# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Research Scientist - Human Gut Microbiome |
| Job Reference | 76412 |
| Tenure | Specified Term of up to 3 years  Full-time |
| Salary Range | AU$100k to AU$108k pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Adelaide, SA or Sydney, NSW (please note, if the successful candidate is based in Sydney, they will commence at North Ryde, NSW and will transfer to Westmead, NSW in 2022) |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens and Australian Permanent Residents * Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible onshore candidates) |
| Position reports to the | Research Science Supervisor / Microbiomes for One Systems Health – Future Science Platform |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Dr. Michael Conlon via email at michael.conlon@csiro.au or phone +61 8 8303 8909, or Dr. Kim Fung via email at kim.fung@csiro.au or phone +61 2 9490 8710. |
| 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

The role of a **Research Scientist** in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. You will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

The Research Scientist – Human Gut Microbiome role will be part of the **Microbiomes for One Systems Health - Future Science Platform (FSP).** The position will define critical elements of the human gut microbiome and their metabolic products that are important for maintaining health or predicting disease states – with the ultimate goal of constructing a working model of the ideal human gut microbiome. This will include understanding the influence of microbes and their products from other domains such as plants, soils, animals, and foods. The activity is expected to lead to long-term health benefits for Australian and global communities through development of improved markers of health and disease and thus ability to inform the health state of an individual and susceptibility to disease, to allow earlier diagnosis and intervention.

**Microbiomes for One Systems Health - Future Science Platform**

CSIRO FSPs address new scientific challenges for Australia. They are an investment in science that underpins innovation that has the potential to help reinvent and create new industries. FSPs allow the development of capability and capacity for a new generation of researchers to work with CSIRO on future science.

The Microbiome FSP is developing new understanding of microbiome connectivity across the environment to human continuum and how system perturbations impact on microbiome functionality, diversity, and systems health. A key objective is to capture greater benefit from microbiome interactions through more informative and predictive frameworks for functionality and by targeted interventions. Capacity to directly manipulate microbiomes across hosts and environments will provide new opportunities for bio-based solutions to be developed and applied to improve host and environmental health and for increased benefit to plants, animals, and humans.

The portfolio of research within the Microbiome FSP is focussed on new science that addresses systems connectivity, predictive frameworks and deliberate Interventions through the application of multi-omics tools to analyse point and system level change and associated measures of functionality both within and across interconnected biomes. This includes integration and analysis of multi-layered data and use of empirical and/or statistical modelling. The science portfolio of the FSP spans multiple CSIRO Business Units that address key focal areas that include i) Environment, Soil & Plant Health, ii) Food Chain & Production iii) Diet, Gut and Health and iv) Optimized Industry & Urban Processes.

Further information: <https://research.csiro.au/microbiome/>

### Duties and Key Result Areas

* Within broad guidelines and under limited direction, use professional expertise, knowledge of other disciplines and research experience to plan and prepare research proposals and grant applications, and carry out research investigations related to the goals of the FSP, requiring originality, creativity, and innovation to formulate, develop and complete approved research activities.
* Contribute to the development and application of relevant cutting-edge microbiological methods and technologies in the human gut microbiome area, including assessment of microbial populations and metabolic outputs (metagenomics and metabolomics) and physiological impacts.
* Perform experiments or sampling to achieve the goals described above using biochemistry, cell culture, *in vitro* fermentation, organoids, small animals, or human interventions and/or sampling.
* Apply current and emerging statistical, bioinformatic and modelling methods to the analysis of complex data.
* Work collaboratively as part of a multi-disciplinary, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO’s and the FSP’s scientific objectives.
* Collaborate with or provide services for external academic partners and commercial entities.
* Provide supervision of laboratory and data analysis methods within the scientist’s areas of expertise. This may include the supervision of technical staff, students, and post-doctoral fellows.
* Maintain confidentiality when working with commercially sensitive or personal information.
* Present results in a meaningful format, prepare reports and write scientific papers for publication, and provide oral communications at CSIRO meetings, as well as at meetings with clients and at conferences.
* 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.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* Other duties as directed.

## **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 responses by adapting/creating and testing alternative solutions.
* **Independence:** Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.
* **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 change.

## **Selection Criteria**

#### Essential

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

1. A PhD (or an equivalent combination of qualifications and research experience) in a relevant field such as human gut microbiology, applied microbiology, clinical microbiology, microbial ecology or molecular biology.
2. Strong record of accomplishment in applying advanced molecular and biochemical techniques such as metagenomics and metabolomics for analysis of microbial communities and their activities in humans.
3. Demonstrated ability to apply statistical, modelling, visualisation and/or computational tools in relation to characterisation of the human gut microbiome and/or metabolome.
4. Willingness to contribute to research studies involving animals and humans, including the safe handling/processing of biological samples derived from them (e.g. human stool).
5. Demonstrated ability to undertake original, creative, and innovative research by generating and pursuing novel ideas and solutions to scientific research problems.
6. High level of oral and written communication skills with a demonstrated publication history of authorship on scientific papers in peer reviewed journals and/or reports, grant applications or inventorship on patent applications.
7. **The ability to work effectively as part of a multi-disciplinary, regionally dispersed project team, plus the motivation and discipline to carry out autonomous research.**

## **Desirable**

1. Experience in the analysis of large datasets related to microbial populations, health outcomes or other complex systems.
2. Capabilities in mathematical and 3D computer modelling, and associated use of computer software.
3. A research background and knowledge in areas such as human nutrition, intestinal biology, or gut health/disease, and especially any experience relating to the impacts of microbes from domains such as soil, animals, plants, and food on humans.
4. **Experience in the culturing of bacteria or other microorganisms, especially those derived from the human gut.**
5. Experience in carrying out experiments using cell culture, in vitro fermentation models that simulate the human gut, or organoids.

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/
* To be willing and able to undertake interstate and potentially international travel as required.
* If the successful applicant is based in Sydney, they will commence at North Ryde, NSW and will transfer to Westmead, NSW in 2022.

## **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 [Health and Biosecurity](https://www.csiro.au/en/Research/BF)