



## LA TROBE INSTITUTE FOR SUSTAINABLE AGRICULTURE AND FOOD

### Delivering innovation across the “paddock to gut” value chain.

LISAF’s goal is to find solutions that enable sustainable agriculture that will provide food of the quality and quantity to meet global food challenges in coming decades. La Trobe’s visionary investment in the \$288M world-class AgriBio building has cemented its reputation in agriculture and food biosciences, creating a platform for further investment in intellectual capital that will support LISAF. La Trobe University has made a strategic \$25M cash commitment over 5 years for LISAF to leverage further matched funding to support basic and translational research and training in the agri-food sector. Furthermore, La Trobe’s \$5B University City of the Future initiative is ensuring further investment in unique infrastructure and capability to contribute to the whole of value chain innovation that will build critical scale to grow the ecosystem for the future of Australia’s agriculture and food sector.

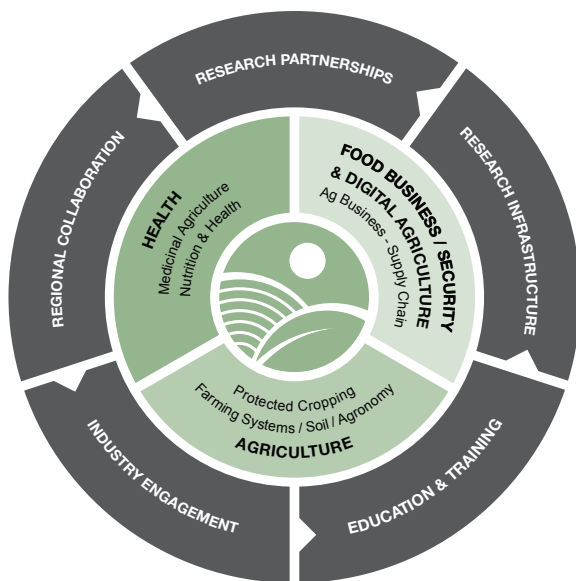


**LA TROBE**  
UNIVERSITY

## A world leading research and training Institute delivering innovative solutions for sustainable and nutritious food production in a resource and climate-constrained world.

- Climate Resilience
- Biosecurity
- Carbon Footprint reduction
- Digital Agriculture
- Industry Ready Skilled Workforce

Our 'Paddock to Gut' program runs across five overlapping domains of (1) Farming Systems, Soils and Agronomy, (2) Protected Cropping, (3) Fit for Purpose Seeds, (4) Food, Nutrition & Health and (5) Food Business and Food Security, and Digital Agriculture with the aim to streamline the development, growing and testing of desirable traits in grains (cereals & legumes) and horticulture produce to produce sustainable food, generate enduring profitability for growers and deliver real benefits for the community and economy.



We have established partnerships with world renowned researchers, growers, health and nutrition specialists, and leading national and international food producers to enable the research underpinning production that is higher yielding and more nutritious, and innovations in food production to work across all elements of the value chain. We also partner with industry and research providers to bridge the gap between agriculture and manufacturing to help commercialise research to grow Australia's food production, food manufacturing and food export businesses.

### Expertise

- Plant physiology.
- Breeding.
- Tissue culture.
- Plant nutrition and cultivation.
- Phenotyping.
- Genomics, proteomics, metabolomics.
- Plant biotechnology.
- Human nutrition and dietetics.
- Food science.
- Food business.
- Food security (provenance).
- Agribusiness solutions.
- Digital agriculture, big data & IoT.

### Capabilities

- World class facilities & expertise in one place.
- Transformation and Gene Editing for crop species.
- Extensive Growth Facilities (Glasshouses, CERs (PC2/QC2)).
- Mineral and chemical analyses of soil, plant and seeds.
- Laser Capture Microdissection.
- Bioinformatics platforms.
- Sequencing Platform.
- Big Data integration and analysis.
- Fluorescence Activated Cell Sorting (FACS).
- Single cell 'omics-RNAseq & metabolomics.
- Phenomics (2D, 3D, hyperspectral, fluorescence, RGB, cloud-based analytics).
- Food, nutrition & dietetics lab.
- Metabolic kitchen.
- Human clinical nutrition.
- Food / feeding trials.
- Nutrition evaluation.

### Omics Capabilities

- Genomics & transcriptomics.
- Glycomics (mono-/oligo-/polysaccharides).
- Metabolomics (untargeted/targeted; including volatiles).
- Proteomics (amino acids/peptides/proteins).