



THE UNIVERSITY OF WESTERN AUSTRALIA

Position Title:	Research Associate
Position Classification:	Level A
Position Number:	314204
Faculty/Office:	Faculty of Science
School/Division:	School of Physics
Centre/Section:	International Centre for Radio Astronomy Research
Supervisor Title:	Research Assistant Professor / ARC Research Fellow
Supervisor Position Number:	313777

About the University

The University of Western Australia has an international reputation for excellence and enterprise and has been rated as one of the best comprehensive universities in Australia. It is one of the country's leading research institutions as demonstrated by our Nobel Laureate and is the only WA member of the prestigious "Group of Eight" research universities.

Vision and Values

The University of Western Australia vision is achieving international excellence.

Its core values underpinning our activities are a commitment to:

- A high performance culture designed to achieve international excellence
- Academic freedom to encourage staff and students to engage in the open exchange of ideas and thought
- Continuous improvement through self-examination and external review
- Fostering the values of openness, honesty, tolerance, fairness, trust and responsibility in social, moral and academic matters
- Transparency in decision making and accountability
- Equity and merit as the fundamental principles for the achievement of the full potential of all staff and students

All staff are expected to comply with the Code of Ethics and the University's Code of Conduct and demonstrate a commitment to its Equity and Diversity and Safety principles and the General Capabilities of personal effectiveness, working collaboratively and demonstrating a focus on results. Details of the University policies on these can be accessed at http://www.hr.uwa.edu.au/publications/code_of_ethics, <http://www.equity.uwa.edu.au> and <http://www.safety.uwa.edu.au/policies>.

Your work area

Over the coming decade, large surveys on cutting-edge radio telescopes, culminating with the Square Kilometre Array (SKA), will provide unique insights into the distribution of gas on both galactic and cosmological scales over the last several billion years of cosmic time. The results of these surveys will revolutionise our understanding of the physical processes that drive galaxy formation and evolution, including how the gas accretes onto galaxies, star formation and feedback from stars and accreting super-massive black holes. Cosmological galaxy formation simulations, the work area of the PDRA, provide a powerful tool for the design and interpretation of these surveys, and efforts are underway at ICRAR/UWA to develop both the simulations and analysis framework to support these surveys.

Organisation chart

Research Assistant Prof
Position 313777

Research Associate
314204

Your role

The successful PDRA will play a key role in the simulations and theoretical efforts at ICRAR, developing and implementing galaxy formation models in the context of the "Baryon cycle in the Cosmic Web", using cosmological simulations on state-of-the-art supercomputers and creating synthetic observational datasets from these simulated datasets to pit the model predictions against current and future observations. The project will require expertise in theoretical and computational astrophysics, statistical analysis and high-performance computing. The PDRA will work under the supervision of Dr. Claudia Lagos and in collaboration with the theory group at ICRAR.

Key responsibilities

- Generation and detailed analysis of cosmological simulations of galaxies in the cosmic web.
- Creation of synthetic observational datasets to be compared with current and future survey results.
- Conduct world-class scientific research and publish in international refereed journals.
- Contribute to the supervision of undergraduate and postgraduate research students.

Your specific work capabilities (selection criteria)

- PhD in computational astrophysics or related discipline.
- Research ability and knowledge of cosmological simulations and computational fluid dynamics.
- Excellent verbal and written communication skills.
- Ability to participate effectively in distributed scientific collaborations.
- Strong publication record evidenced by international refereed publications.
- Excellent computing and data management skills.
- Good planning and organisational skills.
- Ability to work productively as part of a team that includes students.
- Ability to contribute to outreach and/or educational programmes.

Special Requirements (selection criteria)

Please submit a CV, the names and contact details of three referees, a description of your past research achievements (2 pages max.), and an outline of your future proposal (3 pages max.).

Position Approvals

Approvals are now electronic. No signature section needed.