# Position Details

## CSIRO Early Research Career (CERC) Postdoctoral Fellowship– CSOF4

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| The following information is for applicants | |
| Advertised Job Title | CSIRO Postdoctoral Fellowship in Urban Methane Emissions |
| Job Reference | 75522 |
| Tenure | Specified Term of 3 years  Full-time |
| Salary Range | AU$85,361 to AU$96,573 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Aspendale (Melbourne), VIC |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens and Permanent Residents * Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible onshore candidates) |
| Position reports to the | Team Leader of Modelling: Greenhouse and Ozone Depleting Substances team |
| Client Focus – Internal | 90% |
| Client Focus – External | 10% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Cathy Trudinger via email at [cathy.trudinger@csiro.au](mailto:cathy.trudinger@csiro.au) or phone +61 3 9239 4593 |
| 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.**

The Postdoctoral Fellow will join a team of international leaders in inverse modelling and atmospheric observation. They will utilize information contained in atmospheric measurements of methane concentrations (and associated tracers) around Melbourne to estimate methane emissions at the urban scale for uncertain sectors such as landfills, waste-water treatment, reticulated gas and wetlands. The primary focus of this role is on modelling and will involve the use of an atmospheric transport model and probabilistic inference*.*

The role sits within the Atmospheric Composition and Chemistry Group in CSIRO’s Climate Science Centre. The successful candidate will be someone who wants to work in a team, has keen interest in climate science and a strong drive to deliver science in support of the Paris Climate Agreement.

### Duties and Key Result Areas:

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

* + Apply state-of-the-art regional inversion methodology to estimate methane emissions for Melbourne.
  + Compare estimated emissions with bottom-up (inventory) estimates where available, assess the potential for mitigation where appropriate and assess vulnerability to climate change where possible (e.g. wetlands).
  + Utilize existing and ongoing atmospheric observations around Melbourne (from fixed observing sites, moving platforms and satellites), and work with measurement experts in the team to plan future additional observations.
  + Undertake regular reviews of relevant literature.
  + Produce high-quality scientific papers suitable for publication in quality journals.
  + Prepare appropriate conference papers and present those at conferences as agreed with your supervisor.
  + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + Contribute to the development of innovative concepts and ideas for further research.
  + Proactively undertake development to grow effective researcher capabilities to support career goals.
  + Work collaboratively with colleagues within your team, the business unit and across CSIRO.
  + 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 Mathematics, Physics or Earth Sciences.

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. Strong skills in high-level language computer programming, and familiarity with command-language scripting in Unix or Linux environments.
2. Strong mathematical modelling background, preferably in earth sciences.
3. Demonstrated experience in one or more of the following areas:
   * Inversion methodology,
   * Atmospheric transport processes, particularly in a regional or urban setting,
   * Atmospheric composition and greenhouse gas emissions,
   * Methane source processes,
   * Remote sensing of atmospheric composition.
4. 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.
5. A sound history of publication in peer reviewed journals and/or authorship of scientific papers and reports.
6. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.
7. **The ability to work effectively as part of a multi-disciplinary, potentially regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.**

## **Desirable:**

1. Experience with high-performance computing (i.e. supercomputing).
2. Experience developing or using global or regional atmospheric inversions.
3. Experience developing or running atmospheric transport models.
4. Sound understanding of rigorous uncertainty analysis, probabilistic inference and/or statistical optimization.
5. Experience utilizing bottom-up (inventory) emission estimates.
6. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.

To be appointed to this CERC Postdoctoral Fellowship role within CSIRO, candidates will be expected to commence employment by December 2021/January 2022. To be appointed as a CERC 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 ($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.
* The successful candidate may be required to undertake a pre-employment medical examination prior to commencement.
* 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:

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

Find out more about CSIRO [Oceans and Atmosphere](https://www.csiro.au/en/Research/OandA)