Issue 2, 6th February, 2013

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:
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News from the ANZIC Office

There are a number of things to report in this bulletin following a recent telephone meeting of ANZIC Governing Council:

1. Richard Arculus of ANU has completed a draft of Section C, the case outline, of the Australian bid for an ARC/LIEF grant for five years of funding for the new program of IODP, seeking funding from January 2014. This is now going to a small reading committee, and the proposal will go out to all key stakeholders and potential CIs and PIs in the latter half of February.

2. Chris Hollis of GNS Science is relatively optimistic that New Zealand will find funding to enable them to continue in ANZIC, including funding toward an annual ship position. This is very encouraging news.

3. Council has approved an official scheme of *tiered membership of ANZIC* for the next phase of IODP, which sets out the rewards for different levels of financial input. This is important as universities and government research agencies ponder their level of support for this phase. The inclusion of in-kind contributions, which are really important, was considered but regarded as too problematic. The scheme is set out below.

4. A draft *Review of Australia's participation in IODP* has been prepared by the Allen Consulting Group, with support from the ANZIC Office and elsewhere, and is under review from ANZIC Council members. The review is due to be finalized in February, and has proven to be a valuable exercise. Unsurprisingly, the case for ongoing membership is being documented as very strong.

5. The draft ANZIC Annual Report for 2012 is at a fairly advanced stage and should be available in the next month or so. It was a very good year, with nine ANZIC scientists participating in IODP expeditions.

6. An excellent new map of *Australasian Scientific Ocean Drilling: 1968-2013* has been prepared by Geoscience Australia and an A4 version is attached to this bulletin. A poster version with more information will soon be available.

7. Alan Baxter of the University of New England has written an informative report on the *Costa Rica Seismogenesis Project IODP Expedition* 344 and that is included in this bulletin.

8. Trevor Falloon of the University of Tasmania returns in mid February from the *Hess Deep Plutonic Crust Expedition* 345, in the northeast Pacific Ocean and we expect a report from him in the bulletin thereafter.

9. Four *JOIDES Resolution* Expeditions for 2014 are now calling for applicants: one expedition in the South China Sea and three in the Izu-Bonin Arc. We are assuming that we will still be members. Application information for South China Sea applicants was sent to our mailing list on 4 February. Information covering the Izu-Bonin expeditions will be sent 6 February.

Neville Exon & Catherine Beasley

Tiered Membership for ANZIC members

The aim of this system, agreed by the ANZIC Governing Council, is to clearly acknowledge those who provide more support for ANZIC in IODP, especially from October 2013 onwards. The tiering system does not take account of in-kind support (an almost impossible task) although such support is very valuable. Scientific opportunity will continue to be available to any member based solely on merit.

Background funding scenarios are set out below, but some variation could be possible with the agreement of Council

1. Input $100,000 p.a. or more
- Council Membership for all five years
- Linked logo on all ANZIC web pages
- Large logo on ANZIC publications
- Acknowledgement by name on general media releases

2. Input $40,000 p.a. or more
- Council Membership for three years in five
- Midsized logo on ANZIC publications
- Acknowledgement by name on general media releases

3. Input minimum rate of $25,000 p.a.
Council Membership for one year in five

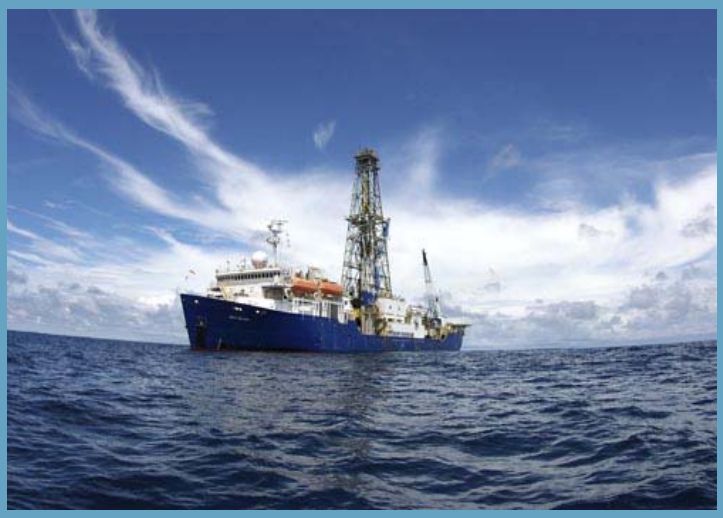
4. Potentially available to all members
- Science party involvement in IODP expeditions, on basis of individual's application quality
- Post-cruise science funding of up to $40,000 for science party participants
- Access to any other special science funding
- Funding to attend routine post-cruise meetings or important scientific meetings
- Science Committee membership
- Membership of IODP international panels and committees
- Observers at Governing Council or Science Committee meetings
- Access to funded Student Masterclasses (hosting bids, plus one student per member)
- A linked logo on the ANZIC web site members' page

AT SEA

Expedition 344: CRISP A2

Alan Baxter, University of New England

On the 23rd of October 2012, I boarded the JOIDES Resolution (JR) as a member of Expedition 344: Costa Rica Seismogenesis Project (CRISP) A2. It is part of a larger program that ultimately aims to drill into the seismogenic zone, in order to learn more about the processes that control nucleation and seismic rupture of large earthquakes at erosional subduction zones. The main objectives of CRISP A2 were to; (1) characterise the composition, texture and physical properties of the décollement zone and upper plate material; (2) assess the sediment accumulation rates and margin subsidence/uplift in slope sediments; (3) characterise the fluids and fluid pathways active within the upper plate and (4) measure the stress fields across the updip limit of the seismogenic zone. One of the reasons why this margin is so interesting to earth scientists is that it is one of the few places in the world where the seismogenic zone is within reach by current scientific drilling capabilities.



Our first glimpse of the JR was at Miraflores; one of the three locks of the Panama Canal that ships must navigate through to pass between the Atlantic and Pacific oceans. We boarded the JR on the Pacific side, at the port of Balboa and familiarized ourselves with our new surroundings and each other. The scientific party was composed of 34 scientists, from 12 countries, including two researchers from Brazil, the newest member of IODP. However, a further 90 people, including the ships crew, cooks, technicians and drillers were waiting for us on board and kept everything running smoothly for the 7 weeks that we were at sea.

The scientific party was split into 2 shifts, a midnight to noon shift and a noon to midnight shift. I was assigned to the night shift, which fortunately was closer to an Australian day shift so it was easy for me to adjust to the work schedule. Working throughout the also had the added bonus of experiencing the beautiful Costa Rican mornings as the sun rose over the Central American volcanic arc each day. A second advantage to working at night was seeing the inquisitive marine life that swarmed around the ship, including pilot whales, dolphins, tuna, mahi mahi, and squid.

I was the nannofossil biostratigrapher on the ship and my job was to constrain the age of the drilled sediments. This involved collecting samples from the core catcher; which prevents the core from falling out of the drill pipe and is housed within the drill bit. The core catcher sample is a representative of the drilled interval and provides the micropalaeontologists on shift with an immediate sample to process and study. The other scientists had to wait for 2-3 hours while the core equilibrated before it was split in two and described. Each core catcher sample that came into the micropalaeotology lab was split between the radiolarian biostratigrapher, the benthic foraminiferal workers and myself, the nannofossil biostratigrapher. I would make a smear slide of each sample, cure it under a UV bulb and bring it to a microscope so that I could identify the fossils and assign an age to that sediment. The micropalaeontologists would then discuss our findings and construct an age model for each hole.

The expedition lasted a total 47 days, with ~1.5 km of core recovered. We drilled 5 sites in total, two on the incoming plate, two on the upper plate and one at the toe of the subduction system. Our first site was to drill the sediments on the incoming Cocos Plate in order to characterize the material being introduced into the subduction system. Approximately 100 m of the sediments overlying oceanic crust were recovered. The sediments on the incoming plate were dominated by Pleistocene to Miocene calcareous and siliceous oozes. Our second location was on the upper plate at a mid-slope site, where we drilled into the forearc sediments. On the upper plate, the forearc sediments were foram and nannofossil-bearing fine-grained mud and siltstones, with occasional intercalated tephra layers. Nannofossil biostratigraphy constrained the age of these sediments to the Pleistocene. We then moved to the toe of the margin, where due to very difficult drilling conditions, we were unable to penetrate the décollement. Our fourth site was the upper slope site, where we recovered over 500 m of forearc sediments. We returned to the toe site, to try and intersect the décollement again, but once more the difficult drilling conditions scuppered our attempt. For our final site, we returned to the incoming plate, where we recovered 300 m of sediments as well as 80 m of oceanic crust, much to the relief of the petrologists on board, who had seen nothing but what they called ‘cover’ over the previous 6 weeks.

One of the most rewarding aspects of working on the JR is the collaborative working environment that developed amongst the researchers. For example, questions that arose in the micropaleontology lab about might be answered by looking at the sedimentological or physical properties could be checked in seconds by walking across the core lab and talking to the sedimentologist or physical properties expert on shift. Countless times when you called over one of the other scientists to ask a simple question, it ended up as an animated and fruitful discussion, with several people all giving their input. This aspect made the scientific work much stronger and solidified ideas and hypotheses that could then be tested.

Overall the expedition was deemed a success with lots of work to be done over the next few years. The 850 samples that were delivered to my office last week can attest to that!

2013 PRIME MINISTER'S PRIZES FOR SCIENCE
CALL FOR NOMINATIONS

THE PRIME MINISTER'S PRIZES FOR SCIENCE

Online Nominations: http://www.innovation.gov.au/scienceprizes

Closing time/date for first stage of nominations: 5.00 pm AEDT 14 March 2013

We are seeking nominations for Australia's national science and science teaching awards:

- **The $300,000 Prime Minister's Prize for Science**
- **The $50,000 Science Minister's Prize for Life Scientist of the Year**
- **The $50,000 Malcolm McIntosh Prize for Physical Scientist of the Year**
- **The $50,000 Prime Minister's Prize for Excellence in Science Teaching in Primary Schools**
- **The $50,000 Prime Minister's Prize for Excellence in Science Teaching in Secondary Schools**

Please note the following changes for the 2013 Prizes:

- **Nominations are now a two-stage process, making it easier to prepare first stage nominations.**
- **Past recipients of the Malcolm McIntosh Prize or the Science Minister's Prize are now eligible to be nominated and considered for the major prize, the Prime Minister's Prize for Science.**
- **For the Malcolm McIntosh Prize and the Science Minister's Prize, eligibility is now open to those achieving outstanding research outcomes within a ten-year full time equivalent period, including research conducted as part of studies for a Master's degree or PhD.**
- **The $50,000 cash component of each of the Science Teaching Prizes will be shared equally between the teaching prize recipient and the school in which the recipient was teaching at the time of nomination.**

Detailed information on eligibility criteria and selection information is available from:

Science Prizes Secretariat
Department of Industry, Innovation, Science, Research and Tertiary Education
PO Box 5322, KINGSTON ACT 2604
Phone: +61 2 6270 2878 or +61 2 6270 2826
Email: pmprize@innovation.gov.au

IODP INTEGRATED OCEAN DRILLING PROGRAM