Position Details

CSIRO Early Research Career (CERC) Postdoctoral Fellowship– CSOF4

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| The following information is for applicants | |
| Advertised Job Title | CSIRO Winanga-y Postdoctoral Fellowship in Isoscapes for Wine Production (Isotope Biogeochemistry) |
| Job Reference | 74635 |
| Tenure | Specified Term of 3 years  Full-time |
| Salary Range | AU$88,163 to AU$96,573 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Adelaide, SA |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian Citizens/New Zealand Citizens and Australian Permanent Residents * Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible onshore candidates) |
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| Position reports to the | Research Scientist |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Nina Welti via email at nina.welti@csiro.au or phone +61 8 82738145 |
| 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. |

**Role Overview**

**CSIRO Early Research Career (CERC) Postdoctoral Fellowships** provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant postdoctoral work experience. These fellowships aim to develop the next generation of future leaders of the innovation system through:

* A differentiated career development program to deliver capability excellence and breadth across all facets of the national innovation system.
* Research training via strategic research and development projects with a clear focus that will deliver real impact through science and engineering excellence;
* An innovative culture supporting the development and demonstration of original thinking and expertise leading to peer-recognition; and
* Opportunities to develop skills and experience in collaborative research teams to effectively work within national and global multi/transdisciplinary and multi-stakeholder environments.

CERC Postdoctoral Fellows **are appointed for three years or part time equivalent.**

We are thrilled to be able to deliver on the commitment we made in our strategy to invest in frontier science with the new CSIRO Agriculture & Food Winanga-y Postdoctoral Fellowship scheme. The word Winanga-y (pronounced win-na-gnay) is a cultural asset gifted by the Traditional Owners from the Gomeroi Nation in Myall Vale to CSIRO’s Agriculture and Food business unit to name the new Postdoctoral Fellowship Scheme. Winanga-y means to understand, know, remember, and think.

This project will focus on quantifying the isotopic signatures of grape-wines to elucidate the impact of changing water sources on OH signatures. The Postdoctoral Fellow will quantify and model the isotopic signal of changing irrigation sources, drought, and management of grapes prior to the wine-making process to create an Australian grape isoscape, demonstrating feasibility of national isotopic approaches. Isoscapes models and predictions will be used to demonstrate national-level provenance solutions using wine grapes.

The project will link environmental inputs to an agricultural product by using robust information which is retained through the manufacturing process. It will untangle the isotopic signals retained in agricultural products within and between regions with similar climatic patterns, to better ascertain the resolution needed to create regionally specific isotopic fingerprints. Traditional techniques to determine the provenance of agricultural products compare unknown samples with known datasets. We will instead use environmental inputs to define a regionally specific pattern that is retained through harvest to create novel signatures which allow for predictive modelling of geographic regions. Novel isoscape modelling will consider with uncertainty and patchiness to create a model workflow for wine-grapes that is applicable to other agricultural products. This work will also develop a novel understanding of grapevine water use by determining the partitioning of the water sources the plants are able to access through the growing season and in response to irrigation and rainfall, and to water stress. This will inform further innovations in irrigation management and the movement of water in intensive agriculture.

We seek a postdoctoral researcher with field and modelling expertise interested in quantifying and modelling the isotopic signal of changing irrigation sources, drought, and management of viticulture across Australia. The candidate should possess expertise and/or interest related to the application of biogeochemical tracers and landscape scale modelling to understand plant physiological response to climate change and management decisions.

**Duties and Key Result Areas:**

Under the direction of senior research scientists and engineers, the CERC Postdoctoral Fellow will:

* + Establish an instrumented experimental field site to observe isotopic changes in wine grapes in response to a range of water sources.
  + Quantify isotopic response profiles at the field scape to gain a better understanding of management decisions and climate response in vineyards around Australia.
  + Develop isotope-based hydrological models for vineyards throughout Australia, with prediction and uncertainty with respect to climate change.
  + Represent CSIRO and project partners, externally, including in public forums, with industry or the research sector or with Government.
  + Write scientific papers and report contributions on the research findings.
  + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + Proactively undertake development to grow effective researcher capabilities to support career goals.
  + Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* Other duties as directed.

[**The CERC Postdoctoral Fellow learning and development program**](http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships)is developed between the CERC Postdoctoral Fellow and their CSIRO supervisor. 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
  + **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 response by adapting/creating and testing alternative solutions.
* **Independence:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **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**

**Essential**

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

1. A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as biogeochemistry, geochemistry, or hydrology.

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

1. Demonstrated experience in the application of stable isotopes to quantify biogeochemical cycling across the soil-plant-atmosphere continuum.
2. Demonstrated knowledge of isotope ratio mass spectrometers operation and/or hands on experience in monitoring, maintaining, and troubleshooting analyses of solids, liquids and/or gases.
3. High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including the presentation of research outcomes at national and international conferences.
4. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
5. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.
6. A current driver’s licence, willingness to drive, and a willingness to undertake specialised driver training as required.
   * **Desirable:**
7. An understanding of the edaphic, environmental and management drivers controlling partitioning of water sources in agricultural environments.
8. Experience designing, managing and/or executing field-based experiments in an agricultural or ecological context, including valid statistical interpretation of their data.
9. Experience with modelling ecological/physiological processes or the cycling of water/nutrients in above- and below-ground ecosystems.
10. Experience with large-scale ecological, agricultural and/or hydrological modelling and programming including uncertainty in model predictions, using common scientific programming tools (e.g. FORTRAN, C#, R, Matlab, GIS).
11. Remain productive, positive, and resilient in complex, ambiguous and/or uncertain environments.
12. The ability to work effectively as part of a multi-disciplinary, dispersed research team, plus the motivation and discipline to carry out autonomous research.

To be appointed as a CERC Postdoctoral Fellow within CSIRO, candidates will be expected to commence employment by December 2020. Candidates are also 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 ($85,361). 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 provision of a national police check as well as other security/medical/character clearance requirements.

The successful candidate will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people 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/

**Our value proposition**

We want CERC Postdoc Fellows to join our world class science, engineering and digital teams to solve big, complex problems that make a real difference to the future of Australia and the world.

You'll get to work with some of the most talented minds in their fields, not just in Australia, but in the world. At CSIRO, we spark off each other, learn from each other, trust each other and collaborate closely to achieve more than we could individually.

CSIRO Early Research Career (CERC) Postdoctoral Fellow Experience Employee Value Proposition (EVP). Find out more [here](https://www.csiro.au/en/careers/postdoctoral-fellowships)!

* + **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:

* People First
* Further Together
* Making it Real
* Trusted

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

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