

BIOMEDICAL RESEARCH HIGHLIGHTS AND OPPORTUNITIES IN AUSTRALIA AND NEW ZEALAND

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The Australian and New Zealand Cell Biology Societies and Meetings

Cell biology is a major research discipline in Australia and New Zealand and is supported by two prominent societies in the region - the Australia and New Zealand Society for Cell and Developmental Biology (ANZSCDB) <http://www.anzscdb.org/> and the Australian Society for Biochemistry and Molecular Biology (ASBMB) <http://www.asbmb.org.au/>. These societies support local state-based meetings that promote cell biology and together hold an annual national meeting under the auspices of COMBIO. At COMBIO, eminent invited international leaders in the field give plenary presentations, symposium talks and meet one-to-one with student attendees to mentor and advise them. Both societies provide travel scholarships to attend meetings and to work in collaborative laboratories, as well as early career awards to foster future leaders in the discipline.

In addition, the annual Hunter Meeting <http://hcbm.mtci.com.au/> is a prominent cell and developmental biology focused meeting, based on the Gordon Conference format, which brings together international and Australasian leaders in the discipline. Other established meetings include the Lorne meetings (<http://www.lornegenome.org/>, <http://www.lornecancer.org/>, <http://www.lorneproteins.org/>) and the Barossa Meeting in Australia, and the annual Queenstown Research Week in New Zealand (<http://www.queenstownresearchweek.org>).

AUSTRALIA

Research Funding in Australia

The majority of funding for biomedical research within Australia is obtained through competitive peer-review mechanisms managed by two major Federal funding agencies - the National Health and Medical Research Council (NHMRC) and the Australian Research Council (ARC). Successful grant recipients (i.e. lead investigators) are typically based in Australia for the duration of the award, but chief investigators can carry out work overseas. Generally, most of the award schemes brokered by these two agencies accept new grant applications only once per year; grant submission dates cluster together early in the year (February-March) for both agencies (e.g. www.nhmrc.gov.au/grants/calendar/index.htm). Each agency requires grant applications to be completed and submitted online via their respective web-based systems. New grant applications to the NHMRC must be submitted via the Research Grants Management System (RGMS); new grant applications to the ARC must be submitted via their Research Management System (RMS) web-based system.

While the primary focus of the NHMRC centers on medically relevant/health-related research at both the basic and clinical levels, the ARC supports both fundamental and applied research across all disciplines. As well as enabling support for direct research costs either as basic Project Grants (typically for individual investigators or small investigator teams and generally awarded for 3 years duration) or as Program Grants (consortium-type grants awarded to larger and generally more mature collaborative investigator teams to pursue well-established research programs), the NHMRC also offers Strategic Awards targeting priority research areas as well as Infrastructure Grants that help to support the costs of basic infrastructure and purchases of major items of equipment. Critically, the NHMRC also provides the mainstay of personnel funding/salary support for research academics in the life sciences across almost every level through a set of competitive People Support schemes that includes postgraduate Scholarships, Training (Postdoctoral) Fellowships (both basic and clinical), Career Development Awards as well as Senior Fellowship Awards.

The ARC funding covers a much wider spectrum of research topics under its National Competitive Grants Program (NCGP). However, through the ARC's commitment to foster the development of Australia's most talented researchers and support 'discovery' research leading to new ideas and/or the advancement of knowledge, over the past few years the ARC has seen a substantial increase in the number of biomedically focused research grant applications encompassing more technologically innovative and ambitious science through its Discovery Projects scheme. In parallel, the ARC's Linkage scheme centers on building Australia's research capability by expanding and enhancing research networks and collaborations, establishing national centers of research excellence and enabling international research collaborations. Notably, the ARC provides a number of senior research fellowships under the banner of its Discovery schemes.

International Partnership Funding

Over recent years, as the Australian Federal government's primary biomedical funding body, the NHMRC has formally partnered with a variety of external funding agencies, both to leverage funding across agencies and to allow foreign/private funding bodies to capitalize on the NHMRC's significant infrastructure/expertise in grant review and administration within Australia. Such examples include the establishment of formal linkages with the Juvenile Diabetes Research Foundation International (JDRF) and managing the NHMRC-European Union (EU) Collaborative Research Grants scheme that helps enable Australian researchers to participate in international projects funded under the *Seventh Framework Programme of the European community for research and technology development (FP7)*. Access to the Human Frontier Science Program (HFSP) that supports international/interdisciplinary collaborations in basic research is afforded via Australia's membership in the program through the NHMRC.

The ARC also either supports or formally partners with a variety of external entities through its Special Research Initiatives scheme, such as the European Molecular Biology Laboratory (EMBL) to facilitate increased collaboration and scientific linkages between Australian and European scientists.

In addition to the NHMRC and the ARC, the Australian Academy of Science (AAS) <http://www.science.org.au/internat/> offers a number of awards, such as Travelling Fellowships supporting Australian scientists to visit/study overseas and funding to host Research Conferences that encourage stronger international linkages in rapidly evolving research areas. In particular, the AAS has a strong history of working hard to promote increased International Activities through interactions with a variety of prestigious scientific organizations in overseas countries.

Numerous opportunities for bilateral international scientific exchange other than those already outlined are available via targeted international programs as well as private foundations and governmental organizations. One of the most well-known programs is that of the Fulbright Scholarships offered through the Australian-American Fulbright Commission. Likewise, a number of strategic programs have now been established to specifically enable increased scientific exchange and collaboration between Australia and other countries, for example India, China, Japan and France.

Centres for Cell Biology Research in Australia

The prospects for scientific study, exchange, training and/or postdoctoral research within Australia are quite strong, offer a wide range of exciting opportunities and vary only marginally among different states around the country. While there are numerous research centres, institutes and universities that can offer unique opportunities for biomedical research and training in Australia, the Group of Eight (Go8) universities afford a high level of quality assurance for prospective students and postdoctoral scientists from overseas. The Go8 universities represent an alliance among Australia's leading academic institutions which are genuinely committed to ensuring a world class research environment and internationally competitive research outcomes. Go8 members include: The University of Adelaide, The Australian National University, The University of Melbourne, Monash University, The University of New South Wales, The University of Queensland, The University of Sydney and The University of Western Australia. In addition, Australia now plays host to premier research institutes which have earned themselves strong international reputations for research excellence in cell biology. Such sites include the Institute for Molecular Bioscience (IMB) and Diamantina Institute in Queensland, the Walter and Eliza Hall Institute of Medical Research (WEHI) and Bio21 Institute in Victoria, the Garvan Institute of Medical Research and Children's Medical Research Institute (CMRI) in New South Wales, the Western Australian Institute for Medical Research (WAIMR) in

Western Australia, and the Centre for Cancer Biology in South Australia.

NEW ZEALAND

Research Funding in New Zealand

Support for biomedical research in New Zealand is obtained mainly through competitive peer-reviewed schemes administered by the Health Research Council of New Zealand (HRC) which also only accepts grant submissions once per year. The HRC is the major government-funded agency responsible for coordinating health research and the career development of health research professionals in that country. The Marsden Fund administered by the Royal Society of New Zealand provides a substantial number of grants each year awarded for research excellence, including biomedical sciences and cellular/molecular/physiological biology. In addition, New Zealand is also a member country belonging to the Human Frontier Science Program (HFSP).

Centres for Cell Biology Research in New Zealand

Specific New Zealand universities have links internationally (for example the University of Auckland is a member of the 15-country strong Universitas 21, the Association of Pacific Rim Universities and the Worldwide Universities Network). These relationships encourage international cell biology collaborations. For those interested in undertaking postgraduate studies or seeking a postdoctoral position, information may be obtained from the websites of the eight universities:

Auckland University of Technology: www.aut.ac.nz

Lincoln University: www.lincoln.ac.nz

Massey University: www.massey.ac.nz

University of Auckland: www.auckland.ac.nz

University of Canterbury: www.canterbury.ac.nz

University of Otago: www.otago.ac.nz

University of Waikato: www.waikato.ac.nz

Victoria University of Wellington: www.victoria.ac.nz

Cell and molecular research is also being carried out within the Crown Research Institutes such as AgResearch (www.agresearch.co.nz), Environmental Science and Research (www.esr.cri.nz), Industrial Research Ltd (www.irl.cri.nz), Landcare Research (www.landcareresearch.co.nz), and National Institute of Water and Atmospheric Research (www.niwa.co.nz).