MICROSCOPY AUSTRALIA

Advice to applicants for ARC & NHMRC grants

NCRIS
National Research Infrastructure for Australia
An Australian Government Initiative

micro.org.au

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Table of contents

Planning for your research

This is a guide on how to include microscopy costs into your budget proposal for ARC and NHMRC grant applications. Each project at a Microscopy Australia facility incurs costs in terms of instrument time, preparation materials and staff input. This guide will help you calculate these costs and justify your chosen technique and instrument. Our fees for academic research are subsidised to be affordable with typical Australian research grants.

About us

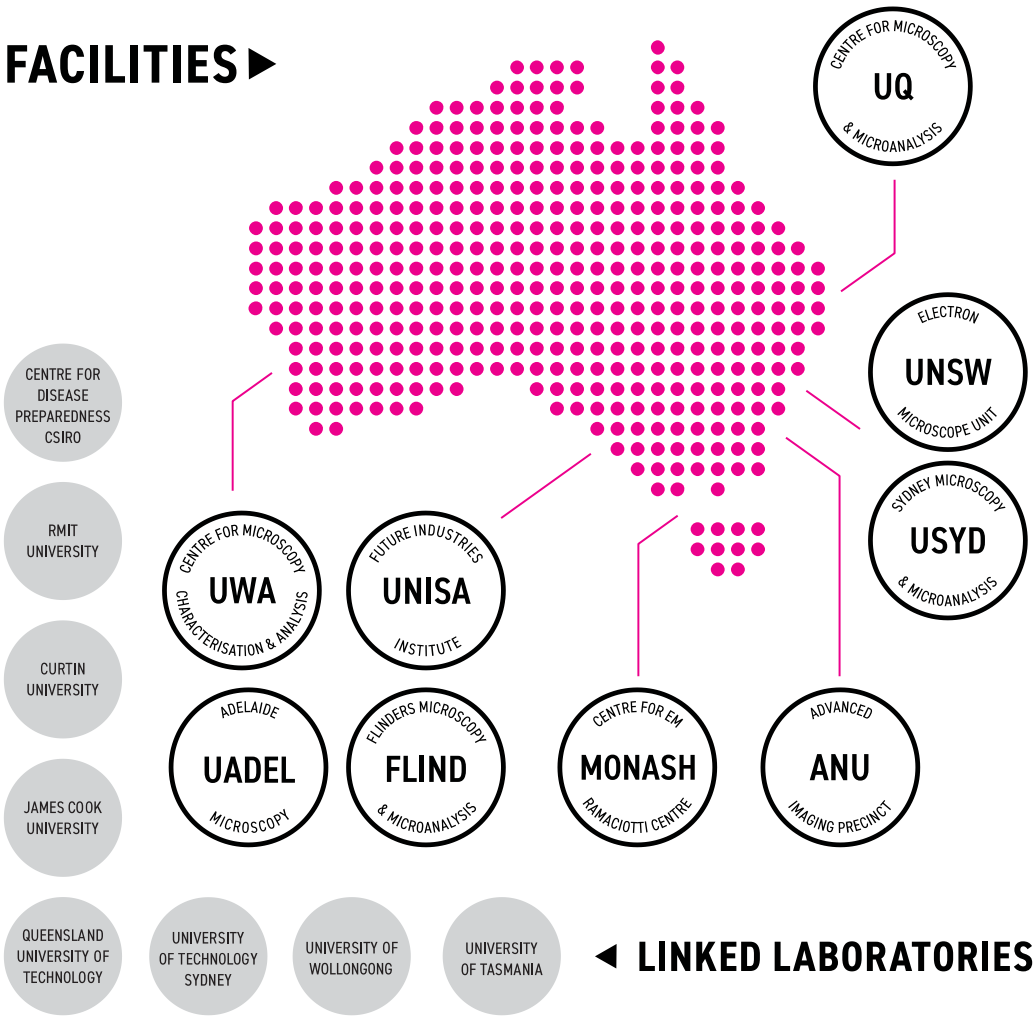
Microscopy Australia was established under the NCRIS programme to provide an affordable national network of open-access advanced microscopy and microanalysis facilities. These facilities are based at universities around Australia who have agreed to make not just the NCRIS-funded instruments, but all their instruments available to external researchers.

This enables access to a vast array of techniques from scanning, transmission and cryo- electron microscopy, to ion and spectroscopy platforms, scanned probe techniques, X-ray technologies, light and laser microscopy, specimen preparation, visualisation and simulation.

Which instrument/facility do I need?

Technique Finder™ is an online tool to help you find the right instrument and facility for your project: micro.org.au/techniquefinder

If in doubt, please contact one of our facilities with the technique you think you may need, they will be able to advise you on the best fit for your project. You can find a list of our facilities at: micro.org.au/about/contact-us/facility-directory/



Payment schemes and calculation of costs

Beamtime on instruments is charged at $30–$120 per hour. These rates are set locally and published on the website of each Microscopy Australia facility – please visit their website for details.

Our facilities have various payment schemes including subscriptions, memberships and pay-as-you-go. If the example ARC proposal below was successful, this researcher may spend the $12,600 @ $70 per hour on a pay-as-you-go basis or, alternatively, purchase an up-front subscription or membership to the relevant Microscopy Australia unit or centre.

To calculate your costs, you should estimate the time required per specimen. It is valuable to include separate estimates of time per technique when using more than one instrument. Your chosen Microscopy Australia facility will be happy to discuss your requirements. The following list shows a conservative estimate of time required per sample.

- Transmission electron microscopy: 3–20 hrs
- Scanning electron microscopy: 0.5–4 hrs
- X-ray diffraction: 1–24 hrs
- Confocal/atomic force microscopy: 3–20 hrs
- X-ray microtomography: 1–15 hrs
- Atom probe tomography: 6–12 hrs

We suggest that you calculate your costs based on your facility's hourly rates and use an amount equal to this as the matching in-kind contribution from the university. Please use your discretion as to whether you feel that using the relevant subscription rate would be beneficial to your application. If you do choose to use the subscription rate, it is best to still include the calculated hourly rate to reflect the university's in-kind contribution. Before submission, please contact the relevant facility to confirm budget details and project description.

ARC Example

Guidelines and application information for all ARC grants can be found on the Australian Government's GrantConnect website. Grant proposals to the ARC must be submitted in their online Research Management System (RMS).

Fulfilling the assessment criteria

Feasibility is one of the four assessment areas for ARC Discovery Program grants. The four feasibility criteria that Microscopy Australia can help you satisfy are:

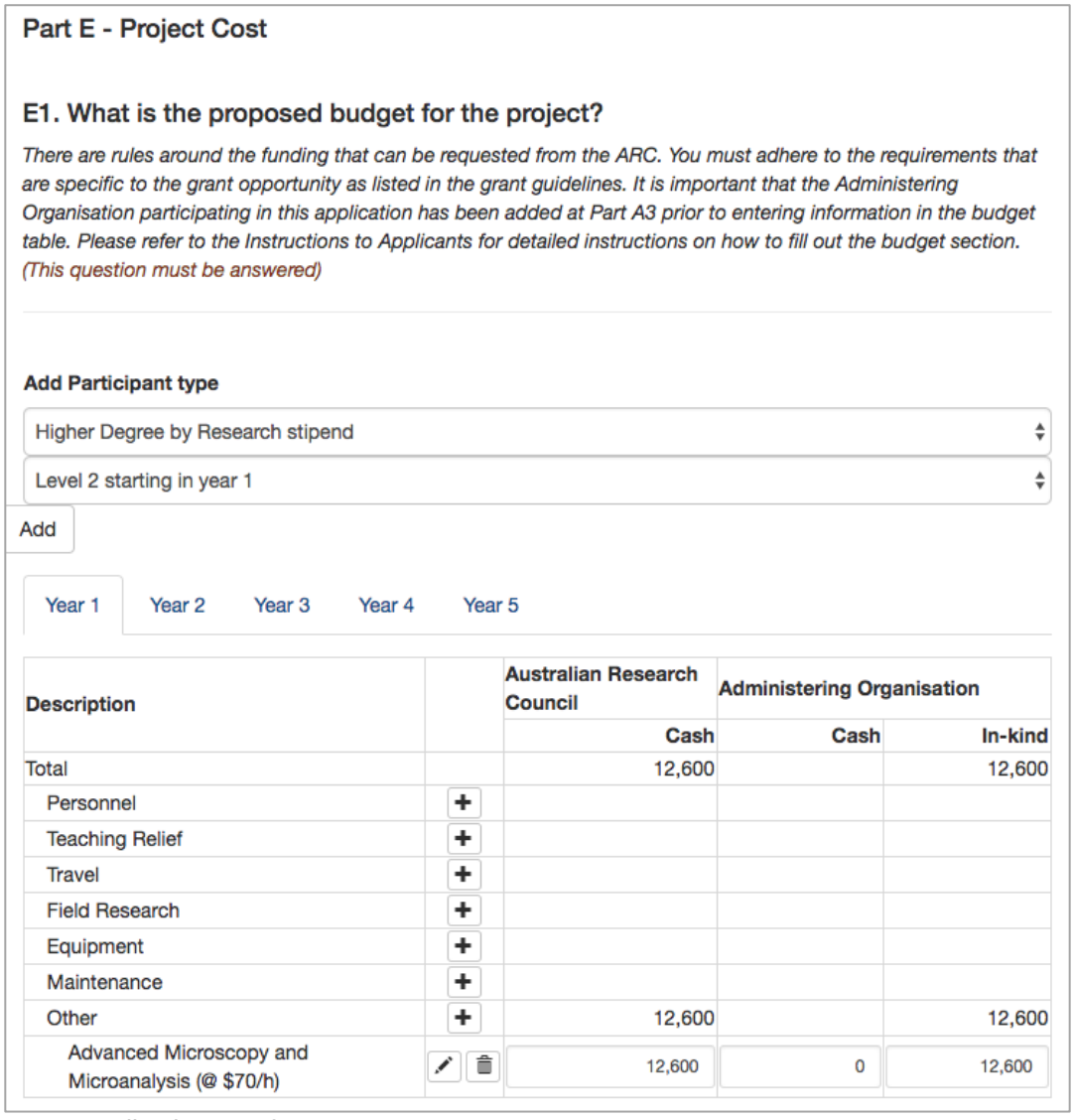
- ***cost-effectiveness of the research and its value for money***
    - Microscopy Australia, enabled by NCRIS, operates facilities at a discounted rate for academic researchers. Our open access model means that researchers can access any of these facilities around the country at the same discounted rate. This is particularly cost-effective if you need to access an instrument that is not available at your institution.
- ***suitability of the environment for the research team and their project, and for HDR students where appropriate***
    - Microscopy Australia's facilities make up part of the supportive environment needed for excellent research through dedicated platform scientists who not only provide training for researchers of all experience levels, but also provide expert advice and ongoing feedback on the applicant's research project to ensure they get the best results possible.

- ***availability of the necessary facilities to complete the project***
    - Microscopy Australia, enabled by NCRIS, provides the necessary facilities and expertise for advanced microscopy and microanalysis. Our open access model gives researchers access to the best instruments and experts for their project, regardless of their location.
- ***extent to which the project's design, participants and requested budget create confidence in the timely and successful completion of the project***
    - Microscopy Australia provides access to a national network of dedicated experts for both responsive support, and expert advice, to ensure ongoing project feasibility.

To include microscopy costs in an ARC Discovery Project application you should include them as a line item in the 'Project Costs' table (Part E, see screenshot below) under 'Other'.

Example: the project requires access to microscopy for one sample per week, at 4 hours per sample, for 45 weeks in Year 1, which works out to 180 hrs of beam time. At $70 per hour for access charges, this translates to a total cost of $12,600 for Microscopy Australia instruments for Year 1 of the project (see Step 2 below).

The host university maintains substantial infrastructure and the value of this is equivalent to the instrument usage charges. So, the same total value as the ARC column should be added to the 'AdminOrg/In-Kind' column (see Step 3 below).



Part E - Project Cost

E1. What is the proposed budget for the project?

There are rules around the funding that can be requested from the ARC. You must adhere to the requirements that are specific to the grant opportunity as listed in the grant guidelines. It is important that the Administering Organisation participating in this application has been added at Part A3 prior to entering information in the budget table. Please refer to the Instructions to Applicants for detailed instructions on how to fill out the budget section. (This question must be answered)

Add Participant type

Higher Degree by Research stipend

Level 2 starting in year 1

Add

Year 1 | Year 2 | Year 3 | Year 4 | Year 5

Description		Australian Research Council	Administering Organisation	
		Cash	Cash	In-kind
Total		12,600		12,600
Personnel	+			
Teaching Relief	+			
Travel	+			
Field Research	+			
Equipment	+			
Maintenance	+			
Other	+	12,600		12,600
Advanced Microscopy and Microanalysis (@ $70/h)		12,600	0	12,600

ARC Application Interface: Part E

Step 1: Click on the plus sign adjacent to the 'Other' row in the table. In the resulting text box, type 'Advanced Microscopy and Microanalysis (@ $70/h)', then press the 'Add Item' button.

Step 2: In the Australian Research Council column of the new 'Advanced Microscopy and Microanalysis (@ $70/h)' row and enter the required amount; $12,600 in our example above.

Step 3: In the Admin Org In-kind column of the same row and enter the matching amount; $12,600 in our example.

Step 4: Above the budget table select the next year and then repeat steps 2 and 3, with the requested amount adjusted for the higher or lower microscopy needs of the different stages (years) of the project. Repeat the process for additional years.

Budget Justification

Below is example text provided to justify the funding requested for use of Microscopy Australia's facilities.

Remember: the more specific and detailed your budget justification, and the more clearly and directly it is linked to the project, the better your chances of having the ARC award a larger proportion of your total budget request. This applies to instrument-access charges as much as to any other essential costs.

> *"This research project requires the examination of N samples per week/month/year [as appropriate] with the advanced microscopy and/or microanalysis [as appropriate] technique/s of [specify; e.g. atom probe tomography]. The estimated time required for characterisation of each sample is X hours, at a cost of $X per hour of instrument time."*

You should add further specific explanation of why the chosen microscopy technique/s is/ are necessary for the research, for example: *"Atom probe tomography is a unique characterisation tool that is able to reveal elemental and structural detail at the atomic scale and is essential for exploring the structure-function relationships in these alloys with nanometre-sized grains"* with a reference to further detail elsewhere in the application.

For ARC Discovery Projects, don't forget to explain the 'matching' contribution from the Administering Organisation towards the microscopy and microanalysis access charges. This needs to be included under 'Details of non-ARC contributions', on the application. For example: *"The University provides on-going support to [specify the facility; e.g. the Centre for Microscopy and Microanalysis] to maintain and operate instruments and provide expert support from technical staff. This cost represents a specific contribution to this project, at a level that is at least equivalent to the instrument usage charge ($70 per hour in these examples)."*

NHMRC Example

Guidelines and application information for all NHMRC grants can be found on the Australian Government's GrantConnect website. Grant proposals to the NHMRC must be submitted in their online grant management system, Sapphire.

For NHMRC project applications, such as the Ideas Grants, use of microscopes at our facilities is considered a direct cost, not a collaborating third party facility. Add your calculated microscopy fees for each year to your direct research costs and insert the total into the appropriate year. Despite not being a collaborating third party facility, you are still required to acknowledge your use of Microscopy Australia's facilities in any publications (see acknowledgement details below).

Example: Assume $36,619 worth of non-microscopy direct research costs for Year 1. If the microscopy and microanalysis fee is $12,600 for 180 hrs of access (as per the ARC example), adding these costs gives a total direct research cost of $49,219 for Year 1, which is $50,000 when rounded up to the nearest $5,000.

Proceed in a similar manner for each year of the application, with the requested amount adjusted for higher or lower microscopy needs, and other direct costs, as required by the different stages of the project.

Budget Justification

Below is example text provided to justify the funding requested for use of Microscopy Australia's facilities.

Remember: the more specific and detailed your budget justification, and the more clearly and directly it is linked to the project, the better your chances of having the NHMRC award a larger proportion of your total budget request. This applies to instrument-access charges as much as to any other essential costs.

> *"This research project requires the examination of N samples per week/ month/year [as appropriate] with the advanced microscopy and/or microanalysis [as appropriate] technique/s of [specify; e.g. confocal and fluorescence microscopy]. The estimated time required for characterisation of each sample is X hours, at a cost of $X per hour of instrument time."*

You should add further specific explanation of why the microscopy is necessary and how it adds value to your research, for example: *"Confocal and FLIM microscopies are essential to this project to elucidate the mechanisms of cellular apoptosis"* with a reference to further detail elsewhere in the application.

Acknowledging Microscopy Australia

It is a requirement that use of our facilities is acknowledged in any resulting publications.

We receive funding from the federal and state governments, which is then distributed to the facilities to fund instruments and staff. This funding depends on us demonstrating the importance of microscopy to researchers. Acknowledgement in publications is one of the main ways we demonstrate this.

If your facility does not provide you with a specific acknowledgment, please use the text below:

> *The authors acknowledge the instruments and expertise of Microscopy Australia at the [name of facility], [name of University or Institution], enabled by NCRIS, university, and state government support.*

Contact Details

Up to date contact details for each of our facilities can be found on our facility directory page: micro.org.au/about/contact-us/facility-directory/