# Postdoctoral Fellowship – CSOF4

Role summary for potential applicants

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| Advertised Job Title**:** | Postdoctoral Fellowship in Experimental Molecular Microbiology |
| Reference Number**:** | 57011 |
| Classification**:** | CSOF04 |
| Salary Range: | AU $80K to AU $91K plus up to 15.4% superannuation |
| Location**:** | Canberra (Black Mountain), ACT, Australia |
| Tenure: | Specified Term of 2 years and 6 months (or part time equivalent) |
| Relocation assistance**:** | Will be provided to the successful candidate if required. |
| Applications are open to: | * All Candidates
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| Functional Area**:** | Research Scientist - Postdoc |
| % Client Focus - Internal: | 100% |
| % Client Focus - External: | 0% |
| Reports to the: | Team Leader |
| Number of Direct Reports: | No direct reports |

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| **Role Overview:** |
| **Postdoctoral Fellowships** at CSIRO provide opportunities to scientists 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. The **Synthetic Biology Future Science Platform** (SynBio FSP) is developing a research portfolio which will be spread across CSIRO and a wide variety of partner organisations (universities, industry, NGOs, other research organisations, etc.), both national and international. Synthetic biology will provide solutions to many of the challenges we face at the beginning of the 21st century. To have maximal impact, synthetic biology requires a suite of organismal platforms to guide the design and construction of novel biologically-based systems.**Lichen symbiotic systems** could address two major challenges: 1) the need for useful compounds for applications and innovations in pharmaceutical, cosmetic and chemical industries, and 2) environmental degradation. Lichens could address these problems because they produce a unique array of secondary metabolites and they are an important component of microbial and cryptogamic communities found in extreme environments. The main obstacle to exploiting the lichen symbiosis for synthetic biology lies in our general inability to resynthesise lichens in the laboratory. Little is known about the processes by which a lichen forms and, therefore, about how to manipulate or mimic lichen development.The **overall objective of this project is to build a platform for reliable resynthesis of a lichen symbiosis** by focusing on two aims:* Creating novel devices to manipulate interactions among symbionts and lichen-colonising microbes,
* Using ‘omic approaches to characterise key features of lichen development.

This role will focus on both aims and will work in conjunction with experts on lichen biology, ‘omics, device design and fabrication, and network modelling to achieve them. |

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| **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.
* Document cellular changes in the fungal and algal partners during lichen development, using various microscopy techniques, and by collecting liquid and/or cellular samples to generate genomic, proteomic, transcriptomic, lipidomic and metabolomic data.
* Perform quality control and assembly of high throughput sequencing data, as well as the annotation of reference genomes for the fungal and algal study species.
* Engage with external collaborators and the Australian nanotechnology community to develop expertise in the design and fabrication of micro- and mesoscale devices that will be used to manipulate interactions between the fungal and algal partners during lichen development.
* Liaise with internal and external collaborators to collate the omics data and analyse these data with the help of a systems biology modeller who is part of the project team.
* Undertake regular reviews of relevant literature and patents.
* Produce high quality scientific and/or engineering papers suitable for publication in quality journals, for client reports and granting of patents.
* Prepare appropriate conference papers and present those at conferences as agreed with your supervisor.
* 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.
* Other duties as directed.

**CSIRO’s postdoctoral training program**is developed between the Postdoctoral Fellow and a CSIRO scientist or engineer. 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> |

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| **Selection Criteria:** |
| *Under CSIRO policy only those who meet all essential criteria can be appointed****Pre-Requisites:***1. **Education/Qualifications:** A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as plant or fungal molecular biology and microbiology*.*

***Please note:*** *To be eligible for this role you must have* ***no more than 3 years (or part time equivalent)*** *of relevant postdoctoral experience.*1. **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.**
2. **Publications: A record of publications in quality, peer reviewed journals.**
3. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.

***Essential Criteria:***1. Demonstrated ability to independently design, plan, and implement multiple culture experiments involving micro-organisms in a time-efficient manner.
2. Significant experience with using micro-organisms (preferably fungi or microalgae) in research experiments, including working in sterile conditions, isolating/manipulating single cells, and co-culturing micro-organisms.
3. Demonstrated technical capability in plant and/or fungal molecular biology, including DNA or RNA extractions, high throughput sequencing, and genome assembly.
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.

**Desirable Criteria:**1. Knowledge of lichen biology.
2. Demonstrated experience in metabolomics, proteomics, and/or lipidomics.
3. Demonstrated experience in transcriptomics.
4. Knowledge of systems and/or synthetic biology.

**As Australia’s Innovation Catalyst, CSIRO has strategic actions underpinned by behaviours aligned to**:* Excellent science
* Inclusion, trust & respect
* Health, safety & environment
* Delivery on commitments.

**In your application and at interview you will need to demonstrate alignment with these behaviours.**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$80,833).* 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:***Applicants who are not Australian Citizens or Permanent Residents 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> |

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| **Other Information:** |
| **How to Apply**Please apply for this position online at <https://jobs.csiro.au/> and enter requisition number **57011**. Internal applicants please apply via ‘Jobs Central’ in SAP (click ‘Recruitment’).Please load your CV (Maximum 2MB). You may also be required to respond to some screening questions.  If you experience difficulties applying online call 1300 984 220 for assistance. Outside Australian business hours please email: careers.online@csiro.au. **Referees**: Please provide contact details of two previous supervisor or academic/professional referees in your resume/CV. We will ask your permission before making contact. **Contact:** If after reading the position details above you require more information please contact:Dr Cécile Gueidanvia email: Cecile.Gueidan@csiro.au or phone: +61 (0)2 6246 5018Please do not email your application directly to Dr Gueidan. Applications received via this method may not be considered by the selection panel.**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](http://www.csiro.au). We work flexibly at CSIRO, offering a range of options for how, when and where you work. Talk to us about how this role could be flexible for you. Find out more! [CSIRO Balance](https://www.csiro.au/en/Careers/A-great-place-to-work/Work-life-balance) **About the SynBio Future Science Platform** [Future Science Platforms](http://www.csiro.au/en/About/Future-Science-Platforms) are an investment in science that underpins innovation and that has the potential to help reinvent and create new industries for Australia. FSPs will see us grow the capability of new generation of researchers and allow Australia to attract the best students and experts to work with us on future science. They are strategic investments aimed at developing capacity in areas of identified future importance for Australia. FSPs are both impact and science focused, developing innovative scientific solutions with industry, government and university partners. They support world class, coherent and creative research teams which integrate science and delivery over the long term, looking to the future science needs of CSIRO and our partners with a 5 to 10 year vision. To position Australia to build a vibrant synthetic biology research and development community to support the bio-based industries and ecoengineering activities of tomorrow, CSIRO has established the [Synthetic Biology FSP](https://research.csiro.au/synthetic-biology-fsp/) (SynBioFSP). Synthetic Biology (SynBio) is the design and construction of biological parts, devices, and organisms (usually based on DNA-encoded componentry); and their application for useful purposes. The SynBioFSP has a mission to develop capacity in synthetic biology within CSIRO and across Australia, in a collaborative and transparent manner. Science capability will be strongly aligned with CSIRO business unit capabilities and will allow CSIRO to deliver novel future outcomes for external partners. The program has a $13 million funding envelope over the first three years. We aim to:1. Build the foundational capabilities to advance SynBio research, including significant investment in social licence to operate
2. Drive national coordination by making these foundational capabilities widely available to the broad research community, governments, and industry for the development of novel industrial products, pharma, biocontrol agents, and strategies for building ecosystem resilience to environmental change, and
3. Build strong partnerships, collaborations, and connections across the innovation sector to develop these novel products and applications responsibly.
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