

Information for Applicants

Postdoctoral Fellowship in Crop Physiology (for application in breeding)

Narrabri, regional New South Wales, Australia



Contact:

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About CSIRO Postdoctoral Fellowships

Postdoctoral Fellowships at CSIRO provide opportunities to scientists and engineers, who have completed their doctorate and have less than three years of 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.

About the Postdoctoral Fellowship in Crop Physiology (for application in breeding)

The **Postdoctoral Fellow in Crop Physiology (for application in breeding)** will work independently and within a research team to develop an understanding of the physiological responses of cotton to abiotic stress at the plant and crop-level. Specifically, your work will aim to assess genotypic variation for the limiting transpiration trait in cotton, i.e. genetic variation in transpiration response to vapour pressure deficit (VPD). To understand potential value of this trait at the plant and crop level, GxE responses will be assessed through crop modelling and field studies. The scope of the postdoctoral fellowship will also include research investigating pollen viability under high temperature stress. These results will ultimately be used to develop breeding material with enhanced abiotic stress tolerance.



The position is located at the **Australian Cotton Research Institute (ACRI)**, Narrabri, regional New South Wales. We conduct a wide range of research aimed at providing stable and ecologically responsible systems of cotton production for Australia, now and in the future. Research projects include efforts into plant breeding, entomology, agronomy and crop physiology. This position will be within the cotton breeding teams located in Narrabri, but will interact with integrated cotton management colleagues also based in Narrabri. ACRI is a welcoming and inclusive working environment, with an active social club and relaxed working environment. The site boasts the co-location of CSIRO and NSW Department of Primary Industries research hubs, with employees from a mix of local, interstate and international backgrounds. The positive and inclusive collaborative research work environment reflects the country hospitality you'll experience in the town of Narrabri.

Location: Narrabri, regional New South Wales, Australia

Salary: AU \$85k to AU \$93k per annum, plus up to 15.4% superannuation

Tenure: 3 year term

Job ref: 58230

Residency: All candidates, no restrictions

What's it like living in Narrabri?

Narrabri is a bustling regional centre located about 560km northwest of Sydney. Although the Kamilaroi people were the first inhabitants of the Narrabri region, the area was opened up for grazing and later wheat farming in 1873. Today the shire supports other agricultural industries such as beef and lamb, and is the centre of a major cotton growing industry. Close to the Nandewar Ranges, Narrabri rests on the banks of the Namoi River and offers great amenities such as sporting and social clubs, eclectic shops, quality restaurants and range of leisure options.



Image courtesy of www.visitnarrabri.com.au

The Narrabri Shire boasts a number of natural and built environments. The Mount Kaputar National Park is about 50km from the Narrabri Township and hosts the 1512-metre high Mount Kaputar. This is where, on a good day, you will have panoramic views of around 10 per cent of the whole state of New South Wales. The Pilliga Forest, just outside town, is 3000 square kilometres of temperate forest, the largest remnant in eastern Australia (but watch out for the Pilliga Yowie on your travels). Or if it's astronomy you're interested in, the Australia Telescope Compact Array at the Paul Wild Observatory (administered by the CSIRO) is 25km away and is the largest and most powerful radio telescope in the southern hemisphere.



Image courtesy of photographer Jamie Condon

Back in town, Narrabri is the home of The Crossing Theatre, a 1000-seat, \$8 million auditorium and cinema complex of a standard normally only found in larger Australian communities. Since 1876 Narrabri has put on its annual Show and rodeo (usually held in early May). The Show attracts a wide range of competitors and brings the community together for several days of pure country fun. You can also visit the Show in nearby Wee Waa which occurs later in May, and other Shows in the region, to see (or enter) a variety of exhibits and agricultural showings and events. Another annual event not to be missed is the long standing tradition of the Narrabri Races. Like many other rural communities, the Narrabri Race day is a classic country social event, with a long tradition and a fun family orientated atmosphere.



Image courtesy of www.visitnarrabri.com.au

Narrabri also has an emerging foodie culture, which is best showcased at the town's biannual *Nosh on the Namoi* food and wine festival. This popular event, held in March, brings together producers from the whole shire and further afield for a weekend of gastronomic indulgences and other fun activities for all ages.

For a regional town Narrabri is well connected to major centres via the Newell and Kamilaroi highways. In addition air services are offered to and from Sydney and Brisbane, as well as rail services to Sydney. Tamworth, located less than 2h drive away, is the major regional centre for the region. Tamworth is home to Australia's largest and best known [Country Music Festival](#).

Further information can be accessed on the Narrabri Shire tourism website, <http://www.visitnarrabri.com.au/>

Narrabri weather: We're not going to kid you, summers get hot in Narrabri, and it's generally dry! Narrabri is semi-arid with summer dominant rainfall (predominantly from spectacular thunder storms) and highest temperatures



reach over 40 degrees Celsius. On the flip side, the region's lowest minimum temps in winter drop to a few degrees below zero, although winters days are generally sunny and pleasant. Extremes of temperature like this are common in regional Australia as the distance from the coast increases, but rest assured we will provide you with the appropriate gear (with loads of sunscreen, water and other necessities) to protect you from the elements. As the majority of field and other outdoor work is conducted in summer, we can also avoid the heat by adjusting our working hours to start earlier and avoiding being outside during the hottest parts of our summer days. Having said that, a willingness and ability to work under adverse environmental conditions is a must!

What will I be doing as a postdoc with CSIRO Agriculture and Food?

- Under the direction of research scientists, you will carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
- You will develop innovative concepts, theories and techniques in abiotic stress physiology for application in a plant breeding program. Specifically:
 - Screen germplasm for genetic variation to the limiting transpiration trait in response to atmospheric vapour pressure deficit.
 - Develop an understanding of the morphological and biochemical characteristics associated with the limiting transpiration trait.
 - Through field experimentations and crop modelling, develop an understanding of the environments and cropping systems where the limiting transpiration trait will provide an advantage.
 - Refine existing assays used to determine pollen viability at high temperatures, and determine if this assay corresponds to fruit retention and yield under heat stress.
- You will also:
 - Undertake regular reviews of relevant literature and patents.
 - Produce high quality scientific papers suitable for publication in quality journals and for presentation at conferences and meetings.
 - Contribute to the development of innovative concepts and ideas for further research.
 - Make a contribution to the effective functioning of the research team and help deliver CSIRO's organisational objectives and plans.
 - Work collaboratively with colleagues within your team, the business unit and across CSIRO.
 - Communicate 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 Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
 - Undertake an appropriate training and development program developed by CSIRO.



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>

What do I need to be successful in this postdoctoral fellowship?

Pre-Requisites:

1. **Education/Qualifications:** A doctorate (or will shortly satisfy the requirements of a PhD) in field-based plant breeding or stress physiology, or related discipline.
Please note: To be eligible for this role you must have **no more than 3 years** of relevant postdoctoral experience.
2. **Communication:** High-level written and oral communication skills with the ability to represent the research team effectively internally and externally, including at national and international conferences.
3. **Publications:** A record of publications in quality, peer reviewed journals.
4. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.



Essential Criteria:

1. Demonstrated knowledge and experience in modern Australian crop production techniques, abiotic stress physiology and its application in a plant breeding context.
2. Demonstrated experience in the execution and management of field-based, glasshouse and laboratory research.
3. Demonstrated understanding and ability in experimental design and the use of scientific programs, such as R, for data handling and statistical analysis of field experiment data.
4. The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.
5. A record of science innovation and creativity, plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

What are my career prospects with CSIRO in Narrabri?



Although CSIRO Postdoctoral Fellowships are offered for a specified term (in this case 3 years), there are definite opportunities to progress within the group into an independent research science position and ultimately to other senior research and research management roles. Once you have successfully gained a position in CSIRO via a competitive process, you are then eligible to apply for both internally and externally advertised positions with us. The group structure is outlined below (see Figure 1). This gives you an indication of the possible career paths available in your science area. The dedicated postdoctoral training program (outlined above) will prepare you for a fulfilling career in research, providing opportunities for a long-term commitment working in agriculture and plant breeding in a thriving regional location.

What else do I need to know about joining CSIRO as a postdoctoral fellow?

To be appointed as a Postdoctoral Fellow within CSIRO, you are required to have **submitted** your PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If you have submitted, but not yet been awarded your PhD, your 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), your salary will be increased to the negotiated level and the difference will be back-paid to your start date.

Your appointment to this role may be subject to conditions including security/medical/character clearance requirements. If you are not an Australian Citizen or Permanent Resident, you may be required to undergo additional security clearance processes; which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <http://www.ielts.org/default.aspx>

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. We serve governments, industries, business and communities across the nation.

Find out more: www.csiro.au

CSIRO Agriculture and Food is helping Australian farmers and industry improve productivity and sustainability across the agriculture sector. Our focus is on the following challenges:



- Crop improvement;
- Livestock and aquaculture genetic improvement;
- Farming systems for productivity and sustainability;
- Interactions between agriculture and the environment; climate change, adaptation and mitigation; science for healthy soils;
- Global food security and development.

CSIRO Agriculture and Food's goal is for our technologies, management and knowledge systems to generate a sustainable gain in profitability of >\$3 billion per annum with multiple benefits to the economy, environment and society of Australia by 2030. Our vision is to be the catalyst for transforming productivity, profitability and sustainability in Australia's food and fibre industries and a leader addressing the global response to food and nutritional security for the world's growing population.

Find out more: <http://www.csiro.au/en/Research/AF>

How to Apply

Please apply for this position online at <https://jobs.csiro.au/> and enter requisition number **58230**. Internal applicants please apply via 'Jobs Central' in SAP (click 'Recruitment').

Please load one document containing your CV and a brief cover letter which outlines your suitability for the role and your motivations for applying (Maximum 2MB). At the end of the online application process, you will also be required to respond to some screening questions. Where text responses are required, to avoid being timed out of the system we recommend that you prepare your responses offline and paste them into the appropriate spot prior to submitting your application.

Contact

If you would like to discuss the position further or you require more information please contact:

Dr Warren Conaty via email: Warren.Conaty@csiro.au or telephone: **+61 2 6799 1515**

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

If you experience difficulties applying online call 1300 984 220 for assistance. Outside Australian business hours please email: csiro-careers@csiro.au.



Image courtesy of www.visitnarrabri.com.au



Figure 1.

CSIRO Agriculture and Food, Narrabri - GROUP STRUCTURE

