

Radiocarbon Scientist



The purpose of this position is to support the Rafter Radiocarbon Laboratory and AMS operation, and to undertake scientific research utilising these capabilities.

Reports to:	Laboratory Manager, Rafter Radiocarbon and XCAMS
Department:	Laboratories and Collections
Group:	Science
Tenure:	Permanent
Location:	Lower Hutt
Direct reports:	Nil
Budget:	Nil
Career Path:	Research
Job Family:	Research
Career Step:	To be confirmed
Date:	August 2022

Position priorities and responsibilities

Scientific Research

The role involves:

- Development, planning and implementation of research utilising radiocarbon in a field or fields aligned with GNS Science research priorities, including but not limited to: atmospheric sciences, groundwater, oceanography, paleoenvironments including change due to natural hazard events and climate.
- Planning, execution and reporting of established research projects
- Author scientific papers and present research at conferences
- Funding applications
- Mentor and train technicians and students engaged in this research

Laboratory support

The role involves:

- Operation of the XCAMS accelerator mass spectrometer system, including routine operation, maintenance, measurement data reduction and data quality
- Development of radiocarbon sample preparation capabilities through development of new instrumentation, improvements to existing instrumentation and evaluation of performance
- Liaising with research and commercial clients

- Proactive detection and remedy of technical faults and situations that may impact on analytical quality
- Plan and undertake measurement tasks, upgrade projects and keep operating procedures up to date including maintaining stocks of consumable and replacement parts
- Deliver high quality outputs on time within budget

Communication

- Liaise effectively with members of the radiocarbon lab to ensure efficient teamwork across the overall operations
- Communicate scientific research through authorship or co-authorship of scientific publications papers or reports, approved conference presentations and seminars
- Routinely communicate with colleagues within GNS and with internal and external stakeholders

Projects

- Undertake projects for your manager as and when required

Responsibilities of all staff

- Comply with all GNS Science policies and procedures.
- Contribute to making GNS Science a healthy and safe place to work by complying with the responsibilities and accountabilities outlined in the Health and Safety Management System Framework.

The responsibilities of this position will change over time to respond to changing needs. The incumbent will need the flexibility to adapt and develop as the company and its environment evolves.

Key working relationships

Internal:

- Radiocarbon laboratory team, radiocarbon science leader, GNS scientists and technicians
- Earth and environmental processes and modelling team, support staff and senior managers
- Environment and Climate theme team and research leaders

External:

- External commercial clients and collaborators
- Scientists and stakeholders, iwi/hapu groups

Person specification

Skills, knowledge and attributes

- Familiarity with ¹⁴C sample processing and AMS measurement including standardisation and data management
- Practical experience and knowledge of radiocarbon laboratory equipment and procedures
- Expertise in vacuum technologies
- Ability to work reliably and adhere to strict procedures
- Adaptable with the ability to work in teams and independently
- Meticulous attention to detail including clear and accurate record keeping
- Competence in one or more scientific programming language

- Ability to communicate results clearly through written scientific papers and oral presentations
- Understanding of good practice health and safety practices including safe work practices in high voltage or radiation areas

Experience

Essential:

- Experience in an AMS radiocarbon laboratory environment
- Expertise in radiocarbon data analysis
- Have a track record in one or more radiocarbon applications relevant to GNS Science
- Ability to communicate scientific concepts clearly and concisely orally and in writing for a range of audiences

Desirable:

- Experience with ^{10}Be and/or ^{26}Al AMS measurement including standardisation and data management

Qualifications

Essential:

- PhD in earth sciences, physics, chemistry or related discipline

Other requirements

Essential:

- Strong communication skills both verbal written
- Ability to work well in a team

Desirable:

- First aid certificate
- Full drivers' licence
- Approved chemical handling certificate

Performance Dimensions

At a high level, GNS Science recognises six **Performance Dimensions**: three relate to technical capability, one relates to leadership (if applicable) and two relate to the way we work. Below are the general expectations that are the minimum standards expected of all staff. There are also expectations that specifically relate to the career step associated with the role; you can find these on GNS Online.

Technical capabilities

Scope, complexity and innovation

- Enduring commitment to maintaining and developing skills and knowledge in area of expertise.
- Both the ability and desire to apply appropriate rigour, principles and practices to deliver quality work in a cost-effective manner.
- Acts in a manner that conveys high personal and professional standards.
- Open to coaching and feedback – incorporates suggestions to find better ways of doing things (to improve own and GNS Science performance).

Contribution to GNS Science / profession

- Establishes and maintains effective and collaborative working relationships – with colleagues and external individuals and groups.

- Both the ability and commitment to work in a culturally responsive and inclusive manner; respecting and valuing the diverse perspectives of individuals and groups.
- Takes an interest in early career colleagues, graduates and students – provides coaching and/or mentoring as appropriate. Supports initiatives to promote science careers.
- Prevents harm to self and others by carrying out duties safely and responsibly.

Delivery of work

- The ability and commitment to deliver pieces of work and projects on time to required quality, cost and benefit parameters.
- The application of appropriate project management rigour, principles and practices to delivering quality projects in a cost-effective manner

Behavioural expectations

Manaakitanga – we do the right thing

Champions a positive working culture. Works and interacts with colleagues, external partners, stakeholders and customers in a way that is consistent with our values:

- We are **CONNECTED** in our purpose; with each other, with partners and stakeholders and with our communities.
- We are **INSPIRED** by our work to explore, challenge, innovate and aim higher.
- We are **EMPOWERED** to be our best – valued for our differences, encouraged to contribute and enabled to grow and develop.

Bicultural commitment

- As a Crown Research Institute, GNS Science is committed to partnering with iwi/hapū and Māori communities and agencies to achieve their science aspirations.
- We do this in a way that is culturally appropriate (**tikanga**) and honours Māori and non-Māori worldviews (**te ao**).

These expectations are intended to support and guide the development of individual staff.