PAWSEY supercomputing centre

CSIRO

DIRECTOR
THE PAWSEY SUPERCOMPUTING CENTRE

closing date: 14th January 2018

The Pawsey Supercomputing Centre is an unincorporated joint venture between

CSIRO · Curtin University · ECU Edith Cowan University · Murdoch University · The University of Western Australia

and proudly funded by

NCRIS National Research Infrastructure for Australia · Government of Western Australia

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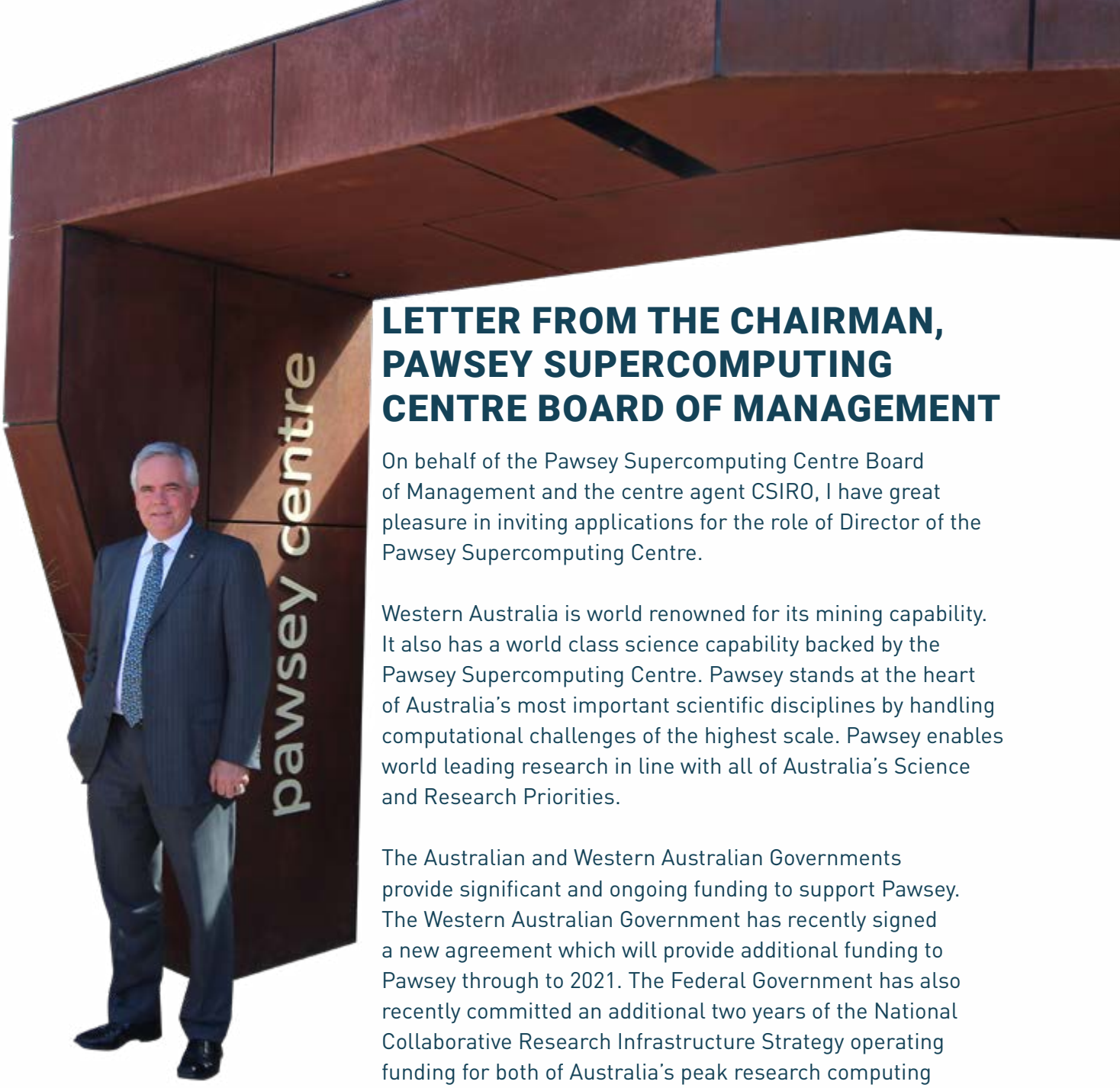


LETTER FROM THE CHAIRMAN, PAWSEY SUPERCOMPUTING CENTRE BOARD OF MANAGEMENT

On behalf of the Pawsey Supercomputing Centre Board of Management and the centre agent CSIRO, I have great pleasure in inviting applications for the role of Director of the Pawsey Supercomputing Centre.

Western Australia is world renowned for its mining capability. It also has a world class science capability backed by the Pawsey Supercomputing Centre. Pawsey stands at the heart of Australia's most important scientific disciplines by handling computational challenges of the highest scale. Pawsey enables world leading research in line with all of Australia's Science and Research Priorities.

The Australian and Western Australian Governments provide significant and ongoing funding to support Pawsey. The Western Australian Government has recently signed a new agreement which will provide additional funding to Pawsey through to 2021. The Federal Government has also recently committed an additional two years of the National Collaborative Research Infrastructure Strategy operating funding for both of Australia's peak research computing facilities. Itis also exploring options, through development of the Research Infrastructure Investment Plan, to address Pawsey's ongoing needs as a key component of the National Research Infrastructure system.

The role of Director is a key role in the success of Pawsey. Pawsey has built a great team of interdisciplinary supercomputing and data specialists. The successful appointee will take on the leadership of Pawsey at an exciting time and will be leading the next phase of Pawsey's development. You will also play a significant national and international role to promote Pawsey and contribute to the wider development of High Performance Computing in Australia.
I encourage your interest in the position.

Mr John Langoulant, AO
Board Chairman

ABOUT THE PAWSEY SUPERCOMPUTING CENTRE

OVERVIEW

The Pawsey Supercomputing Centre is Australia's most advanced national peak high performance computing facility.

Located in Perth, Western Australia, the facility provides researchers across the country with access to infrastructure and expertise that enable solutions to big science problems that will translate in impact to society and economic growth for the nation.

Pawsey currently enables over 80 organisations, and more than 1300 researchers to achieve unprecedented results in domains such as radio astronomy, energy and resources, engineering, bioinformatics and health sciences, advancing research aligned with Australia's science priorities. The Centre will also underpin the operations of the Square Kilometre Array, the world's greatest science project.

Further information

www,pawsey.org.au

PAWSEY SERVICES AND INFRASTRUCTURE

To allow Australian researchers to achieve the highest research outcomes, the following world-class systems are housed in the Centre:

- Magnus, World-class supercomputer in excess of 1 PetaFLOPS.
- Galaxy, real-time computing for Australian radio astronomy, serving two of the precursor projects for the Square Kilometre Array
- ZEUS, Pawsey's HPC stepping stone
- Athena, cutting-edge technologies to keep researchers ahead
- Zythos, accelerated performance for big data analytics
- Nimbus cloud, an integrated data-intensive infrastructure
- 40PB of world-class data storage, with room for expansion up to 100PB.

The Pawsey Supercomputing Centre provides a range of support services to help researchers take advantage of petascale supercomputing to transform their research outcomes.

With use of the powerful compute hardware provided by the Pawsey Supercomputing Centre, researchers are able to produce outcomes not possible using traditional methods. This includes higher precision modelling, analysis of larger data sets, and ensembles of many simulations for parameter optimisation.

The Centre also provides petascale data store services, enabling global access to research data products and collections. With data products generated on the supercomputers and locally uploaded, the data store takes collaboration to a new level with its high-speed access and close proximity to high-speed compute for data analytics.

Pawsey's visualisation infrastructure and remote visualisation capabilities enhance knowledge by providing new, tangible ways for scientist to interact with and understand complex data, and communicate it through easily accessible visual mediums.

Pawsey has a dedicated team of over 35 staff, including supercomputing experts, data specialist, systems administrators, visualisation specialists, executives and operational staff. Pawsey's team is highly regarded internationally and include experts in various scientific fields, such as astronomy, physics, geophysics, mathematics, chemistry and engineering.

The Pawsey Supercomputing Centre staff assist researchers with a number of support services such as migrating workflow to supercomputers, exploring data analytics, data collaboration and accessibility, visualising complex data, and upscaling software to make effective use of massively parallel processing. The Pawsey staff also provide training aimed at upskilling Australia's researchers, from basics through to advanced programming topics.

Director Pawsey Supercomputing Centre

PAWSEY'S ADVANCED COMPUTING ENVIRONMENT

Australia is home to a robust national research infrastructure network that provides researchers with an extensive array of services to conduct their work to the same level or beyond their peers in any other nations. Within this diverse range of services the Pawsey Supercomputing Centre has defined itself by supporting projects that require the highest levels of raw computing power, allowing other organisations to handle smaller projects. This singular focus brings unique value to Australian researchers, allowing them to tackle issues of a scope beyond that manageable by many other nations.

Named in honour of Dr Joseph Pawsey, the father of Australian radio astronomy, the Pawsey Supercomputing Centre stands at the forefront of Australia's most important scientific disciplines by handling computational challenges of the highest scale. The Centre's priority research areas are radio astronomy, resources and mineral sciences, and energy research. As a uniquely West Australian facility, the Centre is able to capitalise on the local expertise in radio astronomy and earth sciences to allow researchers in these fields to lead the world in ground breaking scientific activities that return significant benefits to the State and the nation.

The Pawsey Supercomputing Centre, was established in June 2000 and was formerly known as iVEC.

Under the Australian Government's Super Science Initiative of 2009, iVEC was awarded 80 million dollars over four years to establish a national supercomputing facility in Western Australia. The Pawsey Centre purpose-built facility was constructed in 2012. In 2014, Magnus, Pawsey's flagship system debuted in the TOP500 list, ranked 41 most powerful supercomputer in the world, it is currently ranked 141.

The Government of Western Australia committed approximately $21m over five years to enable the Centre to operate its facilities and develop Perth as one of the leading centres of supercomputing expertise in the region.

The Pawsey Supercomputing Centre's Partner organisations all contribute significantly both in terms of operational support and providing access to expertise in key activity areas.

The Pawsey Supercomputing Centre is a purpose-built structure, housing supercomputers and associated works, located in Kensington, Western Australia. The building is located on CSIRO-owned land adjacent to the Australian Resources Research Centre facility, approximately six kilometres from Perth's CBD. The facilities incorporate initiatives to minimise impact on the environment and employ best practice technologies to reduce energy usage.

The Pawsey Supercomputing Centre is a joint venture that brings together the Federal Government, Western Australian Government, University Partners and collaborating organisations in a consortium that has been steadily producing outcomes for more than fifteen years.

GOVERNANCE

The Pawsey Supercomputing Centre is an unincorporated joint venture between CSIRO, Curtin University, Edith Cowan University, Murdoch University and The University of Western Australia and is supported by the Western Australian and Federal Governments.

CSIRO acts as the Centre agent and all Pawsey staff are employed by CSIRO.

Governance is exercised through the Pawsey Supercomputing Centre Board, which provides leadership and oversight of the activities of the organisation. In providing leadership and direction, the Board works with the Director in engaging external stakeholders, reviewing the Pawsey Supercomputing Centre's mission and objectives, identifying desired outcomes the organisation is seeking and setting the strategies it will use to achieve them. The Director has direct responsibility for all management and operational issues within the direction and the policies laid down by the Board and is guided by the Pawsey Supercomputing Centre Management Group.

Current Board members are:

Mr John Langoulant
Board Chairman

Dr David Williams
Executive Director
CSIRO Digital, National Facilities and Collections

Mr Paul Nicholls
Director, Strategic Projects,
Curtin University

Prof John Finlay-Jones
Deputy Vice-Chancellor Research
Edith Cowan University

Prof David Morrison
Deputy Vice-Chancellor Research
Murdoch University

Dr Campbell Thomson
Director Office of Research Enterprise
The University of Western Australia

Mr Geoff Harben
Director, Markets, KPMG

MANAGEMENT

The Pawsey Supercomputing Centre's services are delivered through four functions, which are:

- Strategic Projects and Engagement
- Supercomputing
- Data and Visualisation
- Centre Operations

The Pawsey Supercomputing Centre works closely with the Centre agent who facilitate the delivery of corporate functions through CSIRO Enterprise Services.

POSITION DETAILS

DIRECTOR PAWSEY SUPERCOMPUTING CENTRE

Reference Number:	52283
Classification:	CSOF Level 8
Salary Range:	AU $157,249 to AU $197,430 plus up to 15.4% superannuation A market-based salary is negotiable with the successful applicant
Location:	Perth (Kensington) Western Australia
Tenure:	**Specified Term of 4 years**
Relocation assistance:	Will be provided to the successful candidate if required.
Applications are open to:	☐ Australian Citizens Only ☐ Australian Citizens and Permanent Residents Only ✖ **All Candidates**
Functional Area:	Research Management
% Client Focus - Internal:	40%
% Client Focus - External:	60%
Reports to the:	Director Information Management and Technology
Number of Direct Reports:	8

ROLE OVERVIEW

The role of Director Pawsey Supercomputing Centre is to lead the Facility, a national supercomputing centre situated in Perth, Western Australia.

The Director is employed by the CSIRO and is accountable to the Pawsey Board. The Pawsey Supercomputing Centre is an unincorporated joint venture of Curtin University, Edith Cowan University, Murdoch University and the University of Western Australia and the CSIRO and receives strong financial support from both the Australian and Western Australian governments. The Centre Board comprises representatives from each member of the joint venture and has an independent chair and deputy chair.

The Pawsey Supercomputing Centre is one of only two national world-class supercomputing and high volume data management research facilities in Australia. Pawsey operates petascale compute, data analytics and storage infrastructure for research and industry benefit. The Facility represents a recurring investment in excess of AU$100 million by the Australian Federal Government with an investment of $21.6 million over 5 years by the Western Australian Government in Pawsey's operations and significant recurring investments by the joint venture partners.

A core function of the Pawsey Supercomputing Centre is to provide services to the Australian radioastronomy community and its computing

and data storage capability is required for the operations of the Murchison Widefield Array and Australian Square Kilometre Array Pathfinder radio telescopes. The Centre is also engaged in planning for the International Square Kilometre Array project as the proposed home of its computing and data management capability. Pawsey also supports other national major research capabilities including, but not limited to, fields such as energy and resources, and bioinformatics. Producing a strategic plan that satisfies the requirements of these diverse user communities will be a key element of the Director's role.

In addition to the Director, all Pawsey staff are employed by CSIRO reporting within its Information Management and Technology Business Unit as part of the Digital, National Facilities and Collections Group.

THE NEXT FOUR YEARS

Pawsey is coming to the end of its initial investment cycle. Over the next four years, the Director's primary role will be to prepare for and deliver a step change in Pawsey's operations on the back of expected new investment cementing the Centre role in the Australian, international and regional eResearch landscape.

Pawsey's fundamentals are strong combining world class compute and data capabilities with a highly performing, highly skilled workforce.

Opportunities include:

- New investment over the next 18 months allowing diversification of compute and storage platforms and an opportunity to push capability into the 10 petaflop range.

- Supporting the broad requirements for significant current radio astronomy investments in Western Australia while planning for the SKA future to benefit the region and Australia.

- Working more closely with joint venture partners to develop a data sciences focus around high performance computing and growing data holdings.

- A focus on stronger industry engagement working with joint venture partners to deliver enhanced benefit to Australian industry.

- Linking eResearch infrastructure with Australia's northern neighbours utilising the recently announced Perth Singapore fibre optic link.

DUTIES AND KEY RESULT AREAS:

CSIRO's Australians Square Kilometre Array Pathfinder (ASKAP) which is located in the Murchison Radio-astronomy Observatory in Australia's Mid West. Credit: Pete Wheeler, ICRAR

• Support the Board in developing and delivering strategic direction for Pawsey as a supercomputing centre of international standing delivering benefits to the region and the nation

• Attract sufficient capital investment to maintain the Pawsey Supercomputing Centre in the top 2 research supercomputing facilities in Australia over the next 4 years

• Display exemplary stakeholder management skills in working to progress Pawsey's strategic objectives with funding bodies, universities, eResearch partners, industry and the user community

• Successfully delivering higher levels of planning integration with the National Computational Infrastructure (NCI), Australian universities and other Australian Government eResearch investments and achieving stronger alignment between the Pawsey Supercomputing Centre and its radio astronomy users with a focus on future demand

• Display management skills of the highest standard in leading and developing a world class interdisciplinary supercomputing and data team at Pawsey

• Ensure Pawsey meets the immediate needs of the research community by achieving the highest levels of operational reliability

• Working with stakeholders to develop a realistic plan for an SKA future

• Delivering enhanced benefit to Australian industry as a local and national resource

• Maximising the value to WA from exiting state investment

• Maximise the value to the Pawsey Supercomputing Centre of the operational relationship with CSIRO

• Management of Pawsey to actively deliver on CSIRO's Values, CSIRO's Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals

SELECTION CRITERIA:

Under CSIRO policy only those who meet all essential criteria can be appointed

PRE-REQUISITES:

1. **Education/Qualifications**: Qualifications in science, technology and management preferred as with at least ten years relevant work experience.
2. **Behaviours:** Capable of professional and respectful behaviours and attitudes in a collaborative environment.
3. **Communication:** Uses complex influencing strategies, for example, assembling strategic coalitions, building behind the scenes support and the tactical use of information to deliver strategic change; written and verbal communication skills of the highest order.
4. **Leadership:** Contributes to or defines divisional / organisational policy directions, strategic planning and operationalises the vision for staff and gains commitment to the direction chosen. Plans, seeks, allocates resources and monitors to achieve outcomes. Adopts a mentor role.
5. **Problem Solving:** Resolves major conceptual scientific, technical, commercial or management problems, which have a significant impact upon the field of research, professional function, the Division or the Organisation. Situations faced have little or no precedent and require original concepts and approaches.
6. **Adaptability:** Is flexible in response to external change or when faced with external constraints. Identifies and promotes the opportunities arising as a result of change.

ESSENTIAL CRITERIA:

1. A track record of success in developing and delivering strategy for an international standard Research facility.
2. Proven ability to successfully manage very senior stakeholder relationships including industry, across multiple tiers of government and with the research sector.
3. Demonstrable ability in client engagement and the ability to build and maintain effective working relationships.
4. Exemplary management and leadership skills in the operation of world class research infrastructure or research community collaborations.
5. Superior and proactive problem solving and analytical skills.

DESIRABLE CRITERIA:

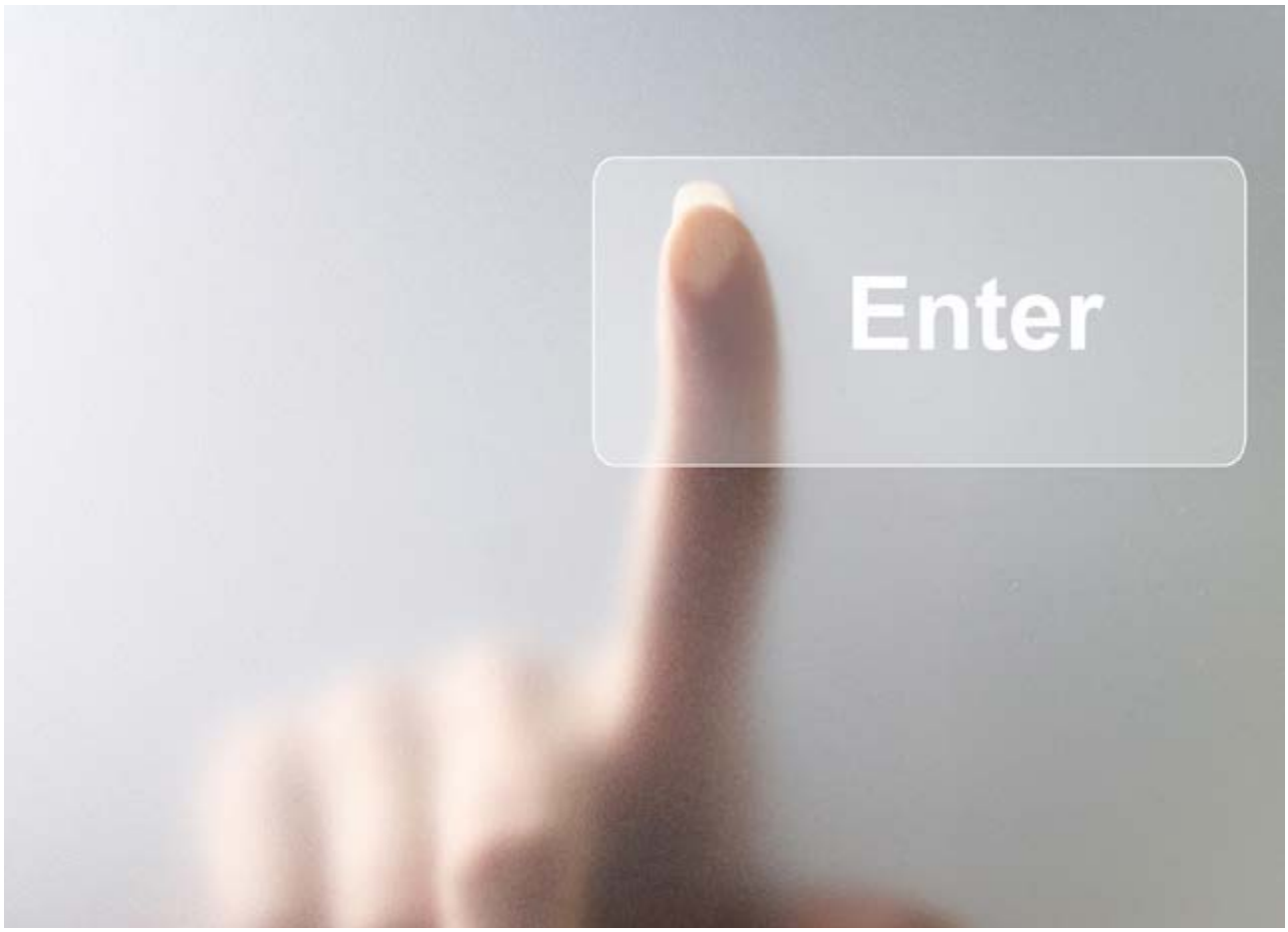
1. Deep technology skills in relation to scientific and high performance computing and scientific application and data services.
2. A successful track record of leadership in an environment of split accountability.
3. A track record of success in working to a governance board.

CSIRO is a values based organisation. You will need to demonstrate behaviours aligned to our values of:

1. Integrity of Excellent Science
2. Trust & Respect
3. Creative Spirit
4. Delivering on Commitments
5. Health, Safety & Sustainability

Special requirements:
To be eligible for this position you must be willing and able to undertake frequent travel, and either hold a current Australian Security Clearance or have the ability to attain one.

HOW TO APPLY



Please apply for this position online at www.csiro.au/careers. You will be asked to provide a resume and a covering letter outlining your suitability for the role.

If you experience difficulties applying online call 1300 301 509 and someone will be able to assist you. Outside business hours please email: csiro-careers@csiro.au.

Referees: If you do not already have the names and contact details of two previous supervisors or academic/professional referees included in your resume/CV please add these before uploading your CV.

Contact: If after reading the selection documentation you require further information please contact: Mr Brendan Dalton via email: Brendan.Dalton@csiro.au or phone: 02 6214 2934

Please do not email your application directly to Mr Dalton. Applications received via this method will not be considered.

ABOUT CSIRO

Australia is founding its future on science and innovation. Its national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation. Find out more! www.csiro.au.

ABOUT CSIRO

CSIRO IS AUSTRALIA'S NATIONAL SCIENCE AGENCY AND ONE OF THE LARGEST AND MOST DIVERSE RESEARCH ORGANISATIONS IN THE WORLD. WE FOCUS ON MISSION-DIRECTED RESEARCH TO ANSWER THE BIG QUESTIONS FOR INDUSTRY AND SOCIETY.

WHAT WE DO

CSIRO was formed as an independent statutory authority in 1949 and has a proud history of achievement through the excellence and adoption of its science and research.

Our research covers practically all aspects of human activity and the interaction with natural and built environments. This scientific embrace includes our air and water, our diverse landscapes, oceans and climate, agriculture, information and communication technologies, energy, health, space technologies and exploration, manufacturing, materials science, minerals exploration and processing, and more.

We are committed to complementing our science capabilities with outcome focused research that will generate economic, environmental and social benefits for Australia in a global context.

Our vision is to continue to be a world-class research organisation vital to Australia's future.

OUR PEOPLE

CSIRO employs approximately 5,500 full-time equivalent staff. There is a real passion among our staff to make a difference, to explore new ideas and to play a part in something that is bigger than them alone.

Our goals and values go beyond our science. We know we will be successful when our people always go home safely; our collaborators and partners realise lasting value from our science and involvement; our people share a sense of discovery; and we remain a trusted advisor to government, industry and society.

People are the heart of our organisation and we pride ourselves on recruiting the best talent.

HOW CSIRO WORKS

CSIRO's operating model has three lines of business, Impact Science, National Facilities and Infrastructure, and Commercial Services. Information Management & Technology (IMT) reports through the Digital, National Facilities and Collections business line and provides all computing and information services for the organisation.

INFORMATION MANAGEMENT & TECHNOLOGY

CAPABILITY

IMT is currently structured with four distinct business functions; IT Services (Client Services Delivery, Infrastructure, Applications, SAP Services), Scientific Computing (Platforms, Services, Strategy & Design), Cyber Security and Information Services (Libraries, Records and Data Management). There is an Executive Manager heading each of those services, and over 350 staff spread across CSIRO sites nationally.

IMT STRATEGY

Our strategy has been designed to support CSIRO 2020 with a strong focus on ensuring staff and collaborators have seamless, secure access to tools, systems and processes that further enhance the delivery of world class science.

In today's rapidly changing world, security is a growing challenge and our services will be designed to ensure that CSIRO operates within the appropriate government policies and processes while maintaining business agility.

IMT will continue to partner with our internal customers - CSIRO Business Units and Support Functions, as well as national and international research partners, and government agencies to deliver on CSIRO's information & technology requirements today and into the future.

Our services will be supported by industry partners and will be established upon leading edge technology and emerging trends.

In delivering our services, IMT will utilise its four functional areas to provide effective end to end and holistic services and will have a solid focus on the client requirements and experience.

IMT VISION

Delivering on the promise of the digital era with a 'fit for use' centred digital information ecosystem for the world's premier research and innovation agency

IMT MISSION

We underpin the work that CSIRO needs to do as innovation catalyst for Australia. We will provide customer needs focussed solutions at the forefront of digital trends that enhance CSIRO's research, business agility and innovation. We must be a trusted adviser and service broker supporting all aspects of CSIRO's business shaping a culture of agility while understanding and mitigating information risk.

ABOUT WESTERN AUSTRALIA

Office building background in Elizabeth Quay-Perth, capital of Western Australia

WESTERN AUSTRALIA

Boasting thousands of kilometres of white sandy beaches, amazing scenery, endless blue skies and a modern yet relaxed lifestyle, Western Australia is considered one of Australia's most popular destinations for migrants.

Western Australia is Australia's largest state in area, covering 2,645 million square kilometres, with a population of over 2.1 million people.

From the tropical climate, turquoise waters and spectacular gorges in the north to the wineries and forests in the South West, Western Australia varies vastly from region to region and offers something for everyone.

PERTH

Perth, one of Australia's most beautiful cities, is the capital of Western Australia and is Australia's western gateway. Living in Perth you will enjoy the sunshine, natural parklands and beach lifestyle.

The weather is fantastic, the beaches are clean and uncrowded, and the city, situated on the banks of the Swan River, is in a postcard-perfect setting.

Information on Western Australia and Perth is available at:

Western Australia - Tourism

Perth Tourist Centre

Living in Western Australia

wa.gov.au

PUBLIC TRANSPORT

Perth has a comprehensive public transport system which includes trains, buses, ferries, taxis and other means of transport. Further information is available at: http://www.transperth.wa.gov.au/

SCHOOLS

In Australia, education is the responsibility of each State Government. Compulsory school age differs between Australian states. General information about schooling in Western Australia, including a school search facility and how to enrol your child is available at: http://det.wa.edu.au/

REAL ESTATE

Most homes are sold or leased through a real estate agent. The Real Estate Institute of Western Australia (REIWA) provide a list of real estate agents by geographical area. For an overview of particular suburbs in Perth the following websites provide free suburb reports: http://reareports.realestate.com.au/ or www.domain.com.au

IMMIGRATION

If you require a visa to work with CSIRO, your Recruitment contact will be able to advise which employer-sponsored visa applies to your situation and start working through the visa process with you after you accept CSIRO's employment offer in writing. Note that subclass 457, 186 and 187 visas all require CSIRO to complete and lodge a nomination for you before you can complete and lodge your corresponding visa application.

Australia's immigration website is www.immi.gov.au

Specified term appointees: For information on the long-stay temporary business (subclass 457) visa to Australia you can go to: http://www.immi.gov.au/skills/skillselect/index/visas/subclass-457/

Aerial photograph of the South Perth foreshore, Perth, Western Australia, Australia.

Cottesloe Beach on a warm Spring day. Perth, Western Australia, Australia

Salmon Bay in Rottnest Island, Western Australia