Australian Government

ANSTO
Science. Ingenuity. Sustainability.

POSITION DESCRIPTION

Position Title:	CAS AMS Development Scientist
Cluster / Business Unit / Division	Nuclear Science and Technology
Section or Unit:	Centre for Accelerator Science
Classification:	Band 6
Job Family:	Science, Research
Position Description Number:	PD-2488
Work Contract Type:	Professional
STEMM/NON-STEMM:	STEMM
STEMM CATEGORY:	Research & Sciences

POSITION PURPOSE

The CAS AMS Development Scientist applies scientific expertise and experience for the development and automation instruments and methods, and automation of some processes for AMS analysis. This role leads the developments, evaluates, validates, and executes the new and improved methods to ensure that the specialised services provided by the CAS AMS capability meet requirements for both research and industry and are maintained at the leading edge internationally. The role requires best practice knowledge for the AMS capability to enable the best possible scientific outcomes. The role holder may also undertake AMS analysis and operate accelerator systems and assist with data interpretation.

ORGANISATIONAL ENVIRONMENT

ANSTO leverages great science to deliver big outcomes. We partner with scientists and engineers and apply new technologies to provide real-world benefits. Our work improves human health, saves lives, builds our industries and protects the environment. ANSTO is the home of Australia's most significant landmark and national infrastructure for research. Thousands of scientists from industry and academia benefit from gaining access to state-of-the-art instruments every year.

Nuclear Science & Technology (NST) incorporates ANSTO's research, innovation, landmark research infrastructure and associated platforms and capabilities. NST conducts research and development in relation to nuclear science and technology and connects people, transfers knowledge and provides nuclear-based products and services for the benefit of Australia. The Research Infrastructure portfolio consists of platforms established on scientific infrastructure and capabilities, with a number of the platforms categorised as landmark infrastructure. This includes a range of scientific assets, infrastructure, capability development & delivery for multi-decadal, multi-disciplinary, multi-user platforms for a collaborative user community and for internal research and development endeavours.

The Centre for Accelerator Science (CAS) provides expertise in accelerator science applications and is the nucleus around which new science and industry networks form as CAS scientists interact with researchers in the user, collaborator, and wider scientific community. CAS provides world-class capabilities utilising ion beam instrumentation and accelerator-based techniques for ultra-sensitive analysis and precision irradiation applications, including radioisotope dating, trace element and actinides analysis, surface modification and engineering, and radiation testing. CAS delivers techniques that not only enhance current fundamental and applied research, but also open up new avenues of investigation to Australian science. The facility promotes international collaboration to enable leading-edge research and development and is a hub for research that greatly benefits Australia and the international scientific community.

The CAS Science Group provides an end-to-end user experience to academic-based researchers, commercial, industry and government users. This includes ensuring delivery of support and access to the diverse

capabilities of CAS through the full research journey, from consultation and planning through to interpretation and publication. Members of the Science Group collaborate with other ANSTO teams to maintain world-class capabilities and to develop new capabilities and systems. They achieve high impact research outcomes in line with ANSTO's research mission and through collaborations with the user community. Science Group members also deliver highly effective outreach and training outcomes to promote the capabilities and achievements of the facility.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

- Provide research leadership and AMS development expertise for the development and implementation of new and improved techniques/instruments, and improve existing methods;
    - Research, plan and undertake method development to implement new methods or to improve existing methods to meet international best practice and support emerging applications.
    - Apply expertise to capability development activities and projects to improve and expand capabilities for research, innovation, and industry applications.
    - Contribute knowledge and expertise to the development of plans & processes concerning quality, regulatory and safety assessments for the installation and testing of new and improved AMS methods.
    - Support user projects by assisting with planning, by operating accelerator beamlines and instruments, performing experiments and data reduction, and analysing and interpreting data using established methods, and provide result findings and reports.
    - Identify new capabilities that will optimise user experience of CAS services and propose development programs (resources, work plans, and timelines) for inclusion in CAS Research & Development Plan and Asset Management Plan.
    - Liaise with the Australian and international scientific community to develop the user base for CAS to ensure maximum usage of equipment, and to develop the community of collaborators and users.
- Maintain and develop individual learning and knowledge currency;
    - Develop knowledge of international best practice and new technological developments in AMS-based techniques by performing regular literature reviews and attending relevant workshops, conferences, and symposia to improve and expand capabilities for research, innovation, and industry applications.
- Build networks through collaborative research and development;
    - Participate in professional forums and other professional associations. Highlight the impact and benefits of the facility to the scientific community, external stakeholders, and general audiences at the local and international level.
    - Use research networks to coordinate and collaborate with national and overseas scientists to produce research outcomes captured in international journals, and to increase CAS international standing as a world leader in research facilities.
    - Participate in outreach activities to promote CAS science and stimulate new opportunities and highlight the impact and benefits of the facility to the scientific community, external stakeholders, and general audiences at the local and international level.
- Undertake industry engagement activities to enable the delivery of optimal outcomes to industry and commercial-access users to support ANSTO's research translation aims. Promote techniques, capabilities and applications to industry and commercial-access users to identify industry leads and convert them to opportunities and contracts.
- Contribute to the improvement of the CAS working environment and workplace culture in a way that promotes and encourages collaboration, knowledge sharing, engagement, high quality work output and safe work practices.
- Ensure appropriate policy, procedures, and guidelines are adhered to associated with accelerator facilities in relation to WHS, radiation safety and plant/equipment.

- Undertake additional duties as required and during period of leave of other staff.

Decision Making

- The ANSTO values, organisational corporate plan, business plan, operational excellence program, the CAS strategic goals provide the context for the position.
- The position works within a framework of legislation, policies, professional standards, and resource parameters. Within this framework the position has some independence in determining how to achieve plans and objectives and must always ensure compliance to relevant regulations.
- The position is fully accountable for the accuracy, integrity, and quality of the content of advice, analysis and interpretation provided.
- Determine key work priorities within the context of agreed work plans and consult with line manager on complex, sensitive and major issues that have a significant impact.
- In consultation with team members and line managers, the position assists in the development of work plans and overall objectives and strategy.
- The levels of authority delegated to this position are those approved and issued by the Chief Executive Officer. All delegations will be in line with the ANSTO Delegation Manual AS-1682 (as amended or replaced).

Key Challenges

- Ensuring the successful completion of duties whilst managing conflicting priorities and deadlines for multiple stakeholders.
- Carry out work in a heavily regulated environment, adherence to all regulations, working in accordance with operational requirements and tight deadlines.
- Working effectively with the CAS leadership team.
- Ensuring continuous improvement and implementation of best practise.
- Improving customer service, response times and delivery efficiencies in line with ANSTO policies and procedures.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Line Manager	• Receive guidance and direction. • Provide expert, authoritative and evidence-based advice. • Recommend and gain endorsement for plans and goals and other initiatives.
Work area team members	• Establish constructive relationships and communications. • Provide advice, analysis, and recommendations. • Contribute to group-decision-making processes, planning, and goals. • Collaborate and share accountability, information, ideas, and workloads. • Combined analysis and problem resolution. • Collaborate around day-to-day operations, sample delivery, scheduling, technical maintenance, and development activities. • Collaborate on facility and experiment requirements. • Liaise to determine faults, troubleshooting and repairs. • Negotiate, communicate, and resolve conflicts.

CAS & ANSTO process owners	• Develop effective working relationships. • Liaise and consult in relation to impact of relevant ANSTO systems and process on CAS and vice versa.
External	
Suppliers and Contractors	• Regular contact depending on urgency to formulate and plan for requirements now or in the future. • To ensure effective instrument development, project management and procurement requirements.
Scientific Community (including overseas laboratories and research organisations)	• Develop and maintain national and international linkages around CAS scientific operations and research.
CAS user community	• Collaborate and communicate in a professional manner. • Establish network of contacts.

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Leader, CAS Chemistry Group
Direct Reports	Nil
Indirect Reports	Nil

Financial Data (2023/2024)	
Revenue / Grants	N/A
Operating Budget	N/A
Staffing Budget	N/A
Capital Budget	N/A
Assets	N/A

Special / Physical Requirements	
Location:	Lucas Heights Working in different areas of designated site/campus as needed.
Travel:	May be required travel to alternate ANSTO sites from time to time
Physical:	Office based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer). Some labour-intensive physical requirements from time to time (sitting, standing, infrequent manual handling up to 20kg). Public speaking. Wearing personal protective equipment for the handling of hazardous and/or radioactive materials. Occasional operation of engineering equipment or machinery, subject to suitable approvals and training. Perform duties with and in an area where hazardous chemicals or materials are handled under tightly controlled safety conditions. Operation of accelerator equipment and systems.
Radiation areas:	May be required to work in radiation areas under tightly regulated conditions. Perform duties in an area where radioactive materials are handled under tightly controlled safety conditions.

Hours:	Willingness to work extended and varied hours based on operational requirements. After hours work may be required for short and infrequent periods.
Clearance requirements:	Satisfy ANSTO Security and Medical clearance requirements.

Workplace Health & Safety	
Specific role/s as specified in AP-2362 of the ANSTO WHS Management System	All Workers Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties.

ORGANISATIONAL CHART

Refer to published Organisational Chart

KNOWLEDGE, SKILLS AND EXPERIENCE

1. PhD in Chemistry, Physics, Earth Science, a related discipline, or equivalent experience
2. Post-doctoral (or similar/equivalent) experience in a relevant area of physical sciences or applied research.
3. Experience with radiocarbon dating and sample processing for accelerator mass spectrometry.
4 Ability to troubleshoot problems on complex systems with agility and resilience in real-time.
5. Demonstrated contribution to research which has made a recognisable advancement of knowledge or its application at a national level highlighting a solid publication track record.
6. Excellent interpersonal and communication skills to work collaboratively and willingly share knowledge and information with users and other stakeholders.
7. Capability to communicate science effectively at the international level through conferences and workshops.
8. Ability to work independently and able to manage time to meet deadlines and objectives.
9. Strong customer focus and the ability to function well in a scientific user facility, work in a multi-cultural environment and develop and maintain productive working relationships.
10. Demonstrated ability to follow policy, procedures, and guidelines.
11. Personal qualities that will add value to a team operating in a high-level client/user, safety, and quality environment.

VERIFICATION

This section verifies that the line manager and appropriate senior manager/executive confirm that this is a true and accurate reflection of the position.

Line Manager		**Delegated Authority**	
Name:	David Child	Name:	Andrew Peele
Title:	Acting CAS Platform Leader	Title:	Group Executive – Nuclear Science and Technology
Signature:		Signature:	
Date:		Date:	

Appendix 1

ANSTO Job Families
Accounting & Finance
Administration
Communications & Marketing
Compliance & Regulation
Engineering and Technical
Human Resources
ICT & Digital Solutions
Information & Knowledge Management
Legal
Manufacturing
Monitoring & Audit
Operations
Organisational Leadership
Project & Program
Research
Science
Security & Intelligence
Senior Executive
Service Delivery
Strategic Policy
Trades & Labour