Australian Government

ANSTO
Science. Ingenuity. Sustainability.

POSITION DESCRIPTION

Position Title:	CAS Head of Accelerator Mass Spectrometry (AMS)
Cluster / Business Unit / Division	Nuclear Science and Technology / Centre for Accelerator Science
Section or Unit:	Accelerator Mass Spectrometry (AMS)
Classification:	Band 8
Job Family:	Organisational Leadership
Position Description Number:	PD-2575
Work Contract Type:	Science/Manager
STEMM/NON-STEMM:	STEMM
STEMM CATEGORY:	Science

POSITION PURPOSE

The CAS Head of Accelerator Mass Spectrometry (AMS) provides strategic leadership, management, and oversight of the AMS capabilities, user program, and stakeholder engagement to ensure high-quality, high-impact research outcomes and an excellent user experience. This role combines direct functional responsibility for delivery through the AMS team with strategic leadership of the future direction, partnerships, and capability development. This role is critical in enabling CAS to perform as a world-class facility that delivers excellence in AMS accelerator science for a diverse research and industry user community, both nationally and internationally. Their scientific and research leadership inspires a program of continuous improvement, attracts external funding, and drives strategic development of AMS sample preparation methods and laboratories, accelerator facilities, and analytical methodology aligned to stakeholder needs.

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 and Technology (NST) incorporate 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 Centre for Accelerator Science (CAS) is a multi-disciplinary team of scientists, technicians and engineers supporting academic and industry users across Australia and the world with a suite of accelerator instrumentation for ultra-sensitive measurement, analysis and irradiation applications. As a user facility open to all, supported by the National Collaborative Research Infrastructure Strategy, CAS informs policy, provides critical services for IAEA, and enables discovery and innovation in areas such as environment, climate and health sciences, space technologies, advanced materials for energy and quantum, and cultural heritage.

CAS operates four tandem particle accelerators and a wide range of advanced (and often bespoke, inhouse designed) engineering systems, scientific instrumentation, equipment, and technologies across twelve beamlines for accelerator science applications and twelve chemistry laboratories for specialised sample processing. CAS offers accelerator mass spectrometry, sample preparation, ion beam analysis, ion beam implantation, and ion beam irradiation - together in one centre - backed by decades of

accumulated experience in accelerator science and operations.

CAS Accelerator Mass Spectrometry (AMS) capabilities provide ultra-sensitive radionuclide detection and measurement for dating and isotope tracing applications across a broad application space, including environmental and earth sciences, hydrology, climate studies, cultural heritage, astrophysics and nuclear stewardship. The AMS capabilities encompass a broad suite of workflows to support sample preparation, measurement, and interpretation of radiocarbon, cosmogenic isotopes, and the actinides, as well as training for early career researchers and students. CAS specialises in complex, high-sensitivity, high-precision applications, with additional capabilities to support high-throughput and/or high-volume sample requirements.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

Leadership and Management

- Lead and manage the provision of advanced accelerator mass spectroscopy (AMS) analysis and characterisation services to deliver safe, compliant, efficient, high-quality, cost-effective user-service for high-impact research, and industry outcomes.
- Ensure best practice operational, safety and financial management of CAS AMS resources to deliver on agreed KPIs, metrics, contract and grant commitments, and milestones within the CAS Business Plan and NCRIS Activity Plans, in pursuit of CAS goals and supporting NST strategies.
- Lead multi-disciplinary teams of scientific and technical experts to achieve excellence by inspiring an inclusive and innovative environment that promotes psychological safety and builds a learning and growth culture.
- Formulate and prioritise plans and objectives that communicate vision and translate the CAS strategy into measurable deliverables for AMS science operations.
- As a core member of the CAS senior management team, produce content for business plans and report on CAS performance against targets and objectives, devise new ideas and strategies for growth including for streamlining and workforce development, secure collaboration and external funding opportunities.
- Develop and manage AMS outreach activities on behalf of CAS and ANSTO to engage new users, collaborators, and research partnerships, and to promote the impact of CAS to diverse stakeholder audiences.

Principal Scientist, Research Leadership

- Lead long-term strategy for AMS science program and capability investment, and design capability developments aligned to stakeholder needs, including staff development and upstream, downstream technology and methodology advancement, that boost productivity to meet increasing demand for CAS AMS capabilities and ensures CAS remains internationally competitive.
- As an internationally recognised expert with extensive experience in AMS, undertake and support novel collaborative research aligned with the strategic goals of CAS and ANSTO. Develop novel analytical techniques, capabilities and research applications that advance CAS capabilities, support and meet the needs of the CAS user community, and sustain excellence in our research impact and outcomes
- Identify and negotiate opportunities for collaborations, new users, and partnerships with mutual benefit that support the CAS focus areas, the CAS decadal plan, and the NST and NCRIS strategic imperatives
- Demonstrate research leadership, host national and international visitors, and provide training and knowledge transfer on specific techniques through supervision of PhD student and early-career researcher projects
- Represent ANSTO and CAS within global forums and foster value-add partnerships with local and global communities, to inform strategic decisions and planning for advancements in AMS accelerator science and instrumentation

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

Decision Making

- The ANSTO values, organisational corporate plan, operational excellence program, NST strategy and CAS business plan provide the context for the position.
- The position is expected to lead long-term planning for AMS platform development, including capability investment, stakeholder alignment, and scientific positioning. The role contributes to CAS-wide strategic direction and represents AMS in infrastructure planning exercises and national collaborations.
- As a member of the CAS leadership team, the position contributes to organisation-wide decision-making and strategic planning, advising on AMS relevance to cross-cutting priorities such as environmental monitoring, radiochemistry, digital infrastructure, and resilience.
- The position works within a framework of legislation, ANSTO policies, professional standards and resource parameters. Within this framework, the position will be provided with the parameters in which to operate the facilities including decisions pertaining to project planning and resource allocation. The position has independence for decision making on methods and approaches for project planning and allocation of resources within CAS AMS and is fully accountable for delivering outcomes within agreed timeframes and budgets.
- The position is fully accountable for the accuracy, integrity and quality of the content of advice provided to users, staff, and CAS Director and is required to ensure that decisions are based on sound evidence.
- The position has full accountability for delivery of AMS outcomes within agreed scopes. Complex, sensitive, or high-impact decisions (e.g. major investment redirection, staff restructure, or cross-program trade-offs) are escalated to the CAS Director for endorsement.
- The position will be provided a budget developed by management within the constraints of which the position is expected to operate. The position will have authority to assign and approve expenditure within limits designated by the delegations manual and approve work hours and staff leave requests.
- 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

- Sustaining excellence in CAS AMS capabilities and services as a world-class facility, identifying and prioritising opportunities to advance capabilities, maintaining relationships within the community to engage new users and collaborators, leading across functional boundaries within CAS, where success depends on coordination, influence, and mutual prioritisation
- Developing new methods and research in the relevant field. Keeping abreast of recent and emerging developments in field, ensuring continual improvement and implementation of best practise.
- Maintaining a research leadership profile and expertise, positioning AMS as a nationally recognised capability in the face of evolving scientific and infrastructure priorities, and ensuring the platform responds to both research and public-good missions
- Delivering results and outcomes to the required standards and timeframes, given the need to be agile and responsive to opportunities, and adapt in an often changing and unpredictable environment.
- Balancing high-throughput operational demands with low-throughput, highly-complex and resource heavy programs — each with different infrastructure, funding models, and stakeholder needs.
- Understanding the objectives of a wide range of user research projects to ensure the provision of expert advice to facilitate successful project outcomes, from sample collection, analysis, data interpretation to the preparation of manuscripts for journal publications.

- Performing method improvement and capability development in short or changing timeframes, to ensure maintenance of world leading capabilities of the facility.

KEY RELATIONSHIPS

Who	Purpose
Internal	
CAS Director (Line Manager)	• Receive direction and guidance • Provide regular updates on key tasks, issues & priorities • Provide expert, authoritative and evidence-based advice • Support and implement staff engagement and quality recruitment • Negotiate and report on budgets, financial performance and resources consistent with objectives, plans, targets and goals • Staff performance (APEA review of staff) and attendance and instruction on dealing with staff issues or problems • Recommend and gain endorsement for improvement or development plans and goals and other initiatives
CAS Head of Operations	• Ensure safe and compliant operations within AMS sample preparation laboratories and accelerator facilities • Ensure compliance with safety and quality systems and applicable legislation and regulations • Negotiate resourcing for maintenance and development of equipment, laboratories and capabilities • Provide expert knowledge and input for capital development plans and asset management
CAS Management Team (Peers)	• Support team members and work collaboratively to contribute to achieving outcomes • Contribute to CAS decision making processes, planning and goals • Collaborate and share accountability • Negotiate and resolve conflicts
CAS AMS team leaders (Direct Reports)	• Provide management, guidance and support • Provide coaching, career counselling, mentoring, supervision, instruction, direction, support, recognition, training, and performance and attendance monitoring & review. • Communicate work plans and activities and monitor outputs. • Monitor trends, performance and progress against the operational plans and communicate adjustments to work priorities which may be required to ensure delivery against the plan
External	
Facility users and collaborators from Universities, Industry, National and International Research organisations.	• Ensure laboratory and accelerator availability within appropriate timescales, co-ordinate usage • Ensure CAS AMS science capabilities are fit for purpose and meeting user needs • Position AMS as a national capability, inform strategic planning, and align delivery to national science and resilience goals • Provide expert advice, analysis, training, guidance and supervision • Build and maintain relationships, partnerships • Assess competence to undertake activities within laboratory/s • Understand user requirements and desired outcomes • Contribute to the preparation of manuscripts for journal publications

Suppliers	• Negotiate specifications and costs for procurement and contracts for service and delivery schedules

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Director, CAS
Direct Reports	4 x AMS Team Leads
Indirect Reports	18 x Accelerator Scientists, Chemistry Specialists and Technicians 1 x QC Chemist

Financial Data (2025/2026)	
Commercial Revenue / NCRIS Grants	$1.9M
Operating Budget	$200k
Staffing Budget	$2.5M
Capital Budget	$200k
Assets	

Special / Physical Requirements	
Location:	Lucas Heights Working in different areas of designated site/campus as needed
Travel:	May be required travel to ANSTO sites from time to time Infrequent travel both internationally and nationally
Physical:	Office based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer) Laboratory facility physical requirements ((lifting, standing for long periods, operating machinery, equipment) Public speaking Wearing personal protective equipment for the handling of hazardous materials
Radiation areas:	May be required to work in radiation areas under tightly regulated conditions Perform duties with and in an area where hazardous chemicals or 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 Maybe required to obtain and maintain appropriate federal government clearance

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

ORGANISATIONAL CHART

On file

KNOWLEDGE, SKILLS AND EXPERIENCE

1. PhD in relevant field of science (e.g. physics, materials, chemistry, environmental science, radiochemistry) or equivalent tertiary qualification coupled with extensive experience in scientific field.
2. Extensive experience and knowledge in the design and implementation of strategies for growth, collaboration, research and innovation that ensures CAS AMS infrastructure and techniques are world-class.
3. Proven experience in the provision of governance support to achieve business and operational strategy outcomes.
4. Proven experience in the provision of financial management, forecasting, planning (both financial and workforce/succession) and cost control.
5. Demonstrated ability to provide expert advice to users, researchers and commercial clients.
6. Proven extensive/broad experience in managing laboratory and accelerator operations in a user-based research environment to achieve scientific excellence, desired organisational outcomes and achieving optimal work performance.
7. Demonstrated experience in mentoring and supervising laboratory staff and visiting scientists and allocating resources effectively to achieve outcomes in a variety of circumstances.
8. Demonstrated ability to facilitate training in specialised analytical and chemical techniques.
9. Strong interpersonal and communication skills with the ability to interact and communicate with a varied and multidiscipline audience and to develop and maintain productive working relationships.
10. Extensive experience operating within laboratory quality, safety and regulatory requirements (WHS, radiation safety, ARPANSA regulations, quality systems).
11. Demonstrated ability to represent the organisation at national and international forums as an expert in a relevant scientific field.

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:	Ceri Brenner	Name:	Andrew Peele
Title:	Director, CAS	Title:	Group Executive, Nuclear Science and Technology
Signature:		Signature:	
Date:		Date:	