding package to non-shipboard researchers to carry out analytical work on shipboard data/samples.

We are now offering a fourth round of funding. \$150,000 is on offer under a two-tiered approach. Both \$20,000 and \$10,000 grants are available, with three to four \$20,000 grants and eight to ten \$10,000 grants on offer for scientists from Australian ANZIC member institutions. The samples can come from DSDP, ODP, or IODP expeditions. IODP expeditions generally have a 12 month moratorium on samples, but scientists who are official land-based participants can apply within that period. Only analytical costs will be covered by these grants.

The broad aim of this initiative is to attract established scientists, or junior graduates taking the lead in working with established scientists, to research projects related to DSDP, ODP, or IODP, by covering basic analytical costs in order to facilitate rapid high-quality publication. The proponents would need to go through the IODP system to obtain material, and that involves writing a scientific proposal to justify obtaining it. Successful applicants are required to acknowledge funding from the Australian IODP Office and include "scientific ocean drilling" or an equivalent phrase in the title or abstract of their publications.

A simple process will be followed, with *applications* by individuals or teams expected by May 23, sent to both Neville Exon ([Neville.Exon@anu.edu.au](mailto:Neville.Exon@anu.edu.au)) and Rob McKay ([robert.mckay@vuw.ac.nz](mailto:robert.mckay@vuw.ac.nz)). The applications will be reviewed by the Program Scientist and the ANZIC Science Committee. Applicants should be informed of the outcome of their applications and the funds allocated in July 2016. Funds can be provided quickly once a suitable arrangement is agreed.

The *applications* for the projects (4 pages maximum, 12 point font) should have the following general format:

- 1) Title of research proposal for funding
- 2) Related IODP, ODP, DSDP leg number(s)
- 3) Participant's or participants' names and contact details
- 4) Brief description of project
- 5) Research plan including sampling intentions
- 6) Justification for analytical work
- 7) Publication intentions
- 8) Tabulated costing for this work
- 9) An outline of any other funding for related work
- 10) Brief and relevant CV

Short progress reports (1 page) are required 6 months and one year after funding commences. A final report (3 pages) that summarises research findings, and includes a publication list (published, in press, submitted or planned), is required within 30 months of when funding commences.

Dated 22 April 2016



## CENTER FOR DEEP EARTH EXPLORATION

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### Call for Participation in IODP Expedition 370: "T-Limit of the Deep Biosphere off Muroto"

We are now accepting ANZIC applications from our member institutions for scientific participation in the IODP Expedition 370 "Temperature Limit of the Deep Biosphere off Muroto" (T-Limit). The drilling vessel *Chikyu* will explore the limits of sub-seafloor life and the biosphere in the proto-thrust zone of the Nankai accretionary prism off Japan. Expedition 370 is planned to be from 10th September to 10th November in 2016, including 3 days of port call, and accompanied by shore-based activities at Kochi Core Center (KCC).

The shipboard team will include the following specialties: microbiologists, organic and inorganic geochemists/biogeochemists, physical properties specialists, sedimentologists, structural geologists, paleontologists, paleomagnetists, petrologists and hydrogeologists. A shore-based team will gather at KCC from around 27th September to November 24 for additional, but essential, microbiological and (bio-)geochemical sub-sampling and analyses to achieve major scientific goals of the project. Applicants to join the science party of Expedition 370 are encouraged to read the summary prospectus (<http://www.jamstec.go.jp/chikyu/e/exp370/index.html>).

Expedition 370 aims (1) to study the factors that control biomass, activity and diversity of microbial communities in a subseafloor environment where temperatures increase from ~30°C to ~130°C and which thus likely encompasses the biotic-abiotic transition zone, and (2) to determine geochemical, geophysical and hydrogeological characteristics in sediments and the underlying basaltic basement and elucidate if the supply of fluids containing thermogenic and/or geogenic nutrient and energy substrates may support subseafloor microbial communities in the Nankai accretionary complex. To achieve these scientific objectives, the expedition will retrieve sediment and basalt core samples from a site near ODP Site 1174 (Leg 190 in 2000), located in the landward proto-thrust zone of the Nankai Trough accretionary prism down to ~1.2 km below seafloor (water depth: 4730 m). Because of the high heat flow, temperatures of ~103-106°C are expected at the decollement zone (870-900 m below seafloor [mbsf]) and ~133°C at the sediment-basement interface (1210 mbsf).

For ANZIC scientists all travel costs should be covered. In addition the ANZIC IODP Office may provide up to \$A40,000 for post-cruise activities (mainly analytical costs) for Australian and New Zealand university and research institution scientists and post-graduate students, if funding cannot be obtained in any other way. Applications for such funding can only be made after expeditions are completed and samples are in hand.

**The deadline for scientists to submit applications to ANZIC is Friday, 10 June, 2016.** This is an excellent opportunity for scientists, doctoral students or post docs to collaborate with an international team of scientists, either aboard or on land. Assuming we have suitable applicants, we expect to have one member of the science party, but a larger team potentially could be assembled about that person. The ANZIC Science Committee will review the applications and we will submit our list of suitable applicants to Japan by 8 July. The selected applicant should hear from Japan in August.

Australians should visit [www.iodp.org.au](http://www.iodp.org.au) for a link to the application form, a completed version of which should be sent to Neville Exon ([Neville.Exon@anu.edu.au](mailto:Neville.Exon@anu.edu.au)) and Rob McKay ([robert.mckay@vuw.ac.nz](mailto:robert.mckay@vuw.ac.nz)). New Zealanders should contact Giuseppe Cortese ([NZODP@gns.cri.nz](mailto:NZODP@gns.cri.nz)).