CSIRO-UWA Chair in Complex Engineering Systems

INFORMATION FOR CANDIDATES
Appointment of

CSIRO-UWA Chair in Complex Engineering Systems

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Introduction

Applications are invited for the newly established CSIRO-UWA Chair in Complex Engineering Systems. As an inspirational leader, the Chair will develop a multi-disciplinary team that delivers exceptional teaching and research in Engineering for Remote Operators (ERO). Bringing together significant numbers of researchers the Chair will foster comprehensive research into all aspects of complex engineering systems that produces graduates and research that meet the needs of industry and make a valuable contribution to society.

The University is now ranked 4th in Australia and 88th in the world by the Academic Ranking of World Universities published by China's Shanghai Jiao Tong University. Our success continues a trend that has seen us leap 36 places globally since 2008, and keeps us on target to reach our longer term goal of reaching the world top 50 by 2050.

The CSIRO-UWA Chair in Complex Engineering Systems will join some of the world’s best researchers as a participant in The National Resource Sciences Precinct (NRSP). The NRSP connects researchers with industry to tackle the complex challenges facing the resource sector. With a network of research, industry and government bodies the NRSP acts as a catalyst for capability and infrastructure development and champions world-class transformational resource science.

The University of Western Australia is actively building on its capacity in the field of Engineering for Remote Operations (ERO) within the Faculty of Engineering, Computing and Mathematics with an investment of $12M into three new strategic leadership positions. The Chair will be pivotal to the success of the Faculty’s mission to provide integrated solutions to the challenges in resources development, agriculture, health, transport, energy, water supply and communities.

Professor Paul Johnson
Vice-Chancellor
The University of Western Australia

CSIRO is delighted to be working with The University of Western Australia in developing core research capability in support of Australia’s world-class research industries through this and other joint appointments under the auspices of the National Resource Sciences Precinct (NRSP). This initiative builds on CSIRO’s long-standing and highly successful collaboration with UWA across a number of scientific disciplines.

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Chief Executive
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The University of Western Australia is a high-quality research-intensive university with a broad and balanced coverage of disciplines in the arts, science and major professions. It is Western Australia’s oldest university, established in 1911, and currently has a student population of approximately 24,500.

The University has an international reputation for excellence and enterprise and is regarded as one of Australia’s top research institutions. Its strong research culture sees it attract high levels of competitive research funding. At the same time the University places great emphasis on high quality teaching and learning, and is committed to the development of innovative and responsive programs. It has focused on the teaching-research nexus, so that teaching and learning take place in an atmosphere of research scholarship.

The University’s high quality teaching and research ensure it remains the university of preference for Western Australia’s highest achieving school leavers, as well as attracting high-calibre undergraduate and postgraduate students from around the nation and overseas. The quality of the student population is high by national and international standards.

The University is recognised nationally and internationally for the quality of its academic staff and has strong strategic partnerships with industry, the professions and government. It operates in collaboration with other research intensive universities in Australia and around the world. The University of Western Australia graduates are highly competitive internationally, achieving success in higher study and in wide-ranging fields of employment. Many graduates have risen to prominence in leadership roles in industry, government, education and the professions, in Australia and internationally.

uwa.edu.au
Role, key responsibilities, selection criteria and conditions of employment

Role

The CSIRO-UWA Chair in Complex Engineering Systems will be an inspirational leader who, in partnership with CSIRO, develops a multi-disciplinary team that delivers exceptional teaching and research in complex engineering systems. This role will bring together significant numbers of academics to foster the creation of comprehensive inter-disciplinary research into all aspects of complex engineering systems producing graduates and research that meet the needs of industry and make a valuable contribution to society.

With an investment of $12m and the development of three new leadership positions, UWA is actively investing in the continued development of Engineering for Remote Operations (ERO) within the Faculty of Engineering, Computing and Mathematics. Along with the CSIRO-UWA Chair in Automation and Robotics and the Chair in Ocean Engineering, this role will be pivotal to the success of the Faculty’s mission to provide integrated solutions to the challenges in resources development, agriculture, health, transport, energy, water supply and communities.

The appointee will develop a research roadmap, in consultation with a Management Group including key CSIRO and academic stakeholders, to define the themes and milestones to be used in the development of a major world-class research program in complex engineering systems.

Funding is available for up to three postdoctoral positions, PhD top-up scholarships and start-up funds for specialist equipment and travel to support the continued development of complex engineering systems at UWA.

Key Responsibilities

- Build a world-class multi-disciplinary research team, including the immediate appointment of up to three postdoctoral positions.
- Develop a research roadmap and deliver world-class research projects consistent with the mission and themes of the University and the needs of CSIRO (as outlined in the CSIRO funding agreement).
- Lead and contribute to teaching undergraduate and postgraduate courses in complex engineering systems.
- Supervise undergraduate and postgraduate research projects.
- Contribute to the development and promotion of complex engineering systems at UWA through involvement in professional associations, conferences and other external activities.
- Contribute to community engagement by building strong working relationships with a range of stakeholders including government and industry.
- Actively support the University’s commitment to health and safety, equity and diversity.

Selection Criteria

- PhD or higher doctorate in a relevant discipline.
- Recognised expertise in integrative approaches to the modelling, optimisation, control and management of complex systems (including asset management and the entire supply chain network).
- Outstanding research record as evidenced through publications, conferences, awards and committee membership, with an emphasis on outcomes, applications and impacts.
- Record of research team leadership, the setting of research directions and collaboration.
- Record of strategic planning, influence and effective communication within the context of a research-intensive organisation.
- Record of working with and delivering successful outcomes to industry partners is desirable.
- Record of leading and integrating significant multi-disciplinary teams is desirable.
- Commitment to the creation of teaching programs that take a broad view of complex engineering systems and meet the needs of industry.
Conditions of employment

An attractive and flexibly constructed remuneration package will be negotiated and will include:

- Employer contribution to superannuation of 17%;
- Recreation leave of 20 working days per annum;
- Long service leave of 13 weeks every 10 years;
- Eligibility for sabbatical leave;
- Relocation assistance including airfares for the appointee and dependents.
ERO provides an integrated and collaborative approach to seeking solutions to the challenges in resource development, agriculture, health, transport, energy, water supply and communities. The Faculty is seizing the opportunity to become a world leader in this growing area of engineering, as well as building upon existing research strengths in biomedical engineering.

This is an exciting time for the Faculty, as it celebrates extraordinary achievement amongst its staff, including a new Shell EMI Professorial Chair, Australian Academy of Science Award winners and Australian Laureate Fellowships, whilst looking to the future to plan new multi-million dollar infrastructure. The Engineering Zone, an inspirational and flexible teaching and research space, will help to enrich the student experience and foster further collaborative research innovation for the benefit of the Australian and International Communities.

The Faculty has an international reputation for excellence in research and its research teams benefit from global partnerships with industry, attracting research income of more than $27 million a year – well above the national average. The Faculty’s vision is to be part of the world’s top 100 engineering faculties by 2020 and the top 50 by 2050. It is capitalising on its location at the hub of Australia’s resources industry – and a stone’s throw from the head offices of Australia’s biggest resource industry players – to revolutionise engineering research and position Western Australia at the forefront of Engineering for Remote Operations (ERO).

One of UWA’s founding faculties, the Faculty of Engineering, Computing and Mathematics has educated Rhodes Scholars, Fulbright Scholars, Eureka Prize winners, CEOs and seven of the most influential engineers in Engineering Australia’s Top 100 list. The Faculty prides itself on its track-record for producing graduates who not only perform well in their chosen profession, but are equipped with the skills and social capital they need to be the very best.

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‘Empowering people to change the world’

Faculty of Engineering, Computing and Mathematics

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CSIRO, the Commonwealth Scientific and Industrial Research Organisation, is Australia's national science agency and one of the largest and most diverse research agencies in the world. It has over 6,400 staff located across 54 sites throughout Australia and one overseas.

CSIRO shapes the future by using science to solve real issues and is one of the top ten applied research agencies in the world. The organisation's research makes a difference to industry, people and the planet. It is in the top one per cent of global research institutions in 14 of 22 research fields and in the top 0.1 per cent in four research fields.

Through its science CSIRO provides innovative and sustainable solutions, ideas and technologies, knowledge exports, industrial and environmental innovation, plus new jobs, new industries and fresh opportunities.

At CSIRO they take the issue of delivering positive impact at ‘scale’ seriously. That's why it focuses more than 50 per cent of its total research effort into large-scale, cross-cutting research programs called National Research Flagships.

To achieve this it assembles diverse teams of researchers from within CSIRO, universities and other research agencies, along with industry, community and government stakeholders. Together they work to address major challenges like food and water security, biosecurity, health, climate change, energy needs and manufacturing.

As a whole, the Flagships program is one of the largest scientific research programs ever undertaken in Australia.

CSIRO’s strength lies in building multidisciplinary expert teams to tackle the big and complex problems and challenges facing humanity.

The organisation has the breadth, skills, diversity, infrastructure, perspective and flexibility to work across boundaries, nationally and internationally, and deliver research outcomes of significance and impact.

To deliver excellent science outcomes, CSIRO builds research relationships with universities and other research organisations around the world with which we have complementary capabilities and objectives.

Developing these strong relationships helps us respond to the forever changing nature of science and strengthen our ability to work across boundaries. It is by working with, through, and on behalf of others, that we can successfully achieve common goals to create long-lasting benefit for everyone involved.

Ultimately, CSIRO seeks to make a difference with its research, to solve problems that matter to humanity, and generate positive impact for today and tomorrow.
Western Australia and Perth

The resource-rich State of Western Australia is the economic powerhouse of Australia. Western Australia is the principal Australian supplier of natural resources and energy to international partners, including China, India, Japan, South Korea and much of South-East Asia. Western Australia’s diverse inventory of minerals and energy, as well as its agricultural and fisheries resources, account for 25 per cent of the nation’s exports and place the State at the heart of Australian economic growth and transformation.

Western Australia and its capital Perth occupy the same time zone as 60 per cent of the world’s population and the nations that promise the greatest economic growth of the 21st century. Western Australia is also Australia’s largest state, covering some 2.5 million square kilometres and 12,500 kilometres of coastline, including some of the most ancient landscapes in the world. The State’s population is matching the rapid growth of the economy and is over two million.

Perth is a cosmopolitan city, with wide ethnic and cultural diversity. The city centre is on the Swan River 12 kilometres from the Indian Ocean port of Fremantle.

The city enjoys a Mediterranean climate, with more hours of sunshine than any other capital city in Australia. Summers are hot and dry and the winters mild and wet. Perth’s world-famous beaches and rivers, extensive parklands and variety of restaurants and cafes provide a superb living environment. For more information see: tourism.wa.gov.au

Perth is well served with art galleries, theatres and cinemas and is home to the WA Symphony Orchestra, the WA Ballet and the WA Opera. The cultural highlight of the year is the Perth International Arts Festival, founded and owned by The University of Western Australia – uwa.edu.au/perthfestival

Western Australia’s five universities and wide variety of public and private schools, vocational institutions and English language colleges provide quality assured education with flexible study pathways and state-of-the-art facilities. Perth continues to build its reputation as a destination for international students seeking a quality education – studyperth.com.au
Thank you for your interest. If you wish to proceed, the following information will assist you with your application.

There are no specific application forms to complete. Your application must include the following:

- A statement that clearly demonstrates the extent to which you satisfy each of the selection criteria;
- Evidence of the impact of your research beyond academia, such as through contributions made to economy, society, culture, public policy or services, health, the environment or quality of life;
- A curriculum vitae that provides your personal details, qualifications and work history;
- A list of any publications;
- The names, email, mailing addresses and telephone contact details of three referees who can be contacted for a confidential report. Please note that your permission will be sought before referees are contacted.

Please also note: If you are the successful candidate for this position and you are not an Australian or New Zealand citizen, or a permanent resident of Australia, you will be required to obtain an entry visa to work here. The University of Western Australia will sponsor you for employment under the Employer Nomination Scheme.

Lodging your application

Applications must be submitted online at: jobs.uwa.edu.au/executive

If you need assistance with submitting your application please contact:

Ms Toni Pilgrim
Executive Support Manager
Human Resources
The University of Western Australia
Email: toni.pilgrim@uwa.edu.au

Closing date

27 February 2015

Enquiries and further information

If you wish to discuss the position in confidence please contact:

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Dean
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Telephone: +61 8 6488 3704
Email: dean@ecm.uwa.edu.au

Or

Professor Greg Ivey
Deputy Dean (Research)
Faculty of Engineering, Computing and Mathematics
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