



UNIVERSITY *of*
TASMANIA

Utas AILAF top tips

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Give yourself enough time [TN]

- Keep an eye on the ANZIC Bulletin - it will get advertised here
- Start early
- Keep ideas brewing at all times
- Keep a notebook of ideas
- Be alert to new developments, opportunities, collaborations, papers, techniques, etc that feed into your ideas
- Beginning early gives you time to focus on writing quality and to get feedback

Spend some time to understand IODP [TN]

- Understanding the IODP system and jargon, and what data can be used, so
 - a) See resources from today – Laurel Chrildress' powerpoint! – know the IODP datasets / systems or
 - b) much easier: to collaborate with somebody who sailed in the past! This also helps knowing the audience and it may provide some ECR their 'mentor' person.
- Find out about some good data that has not been used, and to be able to convincingly prove it in the proposal.
- Contact past expeditioners and ask them what data/cores were not analysed enough would be a great way forward. Most expeditioner would be aware of who did specific analyses, and also know what has NOT been done. This can be a great way to test specific techniques or re-analyse cores // fill gaps!
- You may need to understand the state and type of your cores if you request cores from before 1983: that's when piston coring started and also when specific physical properties were started. Before that, it is only RCB drilling. --> Check with the Core Repository/curator about the state of the core before you apply to work on the specific core (Is my analysis actually doable on those cores?)
- Think about onshore and other data sources

Understand the criteria: AILAF Objectives [JW]

The objectives of the AILAF scheme are to:

- support individuals and teams from ANZIC member institutions to conduct high quality research on the scientific drilling program's archive materials, data and data products;
- support high-quality research training;
- support scientific drilling proposals
- expand researcher engagement with scientific drilling programs and ANZIC;
- support collaboration with ANZIC members, and the broader international networks;
- provide value for money on ANZIC research funding investment; and
- enhance the scale, quality and discipline scope of research undertaken by the ANZIC research community

Assessment Criteria: Project Aims and Innovation [JW]

- Does the project address a significant problem?
- Indicators:
 - Does the project align to the objectives of the AILAF scheme?
 - Does the project align to the ANZIC science priorities?
 - Does the project background clearly articulate the problem to be addressed?
 - Does the project contain original and/or innovative elements?

Assessment Criteria: Project Feasibility and Research Environment [JW]

- Does the project design support the project's aims? Is the conceptual/theoretical framework and proposed methodology sound?
- Indicators:
 - Are the necessary facilities available to complete the Project?
 - Does the project description incorporate clear milestones and create confidence in its timely and successful completion?
 - Is the project using the right methods and enough samples to successfully complete their project?

Assessment Criteria: Project Research Outputs [JW]

- Will the project deliver high quality outputs that are significant and substantive?
- Indicators:
 - Will the project produce significant/substantive new data and/or data resources, or other significant research outputs or outreach activity?
 - Is the project likely to generate high quality research publications and/or data products that have been articulated in terms of target journal or data portal/archive, website, online forum location?
 - Are planned research publications and data products timely, consistent with the project aims and design, and represent value for money?

Assessment Criteria: Project Benefits and Impact [JW]

- Will the project produce significant benefits and impacts to ANZIC?
- Indicators:
 - Will the completed project produce substantial new knowledge, research capability, or broader benefits and who the beneficiaries will be?
 - Will the research strengthen collaboration within ANZIC and/or with international IODP/ICDP partners?
 - Will the project make a significant contribution to research training or the development of research skills/capabilities within the ANZIC community?
 - Does the project propose to pilot new research or approaches that will enable future high-quality research and/or research impact?

Assessment Criteria: Project Budget [JW]

- Is the requested budget appropriate, justified or linked to the project aims and clearly costed?
- Indicators:
 - Are all budget items consistent with the funding rules and the A\$20K or NZ\$25k limits?
 - For projects intending to analyse physical samples, are all relevant site, core and sample information, including sampling strategy provided?
 - For projects intending to analyse existing datasets, are all site and data source information and the data acquisition, processing, and storage/archiving strategies indicated?
- Note - ANZIC funds cannot be used to employ staff directly for a project (academic or technical) but can be used to cover the costs of an existing staff member to provide an analytical service. ANZIC/GeoDiscoveryNZ is not responsible for on-costs/leave/other entitlements or any other unforeseen employment conditions or levies associated with the time linked to undertaking an analytical service.

Assessment Criteria: Project Budget [JW]

- You can request:
 - analytical or professional services
 - consumables for analytical or educational work
 - sample postage freight (note samples are normally sent free of charge to your institution from the core repositories, it is your responsibility to return them if not used or if material remains)
 - access to specialist data services
 - essential software licenses for the term of the project
 - supercomputing time on national or web-based services
 - open-software, model, program development services
 - delivery of a specific training course
 - site surveys

Assessment Criteria: Project Budget [JW]

- You cannot request:
 - to employ someone to personally execute the project on your behalf
 - your own salary
 - travel
 - conference attendance/registrations
 - computers and other equipment
 - bench fees

Assessment Criteria: Project Investigator(s) [JW]

- Does the applicant(s) have the skills, experience and aptitude, time and capacity required to carry out and complete the proposed project? Or have the appropriate collaborators/supervisor to help achieve the project?
- Indicators:
 - Relative to opportunity, do the investigators provide evidence of producing high quality research outputs relative to opportunity?
 - Do the investigators have the skills and experience to undertake the proposed research?
 - Do the investigators have the time and capacity to undertake the proposed research?
 - If a student or ECR, does the applicant's project need the ANZIC Science Committee support?
- Curriculum Vitae are provided to assess applicant qualifications, current position, awards and grants, and publications. HDR students must list their primary supervisor as a partner investigator in this application and provide a letter of confirmation of support (reference) from the supervisor. NB – Principal investigator(s) must be staff or a student at an ANZIC member institution for the period of the AILAF grant.

Tell a good simple story [TN]

- With clear testable hypotheses
- Understand your audience – non specialists reviewing your proposal (scientists, but they might not be from your field)
- Be realistic in what you can achieve in the timeframe of the project (typically this has been 1 year) *and within the allocated budget*
- Could be just a specific section of a larger study, or a pilot study
- Can you include ancillary IODP data, and non-IODP data to a certain degree (40%?) if it helps address the science question

Tips and Strategies [TN]

- If you need to explain too many things, then cut the project back to a core question.
- If it isn't obvious that it will produce valuable outcomes that will enhance broader knowledge then reframe the question so that it will.
- If you run out of space, it means that the question or your explanations are too complex. Simplify, simplify, simplify (and don't cram).

Try using Nature's template [JW]

nature

How to construct a *Nature* summary paragraph

Annotated example taken from *Nature* 435, 114-118 (5 May 2005).

One or two sentences providing a **basic introduction** to the field, comprehensible to a scientist in any discipline.

Two to three sentences of **more detailed background**, comprehensible to scientists in disciplines.

One sentence clearly stating the **general problem** being addressed by this particular study.

One sentence summarising the main result (with the words "here we show" or their equivalent).

Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge.

One or two sentences to put the results into a more **general context**.

Two or three sentences to provide a **broader perspective**, readily comprehensible to a scientist in any discipline, may be included in the first paragraph if the editor considers that the accessibility of the paper is significantly enhanced by their inclusion. Under these circumstances, the length of the paragraph can be up to 300 words. (The above example is 190 words without the final section, and 250 words with it).

During cell division, mitotic spindles are assembled by microtubule-based motor proteins^{1,2}. The bipolar organization of spindles is essential for proper segregation of chromosomes, and requires plus-end-directed homotetrameric motor proteins of the widely conserved kinesin-5 (BimC) family³. Hypotheses for bipolar spindle formation include the 'push-pull mitotic muscle' model, in which kinesin-5 and opposing motor proteins act between overlapping microtubules^{4,5,6}. However, the precise roles of kinesin-5 during this process are unknown. Here we show that the vertebrate kinesin-5 Eg5 drives the sliding of microtubules depending on their relative orientation. We found in controlled *in vitro* assays that Eg5 has the remarkable capability of simultaneously moving at ~20 nm s⁻¹ towards the plus-ends of each of the two microtubules it crosslinks. For anti-parallel microtubules, this results in relative sliding at ~40 nm s⁻¹, comparable to spindle pole separation rates *in vivo*⁶. Furthermore, we found that Eg5 can tether microtubule plus-ends, suggesting an additional microtubule-binding mode for Eg5. Our results demonstrate how members of the kinesin-5 family are likely to function in mitosis, pushing apart interpolar microtubules as well as recruiting microtubules into bundles that are subsequently polarized by relative sliding. We anticipate our assay to be a starting point for more sophisticated *in vitro* models of mitotic spindles. For example, the individual and combined action of multiple mitotic motors could be tested, including minus-end-directed motors opposing Eg5 motility. Furthermore, Eg5 inhibition is a major target of anti-cancer drug development, and a well-defined and quantitative assay for motor function will be relevant for such developments.

Understand your audience [TN]

- The IODP community will review your proposal. Our community is quite varied and includes most specialties in Marine and Earth Sciences.
- The proposal needs to convince both specialist and non-specialists.
- The proposal should address a scientific question rather than tick a box for national impact.

Writing a Background section [JW]

Give the reviewer the needed information to understand the objectives and approaches in this proposal.

- Structure the background to go from broad information such as “climate has changed dramatically in the past” to specific information such as “how the deepening of the Tasman Gateway influenced the onset of glaciation in Antarctica remains controversial”.
- Build up the background towards answering a specific question that is unknown. “Did the Tasman Gateway deepen from 300 – 1000 m at ~34 Myr ago?”
- If possible, discuss preliminary data.
- Connect preliminary data to background.
- If limited preliminary data, spend time on the innovation such as using unique resources
- Do not expand background to unnecessary information that does not support the hypothesis.
- Background should not exceed one third to one half of proposal.

Writing the methods/approach [JW]

- Explain the methods used to answer each aim/research question
- Explain the method is the most relevant/adequate for the project (e.g., state-of-the-art, cheap, fast, available)
- Back up your claims, use references!
- Use Figures - often easier to use a figure than a long explanation

Budget [JW]

- Make sure you are clear on what is, and is not, allowed under the scheme
- Make it clear how the proposed spend helps you achieve your aims
 - If you say you are going to spend \$10k on Argon dating, make sure it is clear somewhere how this will achieve your stated aims/objectives
 - Don't be afraid to put in costs for all the things you need – include things like postage, lab materials etc
 - It can be a relatively broad-category budget, as long as it is justified
- Don't just ask for the full amount. Be clear on what you need
- It is useful to bring the budget early in the writing of your proposal, so you don't waste your time writing a project that is financially unfeasible.

Timeline [TN]

- Include a tentative timeline in your proposal that shows that it is achievable in the timeframe of the grant.

Collaborations

- Think about researchers you can include in your application. This can be people from your group, institute/university and other institutions in Australia or overseas
- Inclusion of ECRs is particularly encouraged

Get Feedback [TN]

- Get a reasonable draft done well ahead of the deadline so you can get **FEEDBACK FEEDBACK FEEDBACK** from as many people as possible.
- Get feedback from a diversity of readers, including some from your specialization, some from a related field, as well as family and friends
- If you have questions, you can always contact the ANZIC Office!



Questions?