

EMBL
Australia



The Vision for EMBL Australia



The Vision for **EMBL Australia**

Australian research will be connected and internationalised through the creation of **EMBL Australia**. EMBL Australia will drive Australian research through local integrated research networks that connect to global partnerships. It will drive enhanced research quality through the development of world class scientific leaders. The centrepiece of EMBL Australia will be the Partner Laboratory Network of young research groups that will serve as a new paradigm for education, training and highly collaborative research across Australia. The objective is to enhance Australia's international competitiveness in the life sciences, and strengthen its emerging position as a leader in biotechnology research.

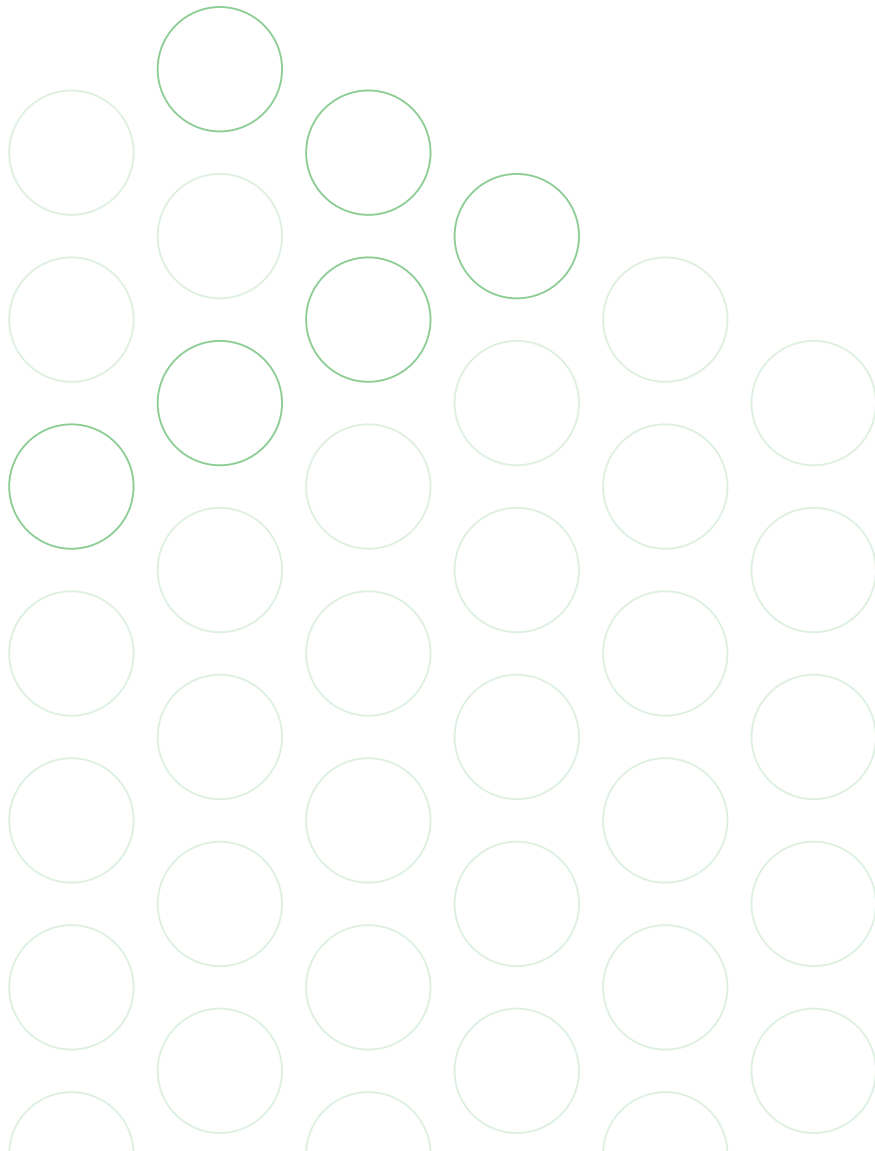
EMBL Australia will focus on this objective through four critical activity streams:

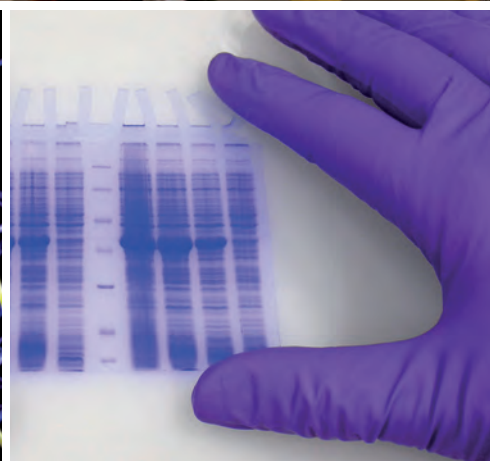
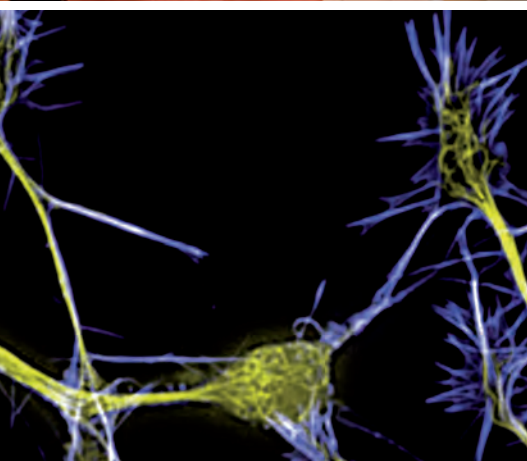
- first-class scientific training and collaborative opportunities for Australian life scientists;
- establishing a EMBL Partner Laboratory Network across Australia;
- pursuing new opportunities in international co-funding for research; and
- exchange expertise, resources, services, and innovation between Europe and Australia.

Principle of Scientific Excellence

Like its European counterpart, EMBL Australia aims to become an international flagship of scientific excellence. The most valuable resource EMBL provides to its member states is highly trained scientists. In Europe, EMBL's turnover system means that it produces world-class researchers at a much higher rate than any other research institute, and has served as a model for numerous academic institutes around the world. EMBL alumni emerge trained in excellence and schooled in collaborative research, enriching the scientific communities that they join and forging links between scientists around the world.

The similar missions that EMBL Australia will carry out on behalf of the nation, and the added value to Australia, will depend upon the excellence of its research performance. The EMBL model – freedom to pursue adventurous, discovery-based science by outstanding young international talent with guaranteed, fixed term research packages, and state-of-the-art support facilities and services – is a proven recipe for innovation at the highest level. In providing this opportunity locally in Australia through the Partner Laboratory Network, the EMBL Australia Scientific Program will strengthen the country's "brain retention." This will occur through the development of a critical mass of expertise to support an active and world-leading research community.





What is EMBL Australia?

Australia currently has a window of opportunity to tap into the best and brightest minds, and infrastructure and resources of Europe's pre-eminent research institute the European Molecular Biology Laboratory (EMBL). EMBL is the flagship of Europe's molecular biology research. It is renowned as one of the world's top research institutes. Australia recently accepted the invitation to become EMBL's first Associate Member. Australia was extended this honour in recognition of its strengths in cell biology, stem cells and regenerative medicine, chemical biology, genetic epidemiology and clinical research.

To capitalise on this strategic position, a coordinating body, 'EMBL Australia', is proposed to deliver the vision. It will provide Australian life scientists access to state-of-the-art core facilities, technologies, and expertise in Europe. It will open new opportunities for Australians to forge collaborations with European research networks and institutions, and to access European funding sources. EMBL Australia also brings the capacity to develop the next generation of Australian leaders in bioscience research through the establishment of an EMBL Australia Partner Laboratory Network.

The Scientific Program for the Partner Laboratory

The Scientific Program for the EMBL Australia Partner Laboratory Network will build upon the strategic alliance with EMBL and its activities in systems biology, whilst capitalising on the specific strengths of Australian life and health sciences. The initial Program will necessarily take the form of a strategic forward look that will be developed over the next year by the EMBL Australia Council, in consultation with the EMBL Australia Scientific Advisory Committee (EASAC).

Research themes in the Partner Laboratory Network will focus on complementary activities that will integrate the proposed EMBL Australia Partner Laboratory nodes, to develop and expand existing strengths of Australian life and health sciences in the following six general areas.

- Regenerative Medicine and Stem Cell Biology
- Human Genetics and Disease
- Cancer and Clinical Research
- Chemical Biology
- Plant Biology
- Bioinformatics and Computational Biology

How will this work?

Through an active partnership with Europe's premier research institute, the EMBL Australia Partner Laboratory Network will seed a dynamic, highly collaborative culture across Australia, conducting research of the highest international standing and establishing collaborations, mentored and reviewed by the world's leading bioscience researchers. The Network will attract state-of-the-art infrastructure, developing and maintaining national core facilities operating at the leading edge of technology development, with direct links to expertise and innovation across Europe. Headquarters at Monash University will provide the necessary Secretariat functions as a single Australian point of contact with EMBL administration, integrating the proposed nodes at the Universities of Western Australia, Sydney and Queensland.

As at EMBL, selection of EMBL Australia Partner Laboratory Group Leaders will involve an international search for scientific excellence, ensuring that only the best in the world are appointed from a global talent pool. EMBL Australia will provide each Partner Laboratory Group with guaranteed minimal research resources for a maximum of nine years. Each Group Leader will initially supervise two PhD students, two postdoctoral fellows and one research assistant, with support provided for laboratory reagents/consumables and access to core research facilities across the Network. Additional external funding can be sought for modest expansion of the Group.

Talented young Australian scientists will also have the opportunity to gain experience at EMBL overseas. Under the EMBL Australia Faculty Development Program two Australia-supported group leaders will be selected by EMBL to establish groups at any of the European sites for up to five years. Return of the Group Leader to Australia after the EMBL appointment would generate a permanent pole of interaction with EMBL and through it, with the European scientific community and the worldwide network of over 3000 EMBL alumni. Conversely, EMBL scientists will be encouraged to spend time at various research centres in Australia to generate two-way information flows and experience.

What are the benefits?

- An internationally based research structure to promote world leading life science in Australia;
- Ability to create an EMBL scholarship and postdoctoral programs to meet Australian needs;
- Group Leader, predoctoral and postdoctoral positions at EMBL's five sites across Europe;
- Membership status in the EMBL network of 1400 staff and 3700 alumni from 60 countries;
- Access to four EMBL interdisciplinary research centres for visiting Australian researchers;
- Higher profile for Australian research in Europe;
- Increased European interest in performing collaborative research in Australia;
- Improved access to European Union Framework funding;
- Linkage with EMBL's research commercialisation and technology transfer arm EMBLEM.

What will be the governance model?

Founding members and EMBL have agreed to a referred governance model and the following key principles to underpin the operational entity of EMBL Australia:

- analogous wherever possible with EMBL;
- acceptable to all funding stakeholders;
- accountable for Australia's Associate membership activities;



The European Molecular Biology Laboratory

EMBL is the flagship of Europe's molecular biology research. It is renowned as one of the world's top research institutes – ranked the highest non-US institute in research performance (in molecular biology and genetics) by ISI Science Indicator for 1992–2002. It has an extremely high impact demonstrated by an average of 51.9 citations per paper and a top-level European network of molecular biologists.

EMBL's missions are to: perform cutting-edge research in molecular biology; to offer services to European scientists; to provide advanced training to researchers at all levels; to develop new technologies and instrumentation; and to actively engage in technology transfer to the benefit of science and society. EMBL has made distinctive contributions to old and new fields of research including bioinformatics, proteomics, comparative and functional genomics and systems biology. Increasing our understanding of biological systems will also have tremendous implications beyond the boundaries of molecular biology, in health, agriculture, biotechnology and pharmaceutical research.

Established by an intergovernmental agreement in 1974, EMBL receives annual funding contributions from its 20 member states and one associate member state (based on proportional national income) to support its five facilities in Heidelberg (Germany), Hamburg (Germany), Grenoble (France), Hinxton (UK) and Monterotondo (Italy).

This network incorporates 1400 people from 60 nations and elite alumni of more than 3700 worldwide. In addition, EMBL is co-located with its sister organisation EMBO which represents a further 1200 leading European life scientists, including 38 Nobel Laureates.

EMBL is renowned for creating the next generation of scientific leaders through an interdisciplinary approach and an emphasis on mobility, creativity and early independence. The majority of the Group Leaders at EMBL are young (mid 30s) and rotate rapidly (every six to nine years). Their time at EMBL is intense and highly collaborative. The scientists have access to some of the world's best facilities with state-of-the-art molecular biology facilities with a capital value in excess of \$100 million and growing. This includes one of the world's largest bioinformatics databases, the highest intensity x-ray synchrotron beamlines available in the world for examining biomolecular and protein structures, and a full range of transgenic mouse and phenotyping, protein expression and chemical genomics capabilities.

Through research, service and training activities, EMBL's alumni are highly connected throughout the European research community. Most of EMBL's scientists participate in large EU-funded consortia worth an average of several million euros for the life sciences, and have collaborative research projects with most of the major research centres in Europe. The EMBL model provides long-term research funding certainty for young scientists fostering a collaborative approach and creating enhanced outcomes.



- responsible for negotiating with EMBL on behalf of Australia; and
- established with nominal start-up costs.

For simplicity, the current arrangements, whereby Monash University assumes the duties of the EMBL Australia Secretariat, will continue under a Deed of Agreement between funding stakeholders. The Deed will define the role of: EMBL Australia, the governing EMBL Australia Council and the Secretariat. The Council will also appoint a Director and Scientific Advisory Committee. Consistent with the EMBL philosophy that science is paramount the Council Chair will be an eminent independent scientist familiar with the EMBL philosophy and operating principles. The Council and the Commonwealth Department of Industry, Innovation, Science and Research have the opportunity to nominate one observer each to the EMBL Council in Europe.

The next steps

- Establish the EMBL Council and operating arrangements: July 2008
- Develop the Scientific Program: Dec 2008
- Secure financial support to realise the EMBL Australia Vision: May 2009
- Establish the Partner Laboratory Network: 2009–2012

Hub and Host Site Co-contribution

Monash University, and the Victorian State Government, through the Department of Innovation, Industry and Regional Development (DIIRD) have invested considerably in the Monash University precinct to accommodate the Partner Laboratory Hub.

Through a joint venture between Monash University and the Government of Victoria, a state-of-the-art regenerative medicine research capacity building on Monash's existing strengths in biomedical research has been established. This capacity takes the form of a new institute, the Australian Regenerative

Medicine Institute, which has capital funding to support the critical infrastructure including:

- Fully fitted out laboratory space and core equipment to accommodate at least 6 partner laboratory groups,
- the accompanying core research facilities, and
- accommodation for the EMBL Australia secretariat.

The committed investment of \$153 million in the ARMI project by Monash University and the Victorian State Government demonstrates a significant commitment to the foundations of the EMBL Partner Laboratory.

The selection criteria for nodes of the Partner laboratory Group will also include an assessment of the co-contribution by host sites ensuring that the requisite accommodation, equipment and access to core facility resources is available to the partner laboratory groups.

EMBL Australia Foundation Stakeholders

Foundation Members Monash University, University of Sydney, University of Western Australia, University of Queensland, Commonwealth Scientific and Industrial Research Organisation, Victorian State Government Department of Industry, Innovation and Regional Development and Commonwealth Government Department of Innovation, Industry and Scientific Research.

For Further Details

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