POSITION DESCRIPTION

Senior Research Associate <u>OR</u> Postdoctoral Fellow (Level B) / Senior Research Fellow (Level C)

Position Level	Academic B/C
Faculty/Division	DVC-Research & Enterprise
Position Number	ADMIN ONLY
Original document creation	September 2024

Position Summary

Research Imaging New South Wales (RINSW) serves as the human imaging research core facility at UNSW. Fully embedded within the clinical setting of the Prince of Wales Hospital, RINSW offers a distinctive imaging infrastructure within the Randwick Health Innovation Precinct. This setup enables basic, translational, and clinical research across diverse age groups, cohorts and a variety of research questions.

The **Senior Research Associate/Postdoctoral Fellow (Level B)** is expected to support the Imaging Facility Director and RINSW team as well as facility users by carrying out project related research and analyses at RINSW and to develop research expertise in advanced imaging processing relevant to the facility's ongoing research projects.

A **Senior Research Fellow (Level C)** is expected to make original contributions to the research efforts and infrastructure at RINSW and to those of their research partners. They will play a major role in developing post processing strategies for respective projects and may lead respective components of the collaborative research including data analyses.

The primary focus of this position will be on the development, application and translation of advanced MR signal processing methods (including AI/machine learning) and pipelines for image reconstruction, data modelling and analysis. Initially these methods will be applied to research in neuroscience, clinical and translational neurological and neurocognitive diseases and population health. Over time, the focus of this position may broaden to include non-neuro applications and other imaging or signal-generating modalities beyond MR.

The role of **Senior Research Associate OR Postdoctoral Fellow (Level B) / Senior Research Fellow (Level C)** reports to the Imaging Facility Director and has no direct reports.

Level B

Accountabilities

Specific accountabilities for this role include:

- Engage in collaborative research in a core facility environment in a manner consistent with disciplinary practice.
- Conduct research/scholarly activities under limited supervision, either as a member of the facility's research team and develop a collaborative research profile.
- Oversee and design new imaging protocols and provide collaborative research support to researchers accessing RINSW.
- Contribute to the development of applications for competitive funding such as Research Equipment and Infrastructure Grants under the guidance of senior colleagues.
- Co-mentor and guide students and colleagues and develop the next generation of academics through involvement in supervision and training of HDRs (as per the norms of the discipline).
- Collaborate with investigators and RINSW staff to operationalise research hypotheses and develop imaging analysis plans to achieve study objectives.
- Focus on biomedical modelling, simulation, and data analytics to enable scientific discovery in neuroscience, biomedicine and health.
- Develop and evaluate imaging processing strategies & pipelines and analyse project data.
- Strong commitment to engaging in collaborative research in a core facility environment
- Contribute to the broader activities of RINSW and the Division of Research and Enterprise.
- Align with and actively demonstrate the Code of Conduct and Values
  Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.

Level B

Skills and Experience

- A PhD in a related discipline, and/or relevant work experience
- Proven commitment to proactively keeping up to date with discipline knowledge and developments.
- Demonstrated track record in research with outcomes of high quality and high impact (e.g., first-authored scientific publications in peer-reviewed journals) with clear evidence of the desire and ability to continually achieve research excellence as well as the capacity for research leadership.
- Evidence of strong analytical skills and critical thinking.
- Strong quantitative data analysis skills in signal processing, and strong skills in scientific computer programming; familiarity with computational tools and programming (e.g., MATLAB, Python, C/C++).
- Demonstrated research experience in medical image analysis and processing, e.g., in analysing neuroimaging data such as fMRI, DTI, or MRS and ability to use dedicated software packages/pipelines for specific processing (e.g., Bash or python pipelines containing FSL, Neurodesk, Freesurfer, MRtrix, AFNI, R, MATLAB, or SPM scripts).
- A track record of significant involvement with the profession and/or industry.
- High level communication skills and ability to network effectively and interact with a diverse range of students, staff and facility clients.
- Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships.
- Evidence of highly developed interpersonal and organisational skills.
- An understanding of and commitment to UNSW's aims, objectives and values in action, together with relevant policies and guidelines.
  Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.

Level C

Accountabilities

Specific accountabilities for this role include:

- Make contributions to collaborative facility research that have a significant impact in their field of expertise and create a nationally recognised research track record and research reputation for the facility.
- Enhance the RINSW research team's service in areas of specialist expertise and research methods that are appropriate to the discipline.
- Develop research collaborations both within UNSW and externally and provide research support to researchers accessing RINSW.

- Develop and implement AI/DL methods for image and data analyses and analytics for suitable imaging facility projects and deliver solutions of AI, ML and DL for e.g., multi-dimensional and/or multi-modal data.
- Attract peer recognition and establish research networks (based on the norms of the discipline) at the national level.Take a significant role in the development and delivery of (collaborative) publications of high-quality research findings and in the development and delivery of the facility's Research Equipment and Infrastructure Grants, collaborative grant applications and/or business plans.
- Participate as co-investigator in competitive grant applications or show evidence of active participation in research collaborations funded by competitive grants.
- (Co-)mentor and guide students, research groups, and colleagues; (co-)supervise and train HDRs, and contribute to HDR review panels if possible.
- Align with and actively demonstrate the [UNSW Values in Action: Our Behaviours](#) and the [UNSW Code of Conduct.](#)
- Ensure hazards and risks are identified and controlled for tasks, projects and activities that pose a health and safety risk within your area of responsibility.

Level C

Skills and Experience

- A PhD in a related discipline, and/or relevant work experience.
- Proven commitment to proactively keeping up to date with discipline knowledge and developments.
- Demonstrated track record in research with outcomes of high quality and high impact (e.g., first-authored scientific publications in peer-reviewed publications) commensurate with Level C, with clear evidence of the desire and ability to continually achieve research excellence as well as demonstrated capacity for research leadership.
- Evidence of strong analytical skills and critical thinking.
- Strong quantitative data analysis skills in signal processing, and strong skills in scientific computer programming; familiarity with computational tools and programming (e.g., MATLAB, Python, C/C++).
- Demonstrated research experience in medical image analysis and processing, e.g., in analysing neuroimaging data such as fMRI, DTI, or MRS and ability to use dedicated software packages/pipelines for specific processing (e.g., Bash or python pipelines containing FSL, Neurodesk, Freesurfer, MRtrix, AFNI, R, MATLAB, or SPM scripts).
- A track record of significant involvement with the profession and/or industry.
- High level communication skills and ability to network effectively and interact with a diverse range of students, staff and facility clients.
- Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships.

- Evidence of highly developed interpersonal and organisational skills.
- An understanding of and commitment to UNSW's aims, objectives and values in action, together with relevant policies and guidelines.
- Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.

Pre-employment checks required for this position

- Verification of qualifications

About this document

This Position Description outlines the objectives, desired outcomes, key responsibilities, accountabilities, required skills, experience and desired behaviours required to successfully perform the role.

This template is not intended to limit the scope or accountabilities of the position. Characteristics of the position may be altered in accordance with the changing requirements of the role.