# Position Description

## Postdoctoral Fellowship– CSOF4

The following information is for applicants

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| Advertised Job Title**:** | Postdoctoral Fellowship in sugarcane root systems. |
| Job Reference: | 58960 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | [ ]  Australian Citizens Only[ ]  Australian/New Zealand Citizens and Australian Permanent Residents Only* [x]  All Candidates
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| Percentage of Client Focus - Internal: | 25% |
| Percentage of Client Focus - External: | 75% |
| Reports to the: | Team Leader, Sugarcane Improvement, CSIRO Agriculture and Food |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries: | Dr Anne Rae, anne.rae@csiro.auPlease do not email your application directly to Dr Rae. Applications received via this method will not be considered. |
| Contact Details For Applying: | Call 1300 984 220 or email csiro.online@csiro.au  |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon Please include both your CV/Resume and cover letter outlining your suitability and motivation for the role |

## Role Overview:

**Postdoctoral Fellowships** at CSIRO provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant postdoctoral work experience. These fellowships will help launch their careers, provide experience that will enhance their career prospects, and facilitate the recruitment and development of potential leaders for CSIRO.

Postdoctoral Fellows **are appointed for up to three years** and will work closely with a leading Research Scientist or Engineer in their respective field. They carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes. They present the findings in appropriate publications and at conferences.

The successful candidate will undertake research as part of a project funded by Sugar Research Australia to identify root system traits that contribute to productivity in marginal soils through a combination of field sampling, pot trials and modelling. Recent CSIRO-lead projects have defined methods and critical parameters for root system analysis and identified genotype differences in root architecture. This background knowledge will now be applied to understand, quantify and predict the effects of soil constraints on root structure and function, focussing on adaptation to compacted soils. The research will be conducted as part of a team working on field-based measures of sugarcane root and soil health, and will also link to research on soil constraints in other crops.

## Duties and Key Result Areas:

* Under the direction of senior research scientists, carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes. Specific tasks include:
	+ Develop methods to assess root growth in soils of various bulk densities in pots and in the field.
	+ Measure genotype differences in the ability of roots to grow in compacted soils in field sites.
	+ Define root system architecture and functional traits in varieties grown in pots with defined soil densities and identify genotype differences in response.
	+ Contribute to modelling to enable evaluation of root traits that could overcome constraints.
* Produce high quality scientific papers suitable for publication in quality journals or client reports.
* Prepare appropriate conference papers and outreach materials and present those at conferences and industry events as agreed with your supervisor.
* Undertake an appropriate training and development program developed by CSIRO.
* 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.
* Work collaboratively as part of a multi-disciplinary, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

**CSIRO’s postdoctoral training program**is developed between the Postdoctoral Fellow and a CSIRO scientist. The program will focus on enhancing the Fellows’ capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:

* Discipline-specific techniques and protocols
* Professional growth
* Project management
* Communication and influencing skills
* Working and collaborating with others

<http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships>

## CSIRO Competencies:

1. **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.**
2. **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.**
3. **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.**
4. **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
5. **Independence: Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).**
6. **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 changes.

## Selection Criteria:

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

1. A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as plant physiology, crop-soil interactions or functional root phenotyping.

Please note: To be eligible for this role you must have no more than 3 years (or part time equivalent) of relevant postdoctoral experience.

2. Demonstrated theoretical and practical knowledge of plant-soil interactions, or plant physiology.

3. A record of science innovation and creativity with demonstrated ability to develop novel solutions to complex scientific problems

4. Demonstrated experience in designing and conducting glasshouse and/or field experiments, and quantitative analysis of data, including statistical methods.

5. Demonstrated high level written and oral communication skills and ability to communicate research results in formats appropriate to the audience, including conferences and stakeholder meetings.

6. Demonstrated ability to work effectively as a member of a multi-disciplinary team, together with the motivation and discipline to carry out autonomous research.

7. Ability to travel and work in tropical environments.

## Desirable Criteria:

1. Demonstrated experience in the measurement and monitoring of soil physical properties relevant to cropping industries.
2. Experience with measurements and analysis of root system development and architecture
3. Experience with crop modelling tools.
4. Possessing a valid driver licence.

To be appointed as a Postdoctoral Fellow within CSIRO, candidates are required to have **submitted** their PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4-1 AU$82,450.Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.

## Special Requirements:

Appointment to this role may be subject to conditions including security/national police/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents 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 imagine. We collaborate. We innovate. To find out more visit us [online](http://www.csiro.au/)!

Find out more about CSIRO [Agriculture and Food](https://www.csiro.au/en/Research/AF)