# NCMAS 2024 Call for Applications

# Guidelines (Information for Applicants)

Last Modified 09 November 2023

## Key Dates

| | |
|---|---|
| 21 Aug 2023 | Applications open |
| 3 Oct 2023 | **Applications close (8:00pm AEDT/5:00pm AWST)** |
| 4-5 Dec 2023 | Scientific Advisory Committee meeting for allocations |
| 18 Dec 2023 | Allocations announced |

NCRIS
National Research Infrastructure for Australia
An Australian Government Initiative

# Table of Contents

*Introduction* ..... *4*

*HPC Facilities and HPC resources available* ..... *4*

National Computational Infrastructure (NCI) ..... 5

Pawsey Supercomputing Research Centre ..... 6

*Application Categories* ..... *8*

Category 1 – Standard ..... 8

Categories 2, 3 and 4 – Early Career Researcher (ECR), Special Consideration (SC) and Emeritus ..... 8

*Eligibility criteria and project requirements* ..... *9*

Applicants ..... 9

Size of Resource Requests including Minimum and Maximum Requests ..... 9

Other application requirements ..... 10

*Assessment Criteria and Scoring* ..... *11*

*Roles and responsibilities* ..... *12*

Lead Chief Investigator (Lead CI) ..... 12

Chief Investigator (CI) ..... 12

Delegated Lead CI ..... 12

Researcher ..... 12

*Your Application - What to Include* ..... *13*

1) Proposal and Computational Details ..... 13

2) Information on the project research team and prior HPC experience ..... 14

*Your Application - How to Submit* ..... *16*

Application Workflow ..... 16

..... 17

*Assessment of applications* ..... *18*

Merit Assessment and Allocation Protocol - 2024 NCMAS SAC ..... 18

Administrative Assessment and Technical Assessment ..... 18

*Successful Applicant Requirements and Conditions of Use* ..... *19*

Acknowledging NCMAS ..... 19

Progress Report ..... 19

Autonomous Sanctions and the Defence Trade Controls Act ..... 19

Email Addresses ..... 20

*Unsuccessful Applicants – Alternative HPC Options* ..... *20*

*Appeal Process* ..... *20*

*Key Dates, tips for completing your application and further support available* ..... *21*

**Key Dates** ..... **21**

**Tips for successfully completing your application** ..... **21**

**Further support available** ..... **22**

*NCMAS 2024 Applicant Checklist* ..... *22*

*Appendix* ..... *23*

**Anonymous Review** ..... **23**

**HPC Resourcing Alternatives - Start-up and Introductory Schemes** ..... **25**

# Introduction

The National Computational Merit Allocation Scheme is Australia's premier grant scheme for access to high-performance computing (HPC) resources. The two Tier-1 HPC facilities in Australia, the National Computational Infrastructure (NCI) and the Pawsey Supercomputing Research Centre (Pawsey), together offer hundreds of millions of hours of computing time to meritorious researchers.

The NCMAS 2024 Call for Applications will be open from 21 Aug to 03 Oct 2023.
**Applications close at 20:00 (8pm) AEDT/17:00 (5pm) AWST on 03 Oct 2023. No extension.**

All applicants (Lead CIs) and members of their research groups should read the following application guidelines and reference information in full before preparing an application.

This NCMAS information for applicants may be updated during the Call for Application period to clarify rules and processes as determined by the Committee Chair or participating HPC facilities.

The **NCMAS 2024 Call for Applications** is expected to be highly competitive. Last year:

- Around 817 million SU (service units) in total were awarded to applicants at the two HPC facilities, NCI and the Pawsey Supercomputing Centre.
- Allocated resources were only 60% of the total requested resources, with the scheme more than 1.6x oversubscribed.
- 146 of 189 applications (~77%) received allocations on one or more of the HPC facilities.

Please see the FAQ page if you have queries regarding the application process. If you have further questions about the NCMAS 2024 Call for Applications, they can be submitted by email to ncmas@nci.org.au.

# HPC Facilities and HPC resources available

Total computing resources available to researchers through the NCMAS 2024 call are as follows:

| System | Total Allocation (kSU) | Equivalent Core Hours |
|---|---|---|
| **NCI: Gadi** | 300,000 | 150,000,000 |
| **Pawsey: Setonix CPU** | 325,000 | 325,000,000 |
| **Pawsey: Setonix GPU** | 160,000 | 275,000,000* |

All references to computational resources in NCMAS supporting documentation will be in units of kilo-service-units; 1 kSU = 1,000 service units (SU).

* AMD GPU Compute Unit (CU) hours, with 220 Compute Units per single AMD MI250X GPU

Key information on the NCI and Pawsey HPC facilities follows.

| National Computational Infrastructure (NCI) | |
|---|---|
| **Facility overview** | NCI is Australia's national research computing service. We enable transformative science through big data and computing technologies, platforms and expertise. Our innovative, world-class services support the needs of research and industry today and into the future. NCI's major collaborators include The Australian National University; The University of New South Wales; CSIRO – Australia's national science agency; the Australian Bureau of Meteorology – the national meteorological agency; Geoscience Australia – the national geosciences agency and the New South Wales Department of Planning and Environment. Since 2007, NCI's collaboration has expanded to include many other Australian universities and medical research institutes. NCI's infrastructure was established through Commonwealth Government funding.<br>NCMAS allocations for 2024 will be on NCI's world-class supercomputer – Gadi. This system comprises a total of 4,962 nodes, made up of:<br>• 3074 nodes each with two 24-core Intel Xeon Scalable 'Cascade Lake' CPUs configured with 192 GiB RAM. 50 of the Cascade Lake nodes offer 1.5 TiB of RAM, using Intel Optane DC Persistent memory.<br>• 720 nodes each with two latest-generation 52-core Intel Xeon Scalable 'Sapphire Rapids' CPUs configured with 512 GiB of RAM.<br>• 160 nodes each with four NVIDIA V100 GPUs and two 24-core 'Cascade Lake' CPUs.<br>• 2 nodes each with the NVIDIA DGX A100 system, comprised of 8 A100 GPUs per node.<br>• A further 1006 nodes containing 14- or 16-core Intel 'Broadwell' and 'Skylake' CPUs, with various RAM configurations up to 512 GiB per node.<br>Gadi's data interconnect is Mellanox HDR InfiniBand, capable of data transfers at 200 Gb/sec. NCI also offers persistent data storage in excess of 90 petabytes. Data holdings include significant national and international data collections. NCI also operates the Nirin compute cloud for ancillary computing and data services. The Australian Research Environment provides access to Gadi through a graphical user interface, with standard Gadi functionality and discipline-specific research environments available through the platform. |
| **NCMAS computing resources** | 300 MSU on Gadi. |
| **NCMAS storage resources** | A 1 TiB default space allocation is available on high-speed scratch filesystem for every successful application.<br>1 PiB Lustre disk (/g/data) is available to the NCMAS scheme. Applicants should specify their storage needs in their applications. Allocations are limited to the duration of compute allocation – the 2024 calendar year. |
| **Software** | NCI maintains many software packages for use on its systems. The NCI application software catalogue is available online at https://opus.nci.org.au/display/Help/5.+Software+Applications |
| **User support** | NCI operates an expert Service Desk for users during normal business hours between 9:00am and 5:00pm AEST/AEDT on weekdays except for ACT public holidays and the extended Christmas closure period. NCI Academic Consultants / Staff Scientists can provide assistance with user and project registration and operational issues, and can offer advice on code development and performance, and the use of scientific software in HPC environments. |

## Pawsey Supercomputing Research Centre

**Facility overview**

The Pawsey Supercomputing Research Centre is a Tier-1 national supercomputing facility accelerating scientific discoveries for Australia's researchers. Located in Perth, Western Australia, Pawsey is currently serving scientists across the nation in domains such as radio astronomy, energy and resources, engineering, climate, bioinformatics and health sciences. Pawsey supports Australia's commitment to the Square Kilometre Array (SKA) through the Australian pathfinder projects, the Australian Square Kilometre Array Pathfinder (ASKAP) and the Murchison Widefield Array (MWA) telescopes. Pawsey provides services available to all Australian computational researchers through meritorious allocation schemes including NCMAS.

The Pawsey Supercomputing Research Centre is operating the Setonix supercomputer, ranked 17 and 4 in the global Top500 and Green500 rankings respectively. The new supercomputer delivers more than 43 petaFLOPs to help power high-impact Australian research projects. Setonix provides a substantial increase of computational resources available from in NCMAS, enables science and accelerates discovery.

More information: https://discover.pawsey.org.au/project/setonix

Setonix is built using exascale technology available in the HPE Cray EX supercomputer, with expanded data storage capabilities through the Cray ClusterStor E1000 system, significantly increased compute power and more emphasis on accelerators with 3rd generation AMD EPYC™ CPUs and 2nd generation AMD Instinct™ GPUs. Setonix is particularly suited for compute problems (i.e. application codes and datasets) that have high network bandwidth requirements, and/or scalable problems that would benefit from the HPE Cray Slingshot interconnect.

Applications for time on Setonix must demonstrate the ability to run highly scalable applications and workflows and make effective use of the architecture.

Setonix CPU resources are arranged in nodes of 128 AMD Milan cores, with 256 gigabytes of memory per node.

Setonix GPU resources will be arranged in nodes of 4 AMD MI250X GPUs, with a 64-core AMD EPYC CPU and 256 gigabytes of memory per node. A subset of the Setonix GPU partition have an increased 512 GiB of memory per node.

More information:
https://support.pawsey.org.au/documentation/display/US/Setonix+User+Guide

**NCMAS computing resources**

- 325 MSU on Setonix CPU
- 160 MSU on Setonix GPU

| Resources used | Service Units<br>CPU: 128 AMD Milan cores per node<br>GPU: 4 AMD MI250X GPUs per node |
|---|---|
| **1 CPU core / hour** | 1 |
| **1 CPU / hour** | 64 |
| **1 CPU node / hour** | 128 |
| **1 GPU / hour** | 128 |
| **1 GPU node / hour** | 512 |

| | |
|---|---|
| **NCMAS storage resources** | High performance /scratch filesystem is available for short term use by jobs actively running on the system. There is a purge policy implemented on /scratch, files are deleted automatically after 30 days from their last modification.<br><br>Each project will be allocated **project storage** of 1 terabyte by default, and up to 10 terabytes can normally be accommodated on Pawsey's object storage system Acacia. **Project storage** allocations are limited to the duration of compute allocation – the 2024 calendar year. In addition, researchers can apply for **managed storage** allocations, separately from NCMAS. **Managed storage** access is intended for storing larger data collections with demonstrable research value according to a curated lifecycle plan.<br><br>More information. |
| **NCMAS visualisation resources** | Pawsey provides remote visualisation services through web on dedicated Linux and Windows nodes with NVIDIA GPUs. This enables the researchers to visualise their large-scale data without the need to transfer the data and a range of scientific visualisation softwares are supported. In addition, researchers in WA can get access to the state-of-the-art visualisation lab, which could enable them to undertake research and collaborations. More information. |
| **Software** | Most supercomputing-class software that runs on Linux may be installed, with popular packages centrally installed and supported.<br><br>Licensed software (e.g. Fluent) may be used, with your own licences. Pawsey does not purchase licences for user applications. It is up to you to ensure your licence permits your use of the software at Pawsey.<br><br>More information:<br>https://support.pawsey.org.au/documentation/display/US/Software+Stack+Policies<br><br>If applying for multiple resources (such as Pawsey and NCI), it should be clearly stated what software will be run at each centre. |
| **User Support** | The Pawsey Help Desk is the primary access point for all requests or issues relating to Pawsey systems or services, it is accessed via email (help@pawsey.org.au) or the Service Desk Portal. The Help Desk is staffed between 9am and 5pm AWST on weekdays except for Western Australian public holidays and the extended Christmas closure period. In addition to the general Level 1 support, Level 2 in-depth technical support and Level 3 expert supercomputing applications support is available as escalation points. Pawsey also provides training courses and extensive documentation relating to the use of Pawsey's systems and services. |

# Application Categories

NCMAS applications are accepted in four categories: Standard, Early Career Researcher (ECR), Special Consideration (SC) and Emeritus.

## Category 1 – Standard

Resource requests are not restricted. Applicants are expected to demonstrate successful utilisation of national HPC facilities at scale and have a track record of research outcomes and independent funding.

## Categories 2, 3 and 4 – Early Career Researcher (ECR), Special Consideration (SC) and Emeritus

The **ECR category** provides an opportunity for researchers who have been awarded a PhD within the last five (5) years (relative to opportunity). Early Career Researcher applications are highly competitive. Applicants are expected to demonstrate a record of independent research funding, such as an ARC DECRA, NHMRC CDA, or similar award.

The **Special Consideration (SC) category** provides a limited number of special allocations to applicants who may otherwise not be competitive in NCMAS. For example, an individual who has returned to a research role following a significant career interruption.

The **Emeritus** category supports researchers with emeritus and/or retired/adjunct status to access computing resources on HPC facilities to continue their research activities.

For ECR/SC/Emeritus requests, if their proposal is considered meritorious, they will be awarded the minimum allocation for their chosen facility (see table below). Requests must only be made on one HPC facility, e.g. ECR applicants **cannot** request resources on **both** Gadi and Setonix.

| Facility-System | Minimum Allocation (kSU/year) | Equivalent Core Hours |
|---|---|---|
| **NCI: Gadi** | 1000 | 500,000 |
| **Pawsey: Setonix CPU** | 1000 (combined) | 1,000,000 (combined) |
| **Pawsey: Setonix GPU** | | |

# Eligibility criteria and project requirements

## Applicants

The proposed project must be led by one or more Chief Investigators (CI), with one designated Lead CI.

For all applicants:

- In accordance with guidelines for access to Commonwealth-funded research infrastructure and relevant Australian Government legislation, **Lead CIs and CIs of NCMAS projects must hold at least a 0.2 FTE research position at an Australian higher-education institution, research institute or publicly-funded research agency, and be based in Australia (i.e. NCMAS eligible institutes)**. If an applicant (Lead CI) holds a fixed duration contract for at least 0.2 FTE for the calendar year 2024, they are eligible to apply to NCMAS in the current round.
- An individual may be named as a Lead CI or CI on **only one** NCMAS 2024 application.
- Lead CIs and CIs on a NCMAS application must provide evidence of independent research funding, for example, grants from the ARC or NHMRC.
    - Any grants referenced by a Lead CI or CI must name that applicant as a primary (named) recipient.
    - Applications citing grants on which the applicants are not primary (named) grant recipients will be disqualified for non-compliance.
- A person holding a Postdoctoral appointment at an **NCMAS eligible institute** can apply as a Lead CI, providing that the postdoctoral appointment is beyond 2024 in
    - the ECR category if eligible;
    - the Standard category, the application will be assessed in as a Standard application.
- A person undertaking a higher degree by research is **not eligible** to be a Chief Investigator (CI) or Lead Chief Investigator (Lead CI) on a NCMAS proposal.

For those applying to NCMAS under the ECR, SC and Emeritus categories the following additional requirements apply.

- Specific eligibility requirements exist:
    - For ECR category, the applicant (Lead CI) must have been awarded a PhD within the previous five (5) years (relative to opportunity).
    - For Special Consideration category, the applicant (Lead CI) must have been awarded a PhD within the previous nine (9) years (relative to opportunity).
    - For Emeritus category, the applicants must have Emeritus or Adjunct status with an **NCMAS eligible institute** and proven expertise and publications in the past five years (research grants are not required).
- An individual may apply for an SC category allocation for a maximum of three (3) consecutive years.
- Specific proposal limits apply: The body of the application should be no longer than 1000 words (or) approximately five pages in length.
- The allocation is the minimum allocation of the requested facility.
- Requests must only be made on one HPC facility (NCI or Pawsey).

## Size of Resource Requests including Minimum and Maximum Requests

### Minimum requests

Each facility has set a minimum resource request size (see table below). Applications that do not request, or are assessed as not requiring, at least the minimum allocation at a selected facility will not be awarded NCMAS resources at that facility, i.e. **will be deemed ineligible**.

Applicants requiring less than the NCMAS minimum allocation are encouraged to approach their home institution, regional or state-based HPC consortia (examples: Intersect, QCIF, TPAC), or other merit or partner schemes on the national facilities with their resource request.

| Facility-System | Minimum Allocation (kSU/year) | Equivalent Core Hours |
|---|---|---|
| **NCI: Gadi** | 1000 | 500,000 |
| **Pawsey: Setonix CPU** | 1000 (combined) | 1,000,000 (combined) |
| **Pawsey: Setonix GPU** | | |

### Maximum requests

Resource requests for NCMAS are not subject to a maximum limit. Unbounded resource requests allow researchers to prepare a single proposal that can be considered by multiple allocation schemes, and which reflects their actual demand for HPC resources.

### Justifying your resource request

Align your resource request with the scope of work and your HPC Experience.

A request for more than 5000 kSU (5 MSU) per year on any one facility would normally be associated with a team of experienced researchers who clearly demonstrate a track record of efficient and productive use of HPC resources. An application with very large requests (greater than 10,000 kSU/year), should clearly demonstrate sustained, expert utilisation of HPC at scale.

**Note that allocation to any NCMAS applications will be determined by NCMAS Scientific Advisory Committee (SAC), that may not match the request in the application.**

## Other application requirements

### Anonymisation

The NCMAS review has moved to an anonymised process, in which applicants' identities are concealed from SAC members/reviewers in the primary/mandatory review stage.

Key parts of applications (Proposal and Computational details) are therefore required to be written in the anonymous third-person writing style. **This is not optional and applications not meeting requirements will be deemed ineligible**. Further information and guidance can be found in the Anonymous third-person writing style section in the Appendix.

The anonymous review does not mean applications will be accepted from anonymous sources. As with previous cycles, applicants must still enter the names and affiliations of all investigators into the submission portal. However, the NCMAS Secretariat will not include names or affiliations in the versions generated for the reviewers for the primary/mandatory review stage.

### Incomplete applications

The NCMAS SAC will only assess **complete** applications. Incomplete applications will be deemed **ineligible**.

### Word limits

Applications must conform to outlined 1000 words limit. Any application exceeding outlined page limits (see Your Application – What to Include) **by more than 10%** will be removed from consideration, i.e. will be deemed **ineligible**.

### Application due dates and submission

Applications must be submitted by the outlined due dates. Late submissions will **not** be accepted. **Submission is final** – no changes or corrections can be made to the application once submitted, except by supplying addenda for:

- Newly announced funding, or
- Additional information (as requested by Administrative or Technical Reviewers – see Assessment of Applications).

# Assessment Criteria and Scoring

NCMAS applications will be scored on the following criteria:

1) **Project quality and innovation (40%)**
   - Significance of the research.
   - Originality and innovative nature of the computational framework.
   - Advancement of knowledge through the goals of the proposed research.
   - Potential for the research to contribute to Australian science, research and innovation priorities.

2) **Investigator track records (30%)**
   - Research record and performance relative to opportunity (publications, research funding, recognition and esteem metrics) of the entire team.

3) **Computational feasibility (20%)**
   - Adequacy of the time commitment of investigators to undertake the research and utilise the resources successfully.
   - Suitability of the nominated system(s) to support the research, and the appropriate and efficient use of the system(s).
   - Capacity to realise the goals of the project within the resources request.
   - Appropriate track record in the use of high-performance computing systems, relative to the scale of the resources requested. Technical assessment report will be made by NCI and Pawsey.

4) **Benefit and impact (10%)**
   - Ability of the project to generate impactful outcomes and produce innovative economic, environmental and social benefits to Australia and the international community.

All applications will be scored out of 10.

# Roles and responsibilities

## Lead Chief Investigator (Lead CI)

- Leads and manages the project research team.
- Approves and submits the final application for the project in the NCMAS Application System, including managing team membership.
- Acts as an official point of contact between the project, the NCMAS Secretariat and the SAC.
- Provides a track record of research output and funding support in the NCMAS application.

## Chief Investigator (CI)

- Supports the Lead CI in preparing the NCMAS application and managing the project.
- Provides a track record of research output and funding support for the NCMAS application.
- Can be promoted to a Delegated Lead CI role in cases where the Lead CI wishes to delegate project management responsibilities (see below).
- N.B. Cannot see the application in the NCMAS Application System until after submission.

## Delegated Lead CI

- Appointed by the Lead CI to **actively manage a project and NCMAS application**.
    - Expectation that the Lead CI will appoint a CI as Delegate.
- Responsibilities are those of the Lead CI.

## Researcher

- Member of the project research team.
- A researcher's track record is not included for consideration in the NCMAS application.

# Your Application - What to Include

## 1) Proposal and Computational Details

### Proposal

The Proposal is the part of your application that describes your proposed research. It should focus on the assessment criteria of 1) Project quality and innovation and 4) Benefit and Impact.

- Provide sufficient background to clearly define the goals of the project.
- Emphasise the significance, impact and innovation of the research.
- Describe the significance and impact in the **scientific domain**.
- Describe the significance and impact on **society and industry partners** (if applicable).
- Be specific and concise.
    - Avoid general statements, such as "This research is significant to Australia".

The Proposal **must** be written in the Anonymous third-person writing style - see Appendix - Anonymous Review for additional details.

For applicants with an existing NCMAS project, it is important to remember to ensure you update all scientific and technical components of the Proposal to reflect the current scope of work and methods.

**Proposal length:** The Proposal should be **no longer** than five (5) pages (excluding references). Providing historical context and ten-year scope of the research should take no more than one (1) page.

### Computational Details

In the Computational Details part of your application, you should focus on the assessment criteria of 3) Computational Feasibility and provide details on:

- Scalability of your code(s) **on each nominated facility**:
    - Use scalability tables and/or plots.
    - For software with **multi-node** capability, applicants should present data relative to **single node** performance, not **single core** performance.
    - Poor scaling may impact negatively on the merit of the application.
- Compute job resources at each nominated facility:
    - Provide details on typical job configurations for your workflows, including
        - expected wall times,
        - number of nodes/cores,
        - data dependencies,
        - expected throughput, and so on.
    - Provide a summary of the resource requirements in the form of an “SU budget” for each request. This budget should list:
        - major steps in the project workflow(s),
        - the key methods/algorithms required, and
        - the SU requirements for each step.
            - Also describe other dependencies such as software and storage.
- Storage at each nominated facility:
    - Describe data storage requirements and data life cycle for your project.
- Algorithms and Workflows:
    - Describe parallelism in your application(s) and how this relates to mathematical algorithms used. Describe data movement and lifecycle.

- Provide a clear justification for use of supercomputer resources:
    - This justification might elaborate on, for example, a requirement for large scale parallel jobs, high throughput workflows, or data-intensive workflows using large data sets.
- If previous resource usage at a facility has had low efficiencies, explain why, and describe your strategies to improve efficiency:
    - One example of inefficiency is an application with a large memory per core requirement. This can lead to underuse of reserved cpus.

Computational Details should be written in the Anonymous third-person writing style.

### Proposal and Computational Details - Submission requirements

The Proposal and Computational Details should be combined into a single PDF file to be uploaded. This combined document should be no more than fifteen (15) pages (excluding references).

Proposal formatting follows general ARC conventions.

- Use plain English and comply with the proposal format and submission requirements.
- Use Australian English spelling.

All pages (uploaded in PDF form) must be as follows:

- Black type, or occasional coloured type for highlighting purposes.
- White A4 size paper with at least 0.5 cm margin on each side, top and bottom.
- Text must be size 12-point Times New Roman or an equivalent size before converting to PDF format and must be legible to assessors.
    - Otherwise, a highly legible font type must be used: Arial, Courier, Palatine and Helvetica subject to them being an equivalent size to 12-point Times New Roman.
    - Variants such as mathematical typesetting languages may also be used.
- References can be in 10-point Times New Roman or equivalent.
- Applicants should note that colour graphs, colour photographs, detailed graphics, and grey scale objects may be reproduced in black and white.
- The NCMAS Secretariat reserves the right to seek an original electronic copy of the Proposal to determine that the text meets these requirements.

## 2) Information on the project research team and prior HPC experience

As part of your application, you will also provide information on the expertise, background, and experience of the CIs in your research team. This will be considered by the SAC as part of their assessment of proposals, particularly in relation to the assessment criteria of 2) Investigator records.

## MyNCI

Relevant information will be collected through the MyNCI (https://my.nci.org.au) system and considered by SAC as part of your application. This includes information from the ORCID iD, Career and Publication Record tabs. **It is therefore critical that all CIs listed on the application must have a MyNCI profile and ensure this information is up to date -** see Your Application – How to submit for further information on steps required.

**What is ORCID?**

- ORCID is an independent non-profit organization that provides a persistent identifier — an ORCID iD — that distinguishes you from other researchers, and a mechanism for linking your research outputs and activities to your iD. ORCID is integrated into many systems used by publishers, funders, institutions, and other research-related services. Learn more at orcid.org.
- It is required to use ORCID to populate your researcher publication record on MyNCI for your NCMAS application – see Your Application – How to submit.
- A separate document has been prepared with more details on how to use ORCID in your NCMAS 2024 application.

## Application Form free text fields

Prior HPC Experience: This part of the application is where you describe previous experience at HPC facilities and may be used by the SAC when assessing your proposal against criteria 3) Computational feasibility.

If you received an NCMAS grant for 2023, describe your successful use of the systems you received an allocation on and any challenges you overcame.

If you **did not** receive an NCMAS grant for 2023, describe your previous experience with HPC. Assessors expect to see:

1. a summary of your previous HPC experience,
2. Australian or international systems used,
3. experience with other resourcing/allocation schemes, e.g. facility Start-up or Partner schemes – demonstrate your expertise and capability, and
4. details of application codes, algorithms and workflows.

Underutilisation in 2023: Applicants with an existing NCMAS project are responsible for explaining any underutilisation in the previous year. **Unjustified underutilisation may impact negatively on the merit assessment of the application.** If your project has used less than 90% of your 2023 allocation at 2023 Q3 (pro rata), you should provide an explanation for underutilisation of your current allocation.

Please use the Utilisation of Current Allocation (optional) part of the application form to justify any underutilisation.

# Your Application - How to Submit

The NCMAS online application system is managed by the NCMAS Secretariat and is hosted on NCI web infrastructure. All applicants (Lead CIs, Delegated Lead CI, CIs and Researchers) need to register for an NCI user account before starting an application.

## Application Workflow

**Submitting an NCMAS application is slightly different for new projects (and applicants) versus established projects. Please read the following sections carefully.**

All Lead CIs, Delegated Lead CIs, CIs and Researchers are required to complete steps 1-3.

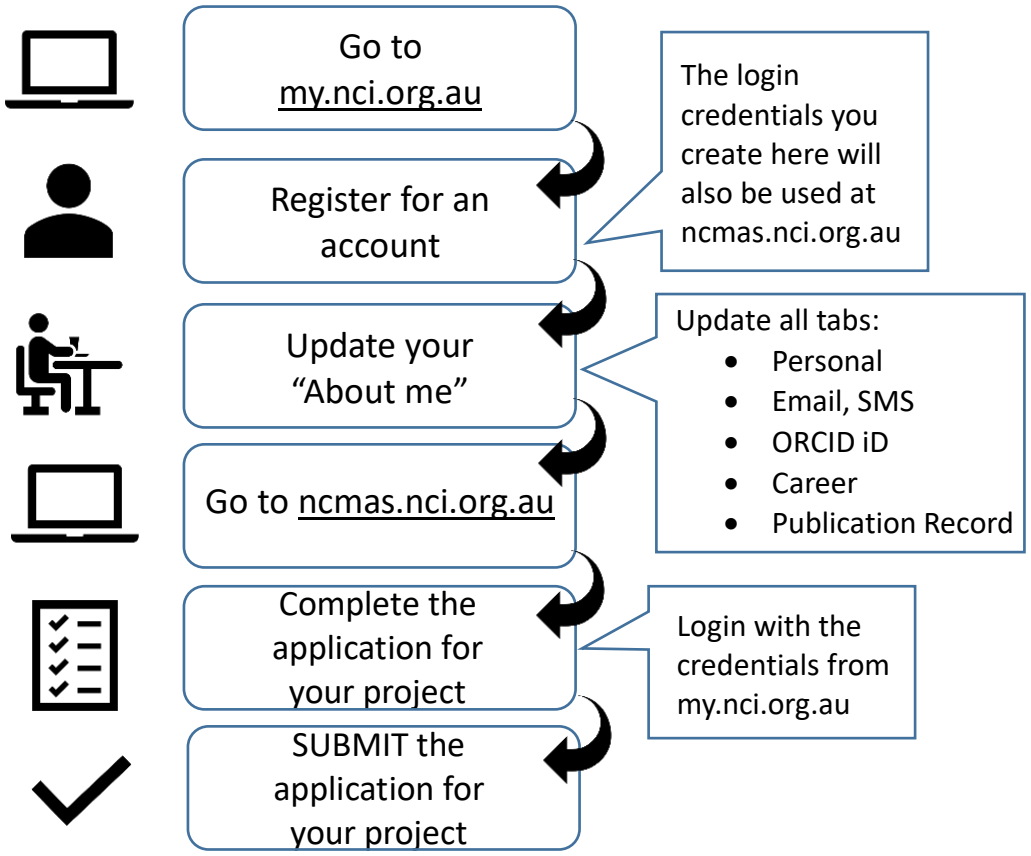
1. Open my.nci.org.au
2. Enter your MyNCI account details
    a. Register for an account if you do not have one
3. Update your "**About me**"
    a. Personal
    b. Email, SMS
    c. Career
    d. ORCID iD
    e. Publication Record

Only Lead CIs and Delegated Lead CIs are required to complete steps 4-7.

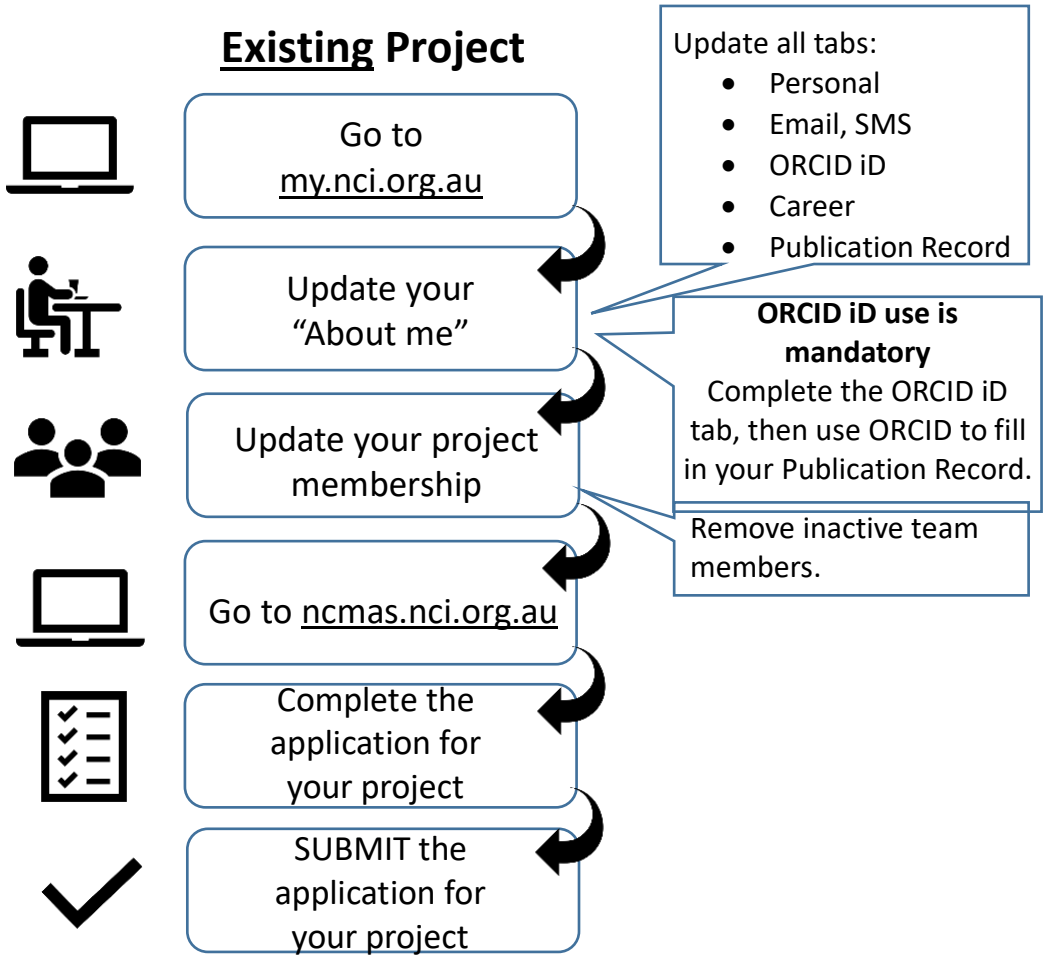
4. Open ncmas.nci.org.au
5. Open the My Application page
    a. If required, log in with your MyNCI account
6. If you
    a. **Have** an existing NCI project (from previous NCMAS grant or any other NCI scheme)
        i. Find it in the list and click "Start application"
    b. **Do not have** an existing NCI project (including if you have an active NCMAS allocation at Pawsey – but no allocation at NCI)
        i. Click "Create a new project" and complete the form
        ii. Return to the My Application page
        iii. Find the new project in the list and click "Start application"
7. Complete and submit the application

| **When to use https://my.nci.org.au** | **When to use https://ncmas.nci.org.au** |
|---|---|
| To register for a new user account | To complete your NCMAS application |
| To reset your account password | To submit your NCMAS application |
| To update '**About me**'<br>• Personal<br>• Email, SMS<br>• Career<br>• ORCID iD<br>• Publication Record | To submit addenda – if required |
| To approve requests to join a project<br>(Lead CI or Delegated Lead CI only) | To view your NCMAS outcome<br>(Lead CI only) |
| To remove a member of the project team<br>(Lead CI or Delegated Lead CI only) | |

# New applicant/project – Lead CI workflow




## Existing Project



# Assessment of applications

## Merit Assessment and Allocation Protocol - 2024 NCMAS SAC

Assessment of proposals will be based on a combination of technical and scientific merit (see Assessment Criteria) based on material provided in the application. Assessment and resource allocation decisions are made by the SAC only. SAC is an independent peer-review committee. Committee members are appointed for a four-year term, with approximately half of the SAC being renewed every two years. A Deputy Chair and Chair are appointed for a two-year term from the SAC's membership.

- All applicants are expected to provide a detailed justification of the resources requested and are expected to demonstrate the capacity to utilise the requested HPC resources effectively.
- All requests must be proportional to the scientific merit of the proposal. The SAC reserves the right to allocate all or part of the resources available, and all or part of any specific request.

The NCMAS Secretariat services are provided by NCI from its base at The Australian National University in Canberra. The NCMAS Secretariat and HPC facilities provide advice or supporting information to the SAC but are not otherwise involved in determining allocations.

## Administrative Assessment and Technical Assessment

Before the Merit Assessment phase, each application goes through Administrative Assessment and Technical Assessment.

### Administrative Assessment

Administrative Assessment specifically looks at the completeness, compliance and eligibility of an application as it is submitted. All applications are reviewed for compliance as soon as possible following the application deadline.

The Administrative Assessment phase of the NCMAS process gives applicants a brief opportunity to correct errors or address non-compliance issues in their applications, and submit their application for consideration, instead of being rejected outright. In this way the Administrative Assessment is intended to minimise cases of outright rejection due to incompleteness and/or compliance issues. The NCMAS Secretariat manages this phase of assessment, with oversight from the SAC Chair.

- Potentially non-compliant applications will be referred to the SAC Chair for a final decision.
- The Secretariat will notify the Lead CIs of all applications confirmed as non-compliant as and when this is clear during different stages of assessments.

The Administrative Assessment does not provide feedback or advice on scientific or technical components of an application.

### Technical Assessment

Nominated HPC facilities will assess each application for suitability/fit for its HPC systems in the Technical Assessment.

- A facility may contact an applicant for further information as part of the Technical Assessment.
- Technical assessments are provided by the facilities as advice to the SAC. The SAC may also recommend that an applicant consult a nominated facility for further technical advice during merit assessment or after an allocation is awarded.

# Successful Applicant Requirements and Conditions of Use

## Acknowledging NCMAS

A condition of accepting an NCMAS allocation is that applicants acknowledge both NCMAS and the high-performance computing facilities that they have used in all publications and presentations of the associated work. The following is a standard acknowledgement template:

> "This research was supported by the Australian Government's National Collaborative Research Infrastructure Strategy (NCRIS), with access to computational resources provided by the ***<facility name/s>*** through the National Computational Merit Allocation Scheme."

## Progress Report

If you are successful in your NCMAS 2024 application, you will be required to submit a Progress Report in Quarter 1 of 2025.

This document will describe research highlights and notable outcomes for your project in the calendar year 2024. This might include papers in high-impact journals, patents or other outcomes of impact and/or national benefit. Your Progress Report may be cited, with your consent, to promote the scheme and for NCRIS reporting.

## Autonomous Sanctions and the Defence Trade Controls Act

All Lead CIs on NCMAS applications are required to certify (via a question in the application form) compliance of their project with Commonwealth legislation, in particular, the Autonomous Sanctions Act (2011, Cth) and the Defence Trade Controls Act (2012, Cth). These articles of legislation impose additional requirements for supporting documentation and certification of project researchers in some circumstances. Applicants should review the current conditions of use on the websites of each of the participating HPC facilities:

- National Computational Infrastructure (NCI)
- Pawsey Supercomputing Research Centre

Compliance with Commonwealth legislation is managed through your institution's research office. Consult your research office if you have specific questions about Autonomous Sanctions or DTCA compliance.

### Email Addresses

To ensure compliance with relevant Australian Government legislation, all researchers named in NCMAS applications must register and use an official institutional email address for all correspondence. All named researchers who currently use a non-institutional email address (for example, @gmail.com or @yahoo.com) must register an official institutional email address. It is the responsibility of the project Lead CI to ensure that all project staff register and use official email addresses.

# Unsuccessful Applicants – Alternative HPC Options

Facility partner schemes and start up schemes offer an opportunity to supplement your NCMAS allocation or provide alternatives access to HPC should your NCMAS application be unsuccessful. These schemes are well suited to projects which are gaining experience and developing HPC capabilities. An application to a partner or start up scheme will usually be less onerous than an application to a merit scheme, such as NCMAS. Partner schemes, in many cases, can allocate resources on a more flexible schedule to accommodate developing workflows.

Partner and start up scheme allocations are determined by the Partner Scheme Manager for each partner. The Scheme Manager is the responsible allocation authority for the partner institution. Additional detail is provided in Appendix – HPC Resourcing Alternatives.

# Appeal Process

**All decisions of the NCMAS SAC are final. Appeals will be considered only against administrative or procedural issues and not against decisions of the Committee or against assessor ratings and comments, in a manner consistent with the practices of the Australian Research Council**.

Administrative appeals must be submitted by the project Lead CI, via email to ncmas-secretariat@anu.edu.au. The deadline for submission of an administrative appeal is **5:00pm AEDT Friday 2 February 2024**.

Administrative appeals will be considered by the SAC Chair and Deputy Chair, and processed within twenty-eight (28) working days. Appellants will be notified of their outcome by email as soon as possible following a decision by the Chair.

The administrative appeal process is intended to:

- Determine whether administrative or procedural errors have occurred in NCMAS processes.
- Determine whether any such errors affected decision making by the NCMAS Secretariat and/or SAC.

# Key Dates, tips for completing your application and further support available

## Key Dates

The NCMAS allocation process comprises the following stages:

1. Call for applications announced (Secretariat)
2. Applications accepted (Secretariat)
3. Administrative Assessment – Completeness, Eligibility and Compliance verification (Secretariat)
4. Technical Assessment (nominated Facilities and Secretariat)
5. Merit Assessment (SAC)
6. Allocation meetings (SAC, supported by Secretariat and Facilities)
7. Notification of outcomes (Secretariat).

## Tips for successfully completing your application

The recommendations below are provided as general advice to help you improve your NCMAS application. These recommendations address questions received and the experiences of applicants, the Secretariat and the SAC in previous NCMAS calls. The NCMAS 2024 FAQ page may also provide information to help you complete your application.

- Read all NCMAS announcements and supporting documentation in full. Watch for updates from the NCMAS Secretariat throughout the Call for Applications period.
- Ensure that personal profiles and research track records of the Lead CI and all CIs on your application are fully up to date.
- Respect the length guidelines (for word count and degree of detail) for each question in the application form.
- Ensure your Proposal and Computational Details are written in **Anonymous Third-Person style.**
    - These will be uploaded together – as a single PDF file.
- Provide a comprehensive justification of your request for HPC resources.
- Provide compelling evidence for code performance and scaling in your application.
- Successful applications will demonstrate an ability to use the HPC facilities at scale, and leverage efficient multi-CPU jobs, data interconnects and high-performance storage.
- Cite only those research grants that are directly attributed to the Lead CI or CIs on the application.
    - Citing a grant on which the Lead CI or a CI from the project is not directly named is a breach of the rules. **This will disqualify your application.**
- Submit your application before the final submission deadline.
    - **Submission is final** – no changes or corrections can be made to the application once submitted, except by supplying addenda for:
        - Newly announced funding, or
        - Additional information as requested by Administrative or Technical Reviewers.
- Late submissions will not be accepted.

### Further support available

- If you still have any questions after reading these Guidelines (Information for Applicants), please refer to additional supporting documentation including FAQs.
- Review the Online Information Course.
- Attend an information session.
- Contact ncmas@nci.org.au if you require support with your application.

# NCMAS 2024 Applicant Checklist

| Task | Notes | Done |
|---|---|---|
| Download and read -- *NCMAS 2024 Guidelines (Information for Applicants)* | This document contains important rules and guidelines for the 2024 call. | |
| Complete the NCMAS 2024 online information course | https://learning.hpc-australia.org.au/courses/ncmas-2024 | |
| All project members update contact information and career profiles at https://my.nci.org.au | Personal information for all team members should be up to date. | |
| Lead CI or Delegated Lead CI should update project personnel at https://my.nci.org.au | 1. Add new team members<br>2. Remove members who will no longer contribute to the project | |
| Submit NCMAS application online at https://ncmas.nci.org.au | From 21 August 2023<br><br>This is your NCMAS application. Draft versions of your application can be saved as needed.<br><br>Early submission avoids the crunch at the deadline.<br><br>Submit before **8:00pm AEDT/5:00pm AWST, Tuesday 3 October 2023. No Extension.** | |
| Check NCMAS outcome at https://ncmas.nci.org.au | Outcomes will be posted on the NCMAS website by 18 December 2023. | |

# Appendix

## Anonymous Review

The NCMAS review has moved to an anonymised process, in which applicants' identities are concealed from committee members/reviewers in the primary/mandatory review stage.

The anonymous review does not mean applications will be accepted from anonymous sources. As with previous cycles, applicants must still enter the names and affiliations of all investigators into the submission portal. The NCMAS Secretariat will not include names or affiliations in the versions generated for the reviewers for the primary/mandatory review stage.

### Anonymous Third-Person (A3P) Writing Style

A3P style is required for the Proposal and Computational Details parts of the application.

Applicants should read the separate Anonymisation Guide document to ensure their application complies with A3P requirements.

### Primary and Secondary Review Stages

Review Stage 1 – Anonymised and Mandatory for Assessors

Team information will be captured (as previously) through the MyNCI system. Investigator metrics will be derived from the combined team record and presented to assessors in an anonymised summary form.

In the primary/mandatory stage, reviewers will be presented with an anonymised summary of track record along with the anonymous third-person Proposal and Computational Details components of the applications. They will be required to submit a score based on this information.

Only after submission of this first stage score will reviewers have the option to proceed to the second/identifiable stage. Reviewers will provide a justification to proceed to the second stage.

*Anonymised Track Record*

Reviewers will see a summary containing the following information:

- M-index for each CI:
  - M-index = H-index divided by the CI's years of service.
  - Years of service = Years since first publication minus time for career interruptions.
    - Career interruptions, e.g. medical, carer responsibilities.
    - Note – NHMRC has adjusted their Relative to Opportunity policy to include the pandemic – NCMAS will do the same.
  - Order of the M-indices will be randomised.
- Research FTE percentage for each CI:
  - In next year.
  - In previous five (5) years.

- Journals published in and frequency for each journal (for active years - not counting career interruptions as defined above):
    - In current year to date.
    - In previous calendar year.
    - and in previous five (5) years.
- Category 1 grants, as defined by the Department of Education:
    - number of grants active at time of application and during award period (calendar year 2023).
    - number of grants awarded in previous five (5) calendar years.
- Category 2 grants, as defined by the Department of Education:
    - number of grants active at time of application and during award period (calendar year 2023).
    - number of grants awarded in previous five (5) calendar years.
- Number of refereed journal publications in previous five (5) years.
- Number of refereed conference publications in previous five (5) years.
- Number of other significant publications, e.g. books.
- The total number of **active** people in the research group:
    - This may help to determine the capacity of the group to use the requested resources.
    - Examples of **not currently active** group members that **should not be included** in the total:
        - Members no longer using resources, but have papers under review.
        - Members no longer working on the project but hold potential for further/future collaboration.
- Awards and Honours – number:
    - University Research Awards.
    - Professional Society Awards/Medals (e.g. AIP, RACI).
    - ARC Fellowships.

Review Stage 2 – Identifiable and Optional for Assessors

This second stage gives reviewers the option to reveal the identifiable track record of a team. They will also be able to see previous use of NCMAS allocated resources if applicable, or previous HPC Experience at other facilities/through other schemes, which will contain identifiable details of previous HPC/D use.

Reviewers will have the option to adjust the score for the application based on the identifiable information. If a reviewer wants to change their score based on this additional information, they will provide a justification.

## HPC Resourcing Alternatives - Start-up and Introductory Schemes

Projects that are developing experience, or that require less than the minimum NCMAS allocation available on the national HPC facilities should consider applying to a facility start up scheme.

| Scheme | Facility | Resources Available / Information | Email |
|---|---|---|---|
| **NCI Start-up** | NCI/ Gadi | 5 kSU/year (Gadi).<br>Default /scratch allocation of 1 TiB.<br>Start-up projects are **not** automatically eligible for /g/data or massdata allocations.<br>Apply at https://my.nci.org.au/ | help@nci.org.au |
| **NCI Adapter** | NCI/Gadi | Up to 250 kSU/quarter, maximum of two Adapter allocations per year. Find out more at NCI Adapter Scheme. | Adapter-secretariat@anu.edu.au |
| **Pawsey Preparatory Access Scheme** | Pawsey/ Setonix | The Preparatory Access Scheme is intended for researchers who need to:<br>• port and benchmark their codes and workflows before applying to one of the merit allocation schemes,<br>• generate scalability data to be included in the merit allocation schemes proposals.<br><br>Preparatory Access projects are allocated a fixed allocation of 100 kSU for 3 months.<br>Find out more at Preparatory Access Scheme. | help@pawsey.org.au |

### NCI/Gadi - Partner Schemes

NCI User Services (help@nci.org.au) can answer general questions about partner scheme eligibility and help you to contact scheme managers. Scheme eligibility generally depends on your home institution.

### Pawsey/Setonix - Partner Schemes

Information about the Pawsey Partner Schemes can be found here.

The Pawsey user support service (help@pawsey.org.au) can answer general questions about your eligibility and can provide guidance in obtaining resources for your project.