## POSITION DESCRIPTION

<table>
<thead>
<tr>
<th>Position Title:</th>
<th>Postdoctoral Research Fellow (Lateral Gene Transfer)</th>
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<tbody>
<tr>
<td>Organisation Unit:</td>
<td>School of Chemistry and Molecular Biosciences</td>
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<tr>
<td>Position Number:</td>
<td>3032353</td>
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<tr>
<td>Type of Employment:</td>
<td>Full Time Fixed Term for 2 years (Possibility of Renewal)</td>
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<tr>
<td>Classification:</td>
<td>Academic Research Level A</td>
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## THE UNIVERSITY OF QUEENSLAND

The University of Queensland (UQ) contributes positively to society by engaging in the creation, preservation, transfer and application of knowledge. UQ helps shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas that benefit the world. UQ strives for the personal and professional success of its students, staff and alumni. For more than a century, we have educated and worked with outstanding people to deliver **knowledge leadership for a better world**.

UQ ranks in the world’s top universities, as measured by several key independent ranking, including the Performance Ranking of Scientific Papers for World Universities (43), the US News Best Global Universities Rankings (52), QS World University Rankings (47), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (65). UQ again topped the nation in the prestigious Nature Index and our Life Sciences subject field ranking in the Academic Ranking of World Universities was the highest in Australia at 20.

UQ has an outstanding reputation for the quality of its teachers, its educational programs and employment outcomes for its students. Our students remain at the heart of what we do. The UQ experience – the UQ Advantage – is distinguished by a research enriched curriculum, international collaborations, industry engagement and opportunities that nurture and develop future leaders. UQ has a strong focus on teaching excellence, winning more national teaching excellence awards than any other in the country and attracting the majority of Queensland’s highest academic achievers, as well as top interstate and overseas students.

UQ is one of Australia’s Group of Eight, a charter member of edX and a founding member of Universitas 21, an international consortium of leading research-intensive universities.

Our 50,000-plus strong student community includes more than 13,000 postgraduate scholars and more than 12,000 international students from 144 countries, adding to its proud 240,000-plus alumni. The University has about 7,000 academic and professional staff and a $1.8 billion annual operating budget. Its major campuses are at St Lucia, Gatton and Herston, in addition to teaching and research sites around Queensland and Brisbane city. The University has six Faculties and four University-level Institutes. The Institutes, funded by government and industry grants, philanthropy and commercialisation activities, have built scale and focus in research areas in neuroscience, biomolecular and biomedical sciences, sustainable minerals, bioengineering and nanotechnology, as well as social science research.

UQ has an outstanding track-record in commercialisation of our innovation with major technologies employed across the globe and integral to gross product sales of $11billion+ (see [http://uniquest.com.au/our-track-record](http://uniquest.com.au/our-track-record)).

UQ has a rapidly growing record of attracting philanthropic support for its activities and this will be a strategic focus going forward.
Organisational Environment

The School of Chemistry and Molecular Biosciences (SCMB) combines the disciplines of Chemistry, Biochemistry & Molecular Biology, Microbiology and Parasitology into a single academic unit. The School has modern research laboratories with state-of-the-art equipment and research infrastructure. The School includes over fifty academic staff, who are published internationally and have extensive research backgrounds.

The Australian Centre for Ecogenomics (ACE) is a strategic research initiative established at UQ in 2010 under the direction of Professor Phil Hugenholtz and Associate Professor Gene Tyson. It provides a focal point for sequence-based analysis of microbial communities and builds strength in this space not only in Australia, but the southern hemisphere as a whole. ACE is located on Level 5 of the Molecular Biosciences Building (#76) in SCMB. More information about ACE and SCMB may be found on the websites [ACE Website] and [SCMB Website] respectively.

Information for Prospective Staff

Information about life at UQ including staff benefits, relocation and UQ campuses is available at - [http://www.uq.edu.au/current-staff/working-at-uq](http://www.uq.edu.au/current-staff/working-at-uq)

The University of Queensland [Enterprise Agreement](http://www.uq.edu.au/current-staff/working-at-uq) outlines the position classification standards for Levels A to E.

DUTY STATEMENT

Primary Purpose of Position

The appointee will be working as part of a team on an ARC Laureate Program, entitled “Reconstructing the universal tree and network of life” led by Professor Phil Hugenholtz. This program leverages the vast number of draft genomes emerging from metagenomic studies, and aims to systematically organise and explore >100,000 microbial genomes from uncultured regions of the tree. The appointee’s primary role will be to map thousands of lateral gene transfer (LGT) events across a conserved vertically inherited core genome tree in order to cross-calibrate normalized taxonomic ranks (according to relative evolutionary divergence), and to explore the origins and timing of metabolic processes across the bacterial and archaeal domains.

Duties

Duties and responsibilities include, but are not limited to:

Research

- Statistical analysis and interpretation of high-throughput sequence data
- Application of bioinformatic tools for data analysis
- Being highly proactive in generating high-quality, high-impact journal publications
- Presenting research findings at seminars and conferences
- Advising and supervising postgraduate students and working with colleagues and postgraduates in the development and implementation of joint research projects
• Carefully documenting all procedures and code
• Any other duties as reasonably directed by your supervisor

Other
Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:

• the University’s Code of Conduct
• requirements of the Queensland occupational health and safety (OH&S) legislation and related OH&S responsibilities and procedures developed by the University or Institute/School
• the adoption sustainable practices in all work activities and compliance with associated legislation and related University sustainability responsibilities and procedures
• requirements of the Education Services for Overseas Students Act 2000, the National Code 2007 and associated legislation, and related responsibilities and procedures developed by the University

Organisational Relationships
The position reports to Professor Phil Hugenholtz, Australian Centre for Ecogenomics, School of Chemistry & Molecular Biosciences.

SELECTION CRITERIA

Essential

• A PhD specialising in one or more of the following areas: phylogenetics, bioinformatics, genomics, metabolic reconstruction, or molecular microbial ecology
• At least three years’ full-time experience (during the PhD and/or otherwise), or its equivalent, in a relevant area of molecular biology, microbiology, genomics, bioinformatics or a related field
• Knowledge of phylogenetic methods, including the computational inference of LGT
• Demonstrated experience with the application, analysis and interpretation of high-throughput sequencing data
• Advanced knowledge of microbial evolution, ecology, metabolism
• Evidence of a high level of contribution to research through publication of scholarly papers in the international literature and presentation of scientific work at international meetings
• Positive, can-do attitude
• Ability to work collaboratively within a large multi-disciplinary team
• High level of communication skills including excellent writing ability
• Strong interpersonal skills
• Ability to organise and prioritise own work with minimal supervision
• Delivery of results to required standard and schedule
Desirable

- Experience with gene and genome-based phylogenetic inference methods
- Experience with the assembly and automated annotation of next-generation sequence data
- Experience with automated bioinformatic and/or computational workflows
- Knowledge of common statistical methods such as linear and logistic regression, parametric and non-parametric tests, and multi-variate methods (e.g. PCA, MDS)
- The ability to program in a scripting language (Python, Perl, Ruby or C++) and the statistical computing language R
- Experience advising undergraduate and postgraduate students
- Knowledge of Unix and/or Linux
- Knowledge of computational methods for genome annotation and inference of the metabolic potential
- Knowledge of international public data resources in genomics

Qualification Verification
An appointment to this position is subject to the verification of the highest academic qualification from the conferring institution.

The University of Queensland values diversity and inclusion and actively encourages applications from those who bring diversity to the University. Please refer to the University's Diversity and Inclusion webpage (http://www.uq.edu.au/equality) for further information and points of contact if you require additional support.

This role is a full-time position; however, flexible working arrangements may be negotiated.

Accessibility requirements and/or adjustments can be directed to the contact person listed in the job advertisement.