



**Australian
National
University**

Position Description

College/Division:	Research and Innovation
Department/Unit:	ACCESS National Research Infrastructure (NRI)
Position Title:	Senior Research Software Engineer
Classification:	ANU Officer Grade 8 (Specialist)
Position No:	TBC
Responsible to:	Team Leader
Number of positions that report to this role:	N/A
Delegation(s) Assigned:	N/A

PURPOSE STATEMENT:

ACCESS – The Australian Community Climate and Earth System Simulator – is a collaborative venture between Government and the Australian research community to support development, maintenance and access to climate and weather models and data. ACCESS is being transformed into a national research infrastructure capability accessible by a broader community of users, enabled by Australian Government investment through the National Collaborative Research Infrastructure Strategy (NCRIS). Hosted at ANU, ACCESS-NRI (ACCESS National Research Infrastructure) is established as a multi-party collaborative venture responding to the current and future needs of Australia's scientific, Government and stakeholder community.

The Senior Research Software Engineer will provide technical expertise to support ACCESS-NRI's computational and scientific software development within a team of software developers. The successful candidate will contribute and/or lead development, optimisation, and deployment of software and workflows that enable climate and Earth system modelling, utilising high-performance computing, visualisation and big-data approaches for the benefit of the Australian research community.

KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:

ACCESS-NRI is led by a Director, who will play a national and international role in promotion of the ACCESS modelling capability, contribute to the wider development of climate, Earth system and weather modelling in Australia and provide technical and strategic leadership. There are two Associate Directors within the ACCESS-NRI facility (Associate Director, Model Development and Associate Director, Release Management) and 9 Team Leaders in Atmosphere, Ocean, Land, Ice Sheet, Coastal, Model Evaluation and Diagnostics, User Training, Software Transformation and Release Management.

The Senior Research Software Engineer will operate in one of these ACCESS-NRI teams, reporting to their team lead. The Senior Research Software Engineer will be expected to work collegially, leading by example to develop and maintain effective, productive and beneficial workplace relationships with colleagues, as well as with industry stakeholders.

Role Statement:

Under broad direction, working with a degree of autonomy, the Senior Research Software Engineer focuses on requirements analysis, development and evaluation of climate and Earth system modelling software and data, while considering the operational, cost and schedule, performance, training and support constraints.

The Senior Research Software Engineer will:

- Manage software development projects in climate and Earth system modelling from concept through to implementation and be responsible for the subsequent evaluation and testing.
- Develop and assess software system requirements, interfaces and specifications.
- Manage the design, development and technical processes of code repositories hosted by ACCESS-NRI.

- Manage the performance optimisation and evaluation of ACCESS-NRI software.
- Provide advice and technical support through the investigation, resolution and tracking of software.
- Contribute to the development of plans and schedules for assigned project tasks, ensuring technical requirements are met and risks are mitigated whilst ensuring that systems are delivered on schedule.
- Contribute to new project proposals, applying software engineering knowledge to develop work plans.
- Train and mentor other members of the team, research students and staff across the ACCESS community in numerical and computational techniques.
- Maintain a working knowledge both of best-practice procedures in the context of software development, and an awareness of relevant state-of-the-art technologies that might be applied to climate and Earth system modelling.
- Create and maintain technical documentation of software development by ACCESS-NRI and contribute to the preparation of articles for publication.
- Comply with, maintain an awareness of and help promote all ANU policies and procedures and in particular those relating to work health and safety and equal opportunity, including a demonstrated high level of understanding of equal opportunity best practice and a commitment to their application in a university context.
- Perform other duties as requested, consistent with the classification level of the position.

SELECTION CRITERIA:

1. Progress towards postgraduate qualifications in Computer Science, Climate Science or related disciplines, and/or significant experience in scientific software.
2. Demonstrated experience working with scientific programming languages, scripting languages and knowledge of common data formats.
3. Experience in weather, climate or Earth system modelling, or other relevant scientific modelling, including high performance/parallel computing and code management.
4. Demonstrated effective communication and liaison skills, with demonstrated experience in gathering requirements and building software to meet user needs.
5. Demonstrated ability to provide high-level technical advice and support to researchers and industrial stakeholders.
6. Demonstrated experience in working independently with minimal supervision, with an ability to understand code written by others quickly and self-sufficiently.
7. Demonstrated ability to work effectively and harmoniously as part of a team as well as excellent interpersonal and communication skills to relate effectively and provide guidance to a wide range of people.
8. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

Employment in this position is conditional on satisfactory results in accordance with the Background Checking Procedure which sets out the types of checks required by each type of position. All appointments are required to make relevant declarations to comply with the National Higher Education Code to Prevent and Respond to Gender-Based Violence.

Supervisor/Delegate Name:	Andy Hogg	Date:	April 2024
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References:

[General Staff Classification Descriptors](#)

[Academic Minimum Standards](#)



Position Details

College/Div/Centre	Research and Innovation	Dept/School/Section	RIE
Position Title	Sr Research Software Engineer	Classification	
Position No.		Reference No.	

In accordance with the Work Health and Safety Act 2011 (Cth) the University has a primary duty of care, so far as reasonably practicable, to ensure the health and safety of all staff while they are at work in the University.

- This form is used to advise potential applicants of work environment and health and safety hazards prior to application.
- This form must be completed by the supervisor of the position. Without this form jobs cannot be advertised.
- Once an applicant has been selected for the position they must familiarise themselves with the University [WHS Management System Handbook](#).
- The hazards identified below are of generic nature in relation to the position. It is not correlated directly to training required for the specific staff to be engaged. Identification of individual WHS training needs must be in accordance with WHS Local Training Plan and through the WHS induction programs and Performance Development Review Process.
- Information regarding reasonable workplace adjustments that may be required to enable an individual to fulfil the inherent requirements of their position is available at [2024_ANU Inherent Requirements Reference Table.pdf](#)

Potential Hazards

Please indicate whether the duties associated with appointment will result in exposure to any of the following potential hazards, either as a **regular** or **occasional** part of the duties.

TASK	regular	occasional	TASK	regular	occasional
key boarding	☒	☐	laboratory work	☐	☐
lifting, manual handling	☐	☐	work at heights	☐	☐
repetitive manual tasks	☐	☐	work in confined spaces	☐	☐
organizing events	☐	☐	noise / vibration	☐	☐
fieldwork & travel	☐	☐	electricity	☐	☐
driving a vehicle	☐	☐			
NON-IONIZING RADIATION			IONIZING RADIATION		
solar	☐	☐	gamma, x-rays	☐	☐
ultraviolet	☐	☐	beta particles	☐	☐
infra red	☐	☐	nuclear particles	☐	☐
laser	☐	☐			
radio frequency	☐	☐			
CHEMICALS			BIOLOGICAL MATERIALS		
hazardous substances	☐	☐	microbiological materials	☐	☐
allergens	☐	☐	potential biological	☐	☐
cytotoxics	☐	☐	allergens		
mutagens/teratogens/ carcinogens	☐	☐	laboratory animals or insects	☐	☐
pesticides / herbicides	☐	☐	clinical specimens, including blood	☐	☐
			genetically-manipulated specimens	☐	☐
			immunisations	☐	☐

[PSYCHOSOCIAL HAZARDS](#) (please specify):

OTHER POTENTIAL HAZARDS (please specify):