POSITION DESCRIPTION

Position Title: Bioinformatician / Software Developer
Organisation Unit: School of Chemistry and Molecular Biosciences
Position Number: 3044111
Type of Employment: Full Time, Fixed Term for 12 months (with possibility of 12 month extension)
Classification: HEW Level 5 or 6 (depending on qualifications & experience)

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 (45), QS World University Rankings (48), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (69). UQ again topped the nation in the prestigious Nature Index, and our Academic Ranking of World Universities result in the field of Life and Agricultural Sciences is 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).

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 Faculty of Science is recognised as a powerhouse for some of the world’s leading scientists, teachers, science programs and commercial outcomes. The Faculty is one of the largest Science groupings in Australia, with approximately 1100 (equivalent full-time) staff, and about 7500 (equivalent full-time) students.

Throughout its Schools and Centres, the Faculty unites the disciplines of agriculture and animals, biomedical and biological sciences, chemistry, earth sciences, food sciences, geography, marine science, maths and physics, the environment and veterinary science.

With strong links between the enabling and applied sciences, UQ researchers and graduates are working on a wide range of groundbreaking projects from the molecular characterisation of drug resistant bacteria that affect piglets through to finding better treatments for illness and rehabilitation of the environment.

Information about the Faculty may be accessed on the Faculty’s web site: http://www.science.uq.edu.au/

**School of Chemistry and Molecular Biosciences**

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 web sites 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
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 >1,000,000 microbial genomes from uncultured regions of the tree. The appointee’s primary role will be to aid in the development of the computational infrastructure required to explore the evolutionary and metabolic diversity of these genomes.

Duties

Duties and responsibilities include, but are not limited to:

- Development of Python scripts to help maintain and expand the Genome Taxonomy Database (GTDB: gtdb.ecogenomic.org), our in-house PostgreSQL database currently storing information on over 200,000 genomes
- Development of bioinformatic pipelines for analyzing data within the GTDB
- Application of bioinformatic tools for analyzing phylogenomic data
- Aiding in data analysis and interpretation
- Enhancing the functionality of the GTDB website

Other

Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including but not exclusive to:

- 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 of 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 the Professor Phil Hugenholtz.
SELECTION CRITERIA

- Bachelor, Master or PhD degree in one or more of the following areas: bioinformatics, computer science, phylogenetics, or microbial genomics
- Knowledge of Linux and common command line tools and proficiency with data analysis and interpretation
- Ability to work collaboratively within a multi-disciplinary team and proven ability to organise and prioritise own work
- High level of communication skills including excellent writing ability and strong interpersonal skills
- Experience with SQL and database design and with developing bioinformatic workflows
- Familiarity with bioinformatic tools used in phylogenetics and microbial genetics
- Ability to program in common web development languages (JavaScript, CSS, Python) and familiarity with data visualization libraries and framework (D3js, Bootstrap)
- Knowledge of international public data resources in genomics

The exact nature of the duties the successful candidate is assigned will reflect the candidate’s specific skill sets. It is the sum total of experience and expertise that will be used to determine between HEW 5 and 6.

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/equity) 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 science.hr@uq.edu.au