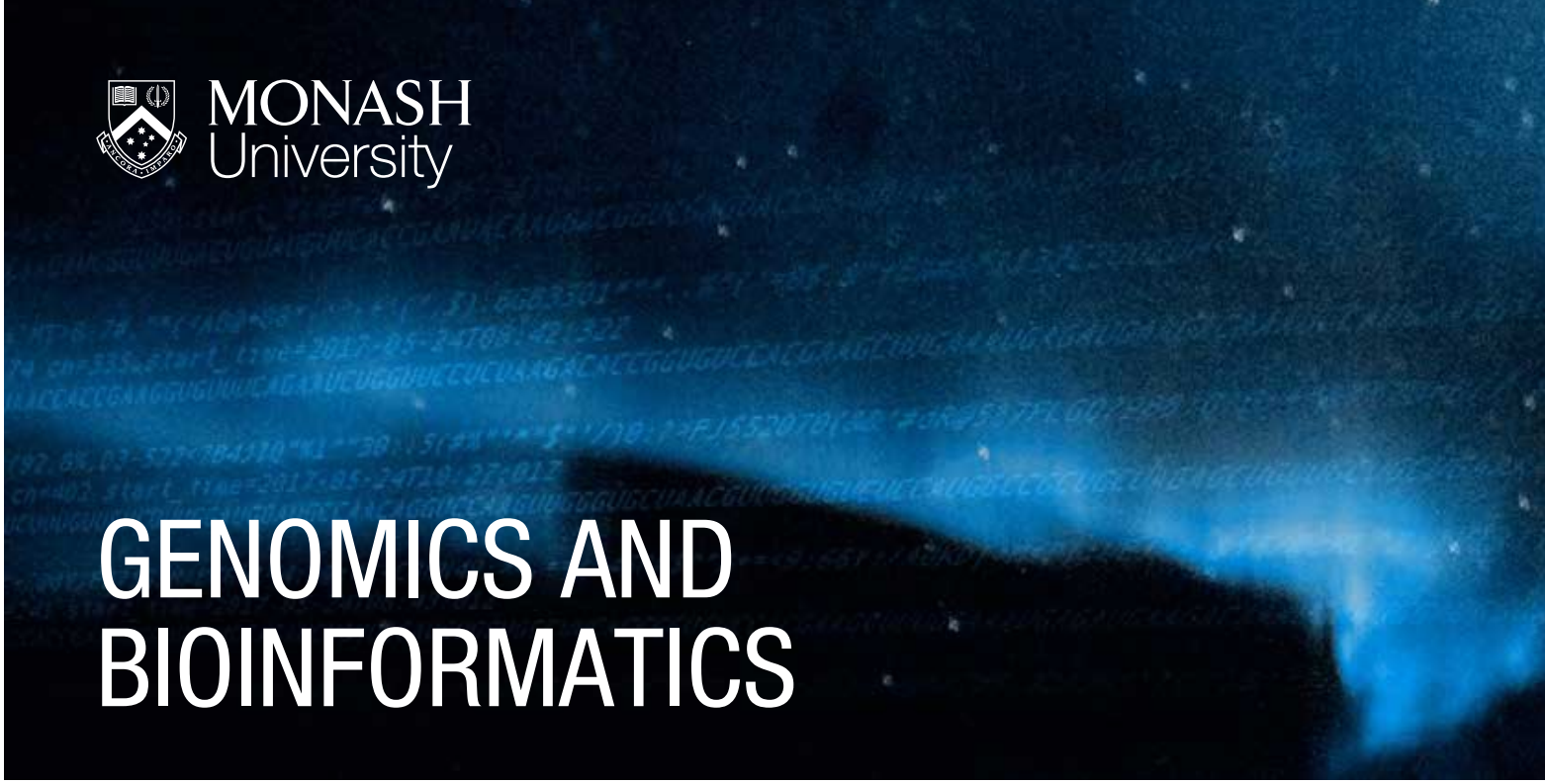

MONASH University

GENOMICS AND BIOINFORMATICS

The Monash Genomics and Bioinformatics Platform is a state-of-the-art research platform that provides end-to-end services from experimental design to sample prep, sequencing, bioinformatics analysis and data delivery.

The Platform is comprised of a genomics node and a bioinformatics node that provides a comprehensive suite of bioinformatics and genomics services and expertise to support research across a wide range of fields, including biology, medicine, ecology, and environmental science.

Client support is a hallmark of our platform and expert staff are always available to assist you with comprehensive troubleshooting, technical advice, bioinformatic analysis, bioinformatic training, grant and publication writing assistance.

KEY INSTRUMENTATION

- Applied Biosystems 3730xl genetic analyser
- MGI Tech DNBSEQ-G400RS Next-Generation sequencer
- Illumina NextSeq 500 Next-Generation sequencer
- Oxford Nanopore MinION Mk1B and Mk1C
- 10X Genomics Chromium (single-cell) system
- MGI STOmics/Stereomics spatial transcriptomics
- Nanostring GeoMX spatial multi-omics platform
- Nanostring CosMX in-situ spatial multi-omics platform
- Tecan Fluent 780 / DreamPrep liquid handling system

DATA ANALYSIS CAPABILITIES

- Experimental design, project scoping, costing
- RNAseq/Transcriptomics
- Whole genome sequencing
- ChiPseq/ATACseq/Cut&Run/Cut&Tag
- Single-cell and Spatially resolved multi-omics
- Variant analysis
- Microbiome profiling
- Genotyping by Sequencing
- Methylation analysis
- Custom analysis pipeline development
- Protein structure prediction

EXPERTISE

Our skilled and dedicated team offer outstanding, professional and personalised services, specialising in fast turnaround Sanger sequencing, Illumina, MGI, and Oxford Nanopore Next-Generation sequencing, and single-cell/spatial multi-omics. They can also provide insight into our advanced genomics and bioinformatics capabilities that will be suitable for your experiment.

WORKING WITH US

- Fee for service
- Consultancies
- Collaborative research
- Training

SPECIALIST SERVICES

Sanger DNA sequencing
With over 30 years of experience, Micromon has built a reputation for providing reliable and customer-focused services capable of producing long sequence reads, in excess of 1000 bp of Q20+ bases. We pride ourselves on having very fast turnaround times and the ability to successfully troubleshoot most technical issues.

Next-Generation sequencing (NGS)
Our NGS service provides a complete sequencing and data analysis solution based on Illumina, MGI and Oxford Nanopore technology, supporting a wide range of applications including amplicon sequencing, genome sequencing, transcriptomics (RNA-seq), small RNA profiling, protein-DNA interaction profiling (ChIP-seq), microbial population profiling (16S & metagenomics), single-cell and spatial multi-omics, and much more.

Our single-cell and spatial multi-omics
Our single-cell and spatial multi-omics solutions provide a full sample-to-answer service from tissue collection to data analysis. This service is pipelined via a series of co-located, highly specialised and highly skilled technology research platforms: the Monash Histology Platform (tissue freezing, embedding, and sectioning), Flowcore (flow cytometry, FACS, cell collection and QC), Monash Microimaging (microscopy), and the Bioinformatics Node (experimental design, bioinformatic data analysis, computing infrastructure).

Bioinformatics Support and Training
A bioinformatician within the platform can partner with researchers to provide an in-depth understanding and expertise over the length of a research project. A basic level of service is also available, with bioinformaticians available to consult over experimental design or by providing preliminary data processing and analysis.

Hands-on training is provided to researchers in conjunction with partners such as Bioplatforms Australia. Topics include various bioinformatics analysis techniques (e.g. RNAseq) as well as programming languages such as R and Python.

Bioinformaticians at Monash University have access to a wealth of high-performance computing, cloud computing, storage and data visualisation technologies. A range of bioinformatic tools maintained by the Platform are freely available.

OTHER SERVICES INCLUDE

- DNA, RNA and Protein Quantitation (Bioanalyser and Fragment Analyser)
- Closed-tube focussed acoustic shearing of DNA, cells and tissues, and substance dissolution/suspension (Covaris)
- Materials testing for microbial content and activity using defined Australian Standards
- Microbial growth media and bacterial cultures
- Grant and publication writing assistance
- Method development and optimisation

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bsi ISO 9001 Quality Management Systems CERTIFIED

monash.edu/researchinfrastructure/mgbp