

# Genome Innovation Hub

A collaborative hub for UQ researchers

## Call for GIH External Projects for 2022

**The Genome Innovation Hub (GIH) is a University of Queensland initiative and part of UQ Research Infrastructure. Its aim is to develop innovative approaches to advance technologies in structural and functional analysis of genomes at the University of Queensland (UQ).**

GIH acts as a collaborative research centre, providing support for all UQ researchers to gain access to genomics expertise and enhance its core capabilities. GIH works directly with UQ clinicians and scientists on projects of novel and promising methodologies which are focussed on the key areas of health, agriculture and the environment.

Once implemented by GIH, these technologies (methods, protocols, software, expertise, etc.) will be made available through UQ Research Infrastructure Services, other UQ Service Providers, or through research groups willing to collaborate and/or train research staff in the newly developed approaches.

## UQ Genomics research

UQ has a wealth of genomic expertise in a wide range of disciplines, across multiple Institutes, Centers, and Faculties. This expertise is supported by significant local infrastructure including core genomic facilities, high performance computing and software tools, microscopy and advanced imaging, robotics and high through-put screening, animal models, genome editing, metabolomics, proteomics, nanotechnology and drug discovery. This is further enhanced by UQ's unique relationships with major private and public teaching hospitals in Brisbane and by national and international genomics partnerships across academic, government and industrial sectors.

## GIH expertise in functional genomics

Collectively, the GIH management group, its collaborators and partners provide a wide-range of knowledge in genomic analysis and its related applications. The in-house team of research scientists provide expertise in both traditional “wet” laboratory techniques and “dry” bioinformatics analysis methods for genomic research in a range of organisms. It is this collective experience that places GIH in a strong position to develop innovative genomic capabilities at UQ.

Key areas of experience include:

- Single-cell sequencing and library preparation
- Long read sequencing
- Protein engineering and purification
- Genome editing and manipulation
- Spatial transcriptomics/proteomics and advanced imaging
- Bioinformatic assembly of complex genomes

- Transcriptomics
- High throughput genetic screening platforms
- Computational tool development for analysis of genomic and transcriptomic data
- DNA and RNA extraction from difficult sources
- Microfluidic partitioning and barcoding for single-cell analysis

## External Collaborative Projects

In 2018, GIH began engaging in external collaborative projects in partnership with research groups across UQ to develop genomic-based cutting-edge technology breakthroughs (methods and pipelines).

Collaborating research groups work closely with GIH in the design and development of projects as well as actively contributing to projects, including co-investment in funding and personnel expertise.

Projects are prioritized on the basis of novelty and transformative impact in advancing genomic applications and/or those that significantly drive down the costs of these applications.

## 2022 External Collaborative Projects

Collaborating research groups with proposals for innovative genomic projects will be again sought for 2022.

For successful applications, GIH staff and potential funding toward GIH consumables will support each project to develop cutting-edge technology breakthroughs (methods and pipelines).

Proposals can be entirely wet-lab-based, entirely bioinformatics-based or a combination of the two, and will vary in requirements for GIH budget and/or GIH staff support.

## 2022 Application Guidelines

### Project Application

2022 project proposals must address all of the required sections in the application template. Note that innovation represents a major contribution to the project selection criteria and ranking, so proposals should have a strong emphasis on this aspect.

Future uptake of project outcomes by other researchers must be considered in the proposal. As such, for ease of future application of methodologies and/or techniques, projects may choose to utilise pre-existing infrastructure available within UQ core facilities, central research platforms and centers.

### Project Selection Criteria and Ranking

#### 1. Genomic Innovation (40%)

- Is this a major new capability that will help UQ to establish or maintain a competitive position nationally and internationally?

#### 2. Broad Applicability/Uptake (20%)

- Is there wide-ranging potential for uptake at UQ based on research interest and has expertise in this space been illustrated?
- Is there a clear path for future application of techniques and is this outlined in the proposal?
- Does existing infrastructure support the project proposal and future accessibility by other researchers (costs, access, technical skills required)?

#### 3. Team Quality and Feasibility (20%)

- Does the collaborating team have track record/capability in the proposed area?
- Does rationale/preliminary experiments convincingly demonstrate feasibility of project and fit with GIH wet-lab and bioinformatic expertise?

#### 4. Co-contribution (10%)

- Does the proposal include of leveraged support (funding) and in-kind

contribution of collaborating researchers?

#### 5. Outcome (10%)

- Is there a clear plan for the research outcomes (publications, funding applications, collaborations) and what is the contribution to current research goals?

### Timelines for Evaluation

Applications for 2022 projects will open on the 12th October and close on the 26th November 2021.

Applicants whose proposals are shortlisted will be contacted in December and for this call we will be conducting interviews in January 2022.

Successful proposals will be announced in February 2022.

### Submission

Project Proposals must follow the 2022 GIH External Project Application template.

A digital version of the application template can be downloaded from the UQ Genome Innovation Hub website (link below) or requested via an email to GIH.

<https://gih.uq.edu.au/2022projectcall>

Email completed GIH External Project Applications in PDF or Word format to:

[GIHapplications@uq.edu.au](mailto:GIHapplications@uq.edu.au)

### Further information

Additional information regarding the 2022 project application can be found in the "Guide to applicants of GIH 2022 External Projects" on the UQ Genome Innovation Hub webpage.



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**Keep up to date:**

For up-to-date announcements and to find out more about our GIH collaborative research, subscribe to our newsletter, see our GIH website or follow the GIH twitter feed (scan the QR codes below).

**UQ Genome Innovation Hub**



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