

Position Description

Senior Research Fellow AI and Digital Innovation

Classification:	Psychologist Grade 3 or Medical Scientist Grade 3
Business unit/department:	Parent-Infant Research Institute (PIRI)
Work location:	Austin Hospital ☐ Heidelberg Repatriation Hospital ☒ Royal Talbot Rehabilitation Centre ☐ Other ☐ (please specify)
Agreement:	Victorian Public Health Sector (Medical Scientists, Pharmacists and Psychologists) Single Enterprise Agreement 2021-2025
	Choose an item.
	Choose an item.
Employment type:	Fixed-Term Full-Time
Hours per week:	Preferred: 38 hours Job share may be considered
Reports to:	Professor Jeannette Milgrom, Director, Parent-Infant Research Institute
Direct reports:	Professor Jeannette Milgrom
Financial management:	Budget: NA
Date:	July 2026

Austin Health acknowledges the Traditional Custodians of the land on which we operate, the Wurundjeri Woi Wurrung People of the Kulin Nation. We pay our respects to Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples.

Position purpose

We are seeking to expand the team at the Parent Infant Research Institute (PIRI). This position will require the applicant to have substantial AI skills.

The Parent Infant Research Institute (PIRI) is seeking an experienced Senior Research Fellow as part of a strategic initiative to leverage advanced AI technologies to improve access to evidence-based parent-infant health information and resources and enhance our digital treatment programs. For example, a current initiative is the development and integration of a generative AI chatbot designed to support parents and families using online perinatal mental health programs.

This is a unique opportunity to pioneer the application of generative AI in the parent-infant mental health domain, contributing to both technological innovation and meaningful clinical impact, as well as producing tools that are technically sophisticated.

This candidate will have a relevant postgraduate degree, preferably a PhD, and:

- Excellent written communication skills with demonstrated publication record in peer-reviewed journals
- Ability to work collaboratively in interdisciplinary teams

About the Parent-Infant Research Institute (PIRI)

Parent-Infant Research Institute (PIRI).

PIRI is a not-for-profit independent organization committed to supporting parents and babies (0-24 months) to enhance parent well-being perinatal mental health and children's healthy development. PIRI provides a unique contribution to early intervention in Australia and comprises of an expert team of clinical and academic staff.

This position is within the Parent-Infant Research Institute (PIRI) (see www.piri.org.au). The Parent-Infant Research Institute (PIRI) is based at Austin Health, Melbourne. PIRI also has strong links with the **University of Melbourne, School of Psychological Sciences** with potential joint honorary appointments for its staff, and through its Director who is a Professorial Fellow. In addition, the Institute of Breathing and Sleep (IBAS) administer PIRI grants and provides the umbrella body for research institutes at Austin.

PIRI also works closely with Austin Health's Mental Health Division particularly with the co-located Perinatal Community Services and Austin's Parent Infant Program - Inpatient (APIP).

PIRI has extensive links with national and international collaborators and has partnered with numerous agencies.

About PIRI

PIRI's research has focused on developing and delivering innovative evidence-based treatments to improve emotional difficulties facing parents and infants. PIRI's specialty areas include screening, developing, evaluating and implementing both face-to-face and online treatments for perinatal depression and anxiety for both mothers and fathers and specialty parent infant programs. PIRI also conducts basic research to understand risk factors for perinatal mental health problems and contributes to major public health initiatives, including translating research into practice.

PIRI is considered an international leader in research in perinatal mental health and its impact on mothers, fathers, and infants. PIRI is engaged in a number of prestigious projects including leading a NHMRC Centre of Research Excellence [STePPS CRE Home - STePPS CRE](#) We also deliver our MumMoodBooster and DadBooster online CBT treatment programs nationally, effective for those with more severe symptoms: a significant accomplishment in Australian mental health research translation, Over the past 15 years we have conducted RCTs which have been translated to real world implementation, funded by the Federal Government, MumSpace (www.mumspace.org.au) and <https://www.dadspace.com.au/>).since 2017. These evidence-



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based digital supports and e-treatments for perinatal depression and anxiety and attracted national attention with over 200,000 visits to the stepped care resources to date.

Our NHMRC Centre of Research Excellence is entitled “*Science Translation for e-Psychological Perinatal Supports*” (STePPS CRE). The CRE is building on the MumMoodBooster programs and expanding the scope to include prevention programs for fathers and infants. The NHMRC Centre of Research Excellence grant will drive the development of digital technology for perinatal mental health as a national centre. In the next phase of our work we will also look at the application of AI to enhance digital treatments.

The STePPS CRE is a national research centre driving the identification, development, and translation of the most effective, cost-effective, and sustainable e-mental health interventions in the first 1,000 days (conception to 2 years). We aim to make major inroads in increasing uptake and reducing the enduring burden of disease.

About Austin Health

Austin Health is one of Victoria’s largest health care providers. It delivers services for patients across four main sites in Melbourne, in locations across the community, in people's homes, and within regional hospitals across Victoria. It is an internationally recognized leader in clinical teaching, training, and research, with numerous university and research institute affiliations.

The Austin employs approximately 9,500 staff and is known for specialist work in cancer, infectious diseases, obesity, sleep medicine, intensive care medicine, neurology, endocrinology, mental health, and rehabilitation.

Austin’s vision is to shape the future through exceptional care, discovery, and learning. This is supported by values which define who we are and shapes the culture and the behaviours of its people.

The Austin aims to provide an inclusive culture where all staff can contribute to the best of their ability and strive to develop further. It recognizes that their people are their greatest strength. It wants them to thrive, be their best selves and feel engaged, safe, and empowered. To achieve this, diversity and inclusion is essential to their culture and values.

Position responsibilities

Role Specific:

This position is for a Senior Research Fellow with an understanding of psychological research and an ability to take a lead role in the AI research stream at PIRI. The Senior Research Fellow will play a key role in supporting the work of PIRI, and the Executive Director of PIRI.

The role will involve:

AI/Chatbot Development & Technical Expertise

- Design, develop, and optimize AI-powered chatbot systems using current LLM frameworks and generative AI technologies



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- Conduct technical research and experimentation to evaluate chatbot performance, safety, and effectiveness
- Implement RAG (Retrieval-Augmented Generation) systems and other advanced LLM techniques relevant to parent-infant health contexts
- Ensure chatbot responses are evidence-based and aligned with current clinical guidelines

Research & Evaluation

- Design and conduct rigorous testing protocols for chatbot accuracy, safety, and bias detection
- Contribute to research publications evaluating the chatbot's effectiveness and impact
- Collaborate on ethics and safety assessments specific to AI applications in parent-infant health
- Analyze user interaction data to inform iterative improvements

Integration & Implementation

- Lead technical integration of chatbot systems with PIRI website and digital platforms
- Provide technical expertise to support our implementation science partner
- Document technical architecture and system specifications
- Troubleshoot and optimize implementation challenges

Writing & Dissemination

- Author peer-reviewed publications on chatbot development, validation, and outcomes
- Write technical documentation and user guides
- Contribute to grant applications and research proposals
- Prepare manuscripts for high-impact journals in health informatics and AI

Leadership & Collaboration

- Supervise and mentor junior research staff and students
- Collaborate with multidisciplinary teams, including clinicians, researchers, and web developers
- Contribute to team training in AI/chatbot best practices

The Senior Research Fellow SRF will be responsible for ensuring that the scientific quality of research conducted in the Institute is of a high standard. The SRF will collaborate with senior staff on such issues, give supervision to students, and provide direct assistance with experimental design/statistics for associated researcher:

- Provide leadership for applications for research funding either individually and/or as part of the team.
- The SRF may be involved in day-to-day overseeing selected projects. A self-directed, proactive and team-minded approach is needed. The SRF is involved at all stages of projects from concept, development, grant submissions and ethics applications, through to supervision of junior staff, and up to analysis, conference/seminar presentation, and publication of results.
- Supervising the conduct of a number of studies by junior research staff and students.
- Report compilation and contribution to funding submissions and academic papers will comprise a large part of the SRF's job. The SRF will disseminate results in the form of conference presentations, academic publications, electronic media, and in-house journal/newsletter production.



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- Some liaisons with agencies and subjects are involved. The SRF will be involved with start-up and monitoring of on-site data collection procedures at hospitals, working in cooperation with professional statisticians, scientists, outside agencies, other PIRI staff, midwives and other health professionals.
- Other duties as required.

All Employees:

- Comply with Austin Health [policies & procedures](#) as amended from time to time.
- Comply with the Code of Conduct and uphold our values, and diversity and inclusion commitments.
- Maintain a safe working environment for yourself, colleagues and members of the public by following organisational safety, quality & risk policies and guidelines.
- Escalate concerns regarding safety, quality and risk to the appropriate staff member, if unable to rectify yourself.
- Promote and participate in the evaluation and continuous improvement processes.
- Comply with the principles of person centred care.
- Comply with requirements of National Safety & Quality Health Service Standards and other relevant regulatory requirements.
- Comply with Austin Health mandatory training and continuing professional development requirements.
- Work across multiple sites as per work requirements and/or directed by management.

Selection criteria

We are looking for a senior researcher, with experience in AI, and a good understanding of psychological and implementation research who:

- Would like to develop a career in research in perinatal mental health and build up their own research team as part of PIRI's central goals by attracting grant funding.
- Has the ability to make independent and original contributions to PIRI research which have a significant impact and a demonstrated record of published work in top peer-reviewed academic journals.
- With 5-10 years postdoctoral experience.
- Familiarity with advanced statistical analyses
- A proven capacity to write clearly and accurately to the highest professional standards while managing and prioritizing a large throughput of large, complex documentation is absolutely essential.
- Demonstrated expertise in large language models (LLMs) and generative AI systems
- Proven track record of developing and deploying AI solutions in healthcare or clinical research settings
- Strong programming skills (Python, JavaScript, or similar)
- Experience with chatbot development frameworks and technologies
- Excellent written communication skills with demonstrated publication record in peer-reviewed journals
- Strong interpersonal skills and ability to work collaboratively in interdisciplinary teams



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- **Essential Knowledge and skills:**

- PhD or equivalent postgraduate qualification
- Professional psychological science background and extensive experience and publication record in quantitative research methodology.
- Proven track record of peer-reviewed publication and grant application / reporting.
- Excellent experimental design and statistical analysis skills.
- Knowledge of perinatal depression and its impact on the lives of infants and their parents.
- Experience in liaising and collaborating with other agencies
- Organizational skills and team management experience.
- Ability to follow complex protocols with attention to detail.
- Independent worker able to work in a busy team environment.
- Flexibility and readiness to multi-task.
- Interpersonal skills, particularly in all forms of communication.
- Experience integrating AI systems into web platforms and apps
- Knowledge of ethical frameworks and safety considerations in AI/healthcare

Desirable

- Experience with health informatics or digital health implementation
- Familiarity with RAG (Retrieval-Augmented Generation) systems
- Driver's license
- Background in health research
- SPSS, SAS, NCSS/PASS and a demonstrable ability to work independently in programming environments. Extensive experience in path analysis, multiple logistic regression modeling (both binary and multinomial); ROC analysis; PC analysis; the various extensions of ANOVA-ANCOVA- and MANOVA-based methods and expertise in power and sample size analyses. The ability to identify and rapidly master further statistical methods as needed. Familiarity with and demonstrated ability to implement CONSORT standards.

Professional qualifications and registration requirements

- PhD in Computer Science, Data Science, AI/Machine Learning, psychology or equivalent research experience.

All appointments are made subject to a satisfactory National Police Check and if required, a Working with Children Check.

Quality, safety and risk – all roles

All Austin Health employees are required to:

- Maintain a safe working environment for yourself, colleagues and members of the public by following organisational safety, quality and risk policies and guidelines.



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- Escalate concerns regarding safety, quality and risk to the appropriate staff member, if unable to rectify yourself.
- Promote and participate in the evaluation and continuous improvement processes.
- Comply with the principles of person-centered care.
- Comply with requirements of National Safety and Quality Health Service Standards and other relevant regulatory requirements.

Other conditions – all roles

All Austin Health employees are required to:

- Adhere to Austin Health's core values: *our actions show we care, we bring our best, together we achieve, and we shape the future.*
- Comply with the Austin Health's Code of Conduct policy, as well as all other policies and procedures (as amended from time to time).
- Comply with all Austin Health mandatory training and continuing professional development requirements.
- Provide proof of immunity to nominated vaccine preventable diseases in accordance with Austin Health's immunisation screening policy.
- Work across multiple sites as per work requirements and/or directed by management.

General information

Cultural safety

Austin Health is committed to cultural safety and health equity for Aboriginal and/or Torres Strait Islander People. We recognise cultural safety as the positive recognition and celebration of cultures. It is more than just the absence of racism or discrimination, and more than cultural awareness and cultural sensitivity. It empowers people and enables them to contribute and feel safe to be themselves.

Equal Opportunity Employer

We celebrate, value, and include people of all backgrounds, genders, identities, cultures, bodies, and abilities. We welcome and support applications from talented people identifying as Aboriginal and/or Torres Strait Islander, people with disability, neurodiverse people, LGBTQIA+ and people of all ages and cultures.

Austin Health is a child safe environment

We are committed to the safety and wellbeing of children and young people. We want children to be safe, happy and empowered. Austin Health has zero tolerance for any form of child abuse and commits to protect children. We take allegations of abuse and neglect seriously and will make every effort to mitigate and respond to risk in line with hospital policy and procedures.



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