# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Irrigation Hydrologist |
| Job Reference | 85490 |
| Tenure | Indefinite  Full-time |
| Salary Range | AU$102,724 – AU$111,165 per annum plus up to 15.4% superannuation |
| Location(s) | Black Mountain (Canberra), ACT |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All candidates |
| Position reports to the | Team Leader, Water and Irrigation Systems |
| Client Focus – Internal | 30% |
| Client Focus – External | 70% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Dr Francis Chiew via email at [francis.chiew@csiro.au](mailto:francis.chiew@csiro.au) or Dr Mobin-ud-Din Ahmad via email at [mobin.ahmad@csiro.au](mailto:mobin.ahmad@csiro.au) |
| How to apply | Apply online at <https://jobs.csiro.au/>  Internal applicants please apply via **Jobs Central**  If you experience difficulties when applying, please email [careers.online@csiro.au](mailto:careers.online@csiro.au) or call 1300 984 220. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

### Role Overview

The role of Research Scientist/Engineer staff is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. The Research Scientist/Engineer may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. The Research Scientist/Engineer will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

The Irrigation Hydrologist will undertake innovative research and lead components of high impact external projects related to water resources assessment and management, and linking water allocation with the socio-economic and livelihood under current and uncertain future climates. They will work with others to assess the social, economic, environmental, and cultural values and benefits of alternative water resources management and adaptation options.

The Irrigation Hydrologist will contribute to the strong multi-disciplinary capability in the Water Security Program of the CSIRO Land & Water (L&W) Business Unit, which undertakes research on hydrology and water resources, water-agriculture-livelihood interactions, integrated basin management, and adaptation to a changing climate. The role of the Irrigation Hydrologist is to contribute to the effective delivery of water and irrigation systems projects through agro-hydrological modelling and remote sensing analyses.

### Duties and Key Result Areas

* Conceptualise models of hydrological systems; and through novel data integration, modelling, analysis and interpretation, contribute to practical/applied solutions to problems of water supply/demand in the face of a changing climate change, particularly in managed agro-hydrological systems.
* Integrate these solutions across disciplines amongst the broader suite of global change drivers, including ecosystem sustainability, livelihoods, and gender and social inclusion.
* Process, analyse and interpret climate, remote sensing, hydrometric and other relevant biophysical data using advanced geostatistical modelling, advanced and cloud computing resources and machine learning.
* Work as part of a transdisciplinary team that is regionally and internationally dispersed in the areas of integrated water resources management, including agricultural water management and irrigation performance diagnosis, water savings and productivity analysis, field and catchment scale water balance modelling, surface water and groundwater interactions, water resource development, climate change impacts and socio-economic & ecological outcomes.
* Strong delivery to high impact external projects like the Murray-Darling Basin Water and Environment Research Program (MD-WERP), Northern NSW Flood and Water Security Strategy, and international projects on integrated water management.
* Under the supervision of more senior researchers, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* Select the most profitable line of attack upon a problem, prepare detailed design proposals and experimental protocols.
* Draw on professional expertise, knowledge of other disciplines and research experience to recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* Communicate research outcomes to scientific and industry forums through scientific publications, reports, and presentations.
* Work closely with industry clients to ensure delivery of research outcomes and transferring technologies and/or guidelines for adoption.
* Communicate openly, effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

## **Selection Criteria**

#### Essential

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

1. A PhD, or an equivalent combination of qualifications and research experience, in a relevant field such as hydrological science, agro-hydrology, environmental science or engineering.
2. Demonstrated understanding and experience in irrigation systems analysis and modelling using remote sensing and agro-hydrological models at the catchment and river basin scale.
3. Programming skills (such as Python, R, etc.), spatial analytical skills, and experience working with large datasets.
4. Strong oral and written communication skills including the ability to make scientific presentations to audiences with scientific and non-scientific backgrounds.
5. Strong or emerging publication record.
6. Ability to work independently as well as in productive teams.

**Desirable**

1. Familiarity of key issues related to agricultural water management, particularly in Murray-Darling Basins.

## **Required Competencies**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others’ reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate responses by adapting/creating and testing alternative solutions.
* **Independence:** Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of change.

Special Requirements

* The successful candidate will be asked to obtain and provide evidence of a National Police Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e., IELTS test- https://ielts.com.au/)

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

CSIRO is a values-based organisation. In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* 1. People First
  2. Further Together
  3. Making it Real
  4. Trusted

Find out more about CSIRO [Land and Water](https://www.csiro.au/en/Research/LWF)