



# Horizon 2020

the opportunities  
for Australian researchers



# Foreword

It is my pleasure to present Australian researchers and scientists with some key information on how to participate in **Horizon 2020**, the world's largest and most open programme for research and innovation.

Horizon 2020 programme - worth €80 billion (circa AUD \$115 billion) over the 2014 to 2020 period - is the EU's flagship scientific programme promoting scientific excellence and industrial leadership in tackling society's most pressing challenges.

**Horizon 2020** is an integral part of Europe 2020 strategy, the EU's roadmap to get the European economy back on track.

The idea that sustainable growth cannot be built in the long-term without improving research and innovation performance in Europe lays at the heart of the **Horizon 2020** programme.

**Horizon 2020** represents a significant change from the previous EU Research Framework Programmes (FP) because for the first time it brings together all of the EU's funding for research and innovation under a single programme.

With **Horizon 2020**, the EU wants to make it easier to participate in EU-funded research and innovation actions and increase international scientific cooperation.

The EU wants to maximise the economic impact of research and innovation while improving results and better value for money – this is particularly important today when every euro counts.

**Horizon 2020** aims to strike the right balance between supporting excellent science, boosting the competitiveness of industries and tackling societal challenges.

**Horizon 2020** is also about a simpler process. Procedures to take part in a programme have been made easier so that scientists and innovators can focus on research and business and spend less time filling out administrative forms.

**Horizon 2020** has a simpler structure with simpler rules compared to previous research framework programmes. It's estimated the average "time to grant" will be reduced by 100 days so that successful applicants can get to work sooner.

One of the most important new developments is that **Horizon 2020** will integrate research and innovation by providing coherent funding at every step from idea to market, so that businesses can turn their technological breakthroughs into viable products with real commercial potential.

This means more funding under **Horizon 2020** for testing, prototyping, demonstration and pilot type activities; for business-driven R&D; and promoting entrepreneurship and risk taking.

And, while tackling societal challenges is an important policy goal in itself, there is at the same time a strong focus on creating business opportunities emerging from the solutions to the problems that concern citizens in Europe and beyond.

**Horizon 2020** confirms the European Union's commitment to remain a world class player also in research and innovation.

Australia has a longstanding cooperation with the EU on research and innovation, since the signing of the Scientific and Technological Agreement in 1994.

Thanks to this, in the past two decades Australia ranked in the top 10 non-EU partners on research and innovation.

I hope the EU Australia cooperation will grow further under the **Horizon 2020** programme.

I trust you will find this publication of interest.

Thank you.



Sem Fabrizi  
EU Ambassador to Australia

# Australia – EU Research and Innovation Collaboration

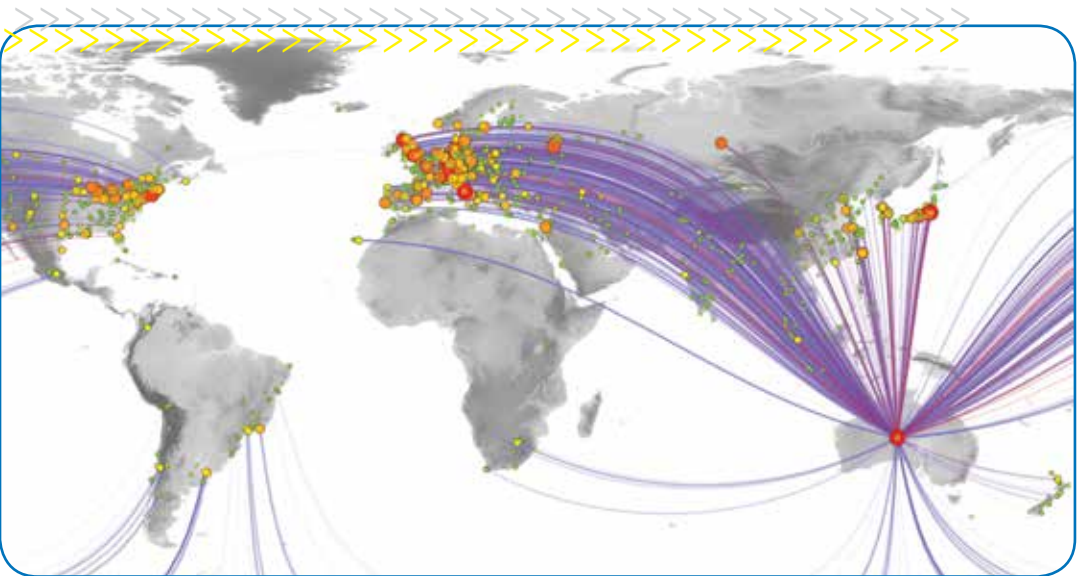
The long-standing relations between Australia and the EU continue to thrive and expand. They are underpinned by a joint Science and Technology Agreement dating back to 1994, the first such agreement to be signed by the EU.

Over the past 20 years, Australian participation in previous EU Framework Programmes (FP) has grown strongly: from the 24 collaborative research projects with Australian partners during FP4 (1994–98) to 169 signed projects with 194 Australian participants under FP7 (2007–13).

The total investment in the projects involving at least one Australian partner in FP7 was more than €1.4 billion (\$A2.1 billion) with over €0.9 billion (\$A1.3 billion) invested by the European Commission and €67 million (\$A98 million) coming from Australian sources.

Australia ranks 9th among the non-EU countries participating in FP7 collaborative projects. Australian research organisations have a higher rate of success in their applications – nearly 28% compared to 23% for all non-EU countries.

In addition, the European Research Council (ERC) has provided grants to 23 Australian principal investigators (7.5% from non-EU countries) who have benefited from €35 million in funding. The various Marie Curie mobility actions under FP7 involved 190 Australian fellows going to Europe and 86 Europeans going to Australia, with €172 million in EU support. The International Research Staff Exchange Scheme (IRSES) had 71 projects involving Australia, resulting in more than 500 staff from Europe spending time in Australia and more than 250 Australians going to Europe.



# Why collaborate internationally?

In an era when the world is increasingly interconnected, scientific breakthroughs and innovative applications rarely occur in isolation and so it is natural for both Australian and European researchers to collaborate. There are many motivations why Australians want to be involved in international research and innovation collaboration, some of these include:

**National considerations:** Many of the EU's social challenges match Australia's own priorities and many need to be tackled at the global level requiring cooperation with other countries to effectively address them. There is also a need for Australia to access knowledge and know-how that it does not create.

**Institutional considerations:** Desire to take a strategic approach to gain access to more excellence and facilities; to take

advantage of higher citation rates of jointly authored international papers; and to exploit huge funding leverage opportunities.

**Laboratory considerations:** Use international research projects to improve the research quality of the team and provide greater recognition within the global scientific community. International collaboration can also pave the way for the commercialisation of technologies and create new business opportunities.

**Personal considerations:** International projects progress scientific careers while also developing global networks. They are a chance to gain valuable experience in ambitious cutting-edge scientific projects. And, not insignificantly, international collaboration is fun.





## Why collaborate with the European Union?

The European Union is a world leader in research and innovation.

It is responsible for:

- **20%** of global expenditure on research;
- **32%** of high impact publications; and
- **27%** of patent applications.

It is the world's largest trading bloc with over 500 million citizens. The EU has:

- Some of the best universities in the world: 25 universities in EU Member States are among the top 100 universities worldwide;

- Some of the most innovative companies in the world: one quarter of companies featuring among the world's top 2000 R&D investors are European, including number one on the list with close to €10 billion investment in R&D; and
- Europe offers exceptional opportunities to researchers all over the world to collaborate with European research teams through the Horizon 2020 programme and provides access to European excellence and innovation.

The EU is looking to double cooperation with international partner countries under **Horizon 2020** and Australia has the opportunity to be a significant partner in this objective.



# what is Horizon 2020?

**Horizon 2020** is the EU's €80bn (\$115bn) research and innovation programme which runs from 2014–2020. It is the world's largest and most open financial programme for research and innovation. Horizon 2020 provides abundant opportunities for new bilateral research and innovation cooperation for the benefit of society.

**Horizon 2020** is providing more support for innovation and close-to-market activities. It focuses strongly on creating business opportunities and innovative products that can be commercialised. It is coupling research to innovation – from research to retail and all forms of innovation.

**Horizon 2020** is integral to the EU's broader policy framework to build a resilient and forward-looking economy. The program is investing in growth and job creation in Europe as well as international partner countries.

**Horizon 2020** is directly addressing concerns about livelihoods, safety and environment. It has a focus on global societal challenges such as health, clean energy and transport.

**Horizon 2020** has a stronger challenge-based approach which gives applicants considerable freedom to come up with innovative solutions while maximising synergies among different disciplines.

**Horizon 2020** topics are framed in a more general way and are less prescriptive with more emphasis on expected impact.

# Overview of Horizon 2020

The **Horizon 2020** programme is organised around three pillars: scientific excellence, industrial leadership and tackling societal challenges:

## Excellent Science

(€24.4bn)

European Research Council (ERC)

Future and Emerging Technologies

Marie Skłodowska-Curie Actions (MSCA)

Research infrastructures

## Industrial leadership

(€17.0bn)

Leadership in enabling and industrial technologies (LEITs)

Access to risk finance

Innovation in SMEs

## Societal challenges

(€29,7bn)

- 1) Health, demographic change and wellbeing
- 2) Food security, sustainable agriculture and forestry, marine and inland water research, and the bioeconomy
- 3) Secure, clean and efficient energy
- 4) Smart, green and integrated transport
- 5) Climate action, environment, resource efficiency and raw materials
- 6) Inclusive, innovative and reflective societies
- 7) Secure societies

## First Pillar Excellent Science:

**Horizon 2020** funds the best research in Europe, promotes career advancement and mobility for scientists. It supports world-class research infrastructures ranging from particle accelerators and networked databases to telescopes and biobanks.

The European Research Council (ERC) provides attractive and flexible funding to top researchers and their teams to pursue the highest quality “frontier” or basic research in Europe.

Future and Emerging Technologies (FETs) flagships support large-scale multidisciplinary research initiatives oriented toward a visionary goal that would have a transformational impact on science, technology and society.

Marie Skłodowska-Curie Actions support training and cross-border and cross-sector mobility for researchers.

Investment in unsurpassed research infrastructures will ensure they keep pace with R&D needs of 2020 and beyond.



## Second Pillar Industrial Leadership:

To accelerate the development of technologies and innovations that will become the foundation of tomorrow’s businesses and help Europe’s small and medium-sized companies grow into world-class entities.

**Horizon 2020** funds research, development and demonstration, and where appropriate, standardization and certification for key enabling technologies (KETs) such as information and communications technology (ICT), nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing, and space.

Easier access to financing is available for R&D-driven companies and projects at all stages of development.

In addition, innovative small and medium-sized businesses with the potential to expand and go global also stand to benefit from targeted support.





# Third Pillar

## Societal Challenges:

These reflect the policy priorities of the Europe 2020 strategy and address major global concerns.

**Horizon 2020** uses a 'challenge-based' approach to ask participants to propose the best way to solve specific global problems. This also brings together resources and knowledge across different fields, technologies and disciplines including social sciences and the humanities.

Funding will be focussed on the following challenges:

- 1)** Health, demographic change and wellbeing
- 2)** Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bioeconomy
- 3)** Secure, clean and efficient energy
- 4)** Smart, green and integrated transport
- 5)** Climate action, environment, resource efficiency and raw materials
- 6)** Inclusive, innovative and reflective societies
- 7)** Secure societies

### COST


**Horizon 2020** also supports European Cooperation in Science and Technology (COST) actions which is one of the longest-running European frameworks supporting cooperation among scientists and researchers across Europe under the societal challenge 'Inclusive, innovative and reflective societies'.



# the opportunities for Australian researchers

**Horizon 2020** is the world's largest and most open, publicly funded research programme. Competitive calls for proposals are open to everyone, including Australian organisations or individuals.

There are four main ways an Australian can participate in **Horizon 2020**:

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- 1 as a partner in a collaborative project;
  - 2 as a participant in a Marie Skłodowska-Curie Action (MSCA);
  - 3 as a European Research Council grantee;
- and
- 4 by becoming a registered expert.

**Horizon 2020** is implemented through open and competitive Calls for Proposals, which are normally open for two years at a time. While most have a one-step evaluation process, some areas have a two-step evaluation process.

[http://ec.europa.eu/programmes/Horizon 2020 /find-your-area](http://ec.europa.eu/programmes/Horizon%2020/find-your-area)

# 1

## Collaborative projects

There are great opportunities for Australian researchers and companies to participate in leading edge and major collaborative projects (notably research and innovation actions and coordination and support actions) in the 'Societal Challenges' and 'Industrial Leadership' pillars of **Horizon 2020**.

Normally, on the basis of a meeting of equals, Australian researchers are NOT eligible for EU funding in collaborative projects (this is a general rule for all high-income countries and key emerging economies).

There are exceptions when the participation of the Australian partner is deemed essential for carrying out the action, because they provide:

- outstanding competence/expertise;
- access to research infrastructure;
- access to particular geographical environments; or
- access to data.



# example

## of a collaborative project

Australian Centre for Plant Functional Genomics



*“We have developed friendships that will last us a lifetime.”*

**Prof Peter Langridge,**  
Emeritus Professor, University of Adelaide

**Project:** Drought tolerant yielding plants (DROPS) develops novel methods and strategies for genetic yield improvement under dry environments and for enhanced plant water-use efficiency.

**Partners:** The consortium involves 15 public and private partners from Europe, the United States and Australia (Australian Centre for Plant Functional Genomics and the University of Queensland) under the coordination of INRA-Montpellier.

**Budget:** €5.9 million over 5 years from 1 July 2010.

**Motivation:** This was the second EU program we joined after our very positive experience as a partner in TriticeaeGenome FP5 project. The DROPS collaboration had given us an opportunity to be part of a highly-innovative programme that provided access to resources and capabilities that would support our research for many years to come.

**Impact:** We have since become a partner in the EURoot program which started in 2012 due to our positive experience in DROPS,

**Best parts:** I have really enjoyed the heavy science discussions where ideas have flowed and new projects and concepts develop.

**Worst parts:** Even though we were shielded from most of the administrative paperwork, it always seemed to arrive at the most inconvenient time and required information that was sometimes hard to gather.



# Collaborative projects

## - some practical considerations

There are undoubtedly great rewards from engaging with the European Union but these large projects can involve significant investment in time and resources. So there are greater rewards when participation is part of an on-going strategic engagement with the EU, rather than an ad hoc collaboration.

Collaborative projects are carried out by a consortium of research institutions and companies. These consortiums must have at least three different organisations from three EU Member States or Associated States. In practice most projects are much larger and it is normal for 10 and 20 partners to take part in the research. Each partner in the consortium needs to bring their own 'added value' to the project, such as different competences, facilities, networks or experience. A good consortium should be balanced and diverse in terms of country, sector, gender and experience.

One partner is the coordinator or project manager. It is of advantage to Australian participants if the coordinator has significant experience with EU projects and has strong skills in leading a diverse team of researchers as well as good administrative support. Australian researchers are not advised to take on coordinator roles because they do not receive EU funding, but they could be the scientific leader of a work package.

As a partner in a collaborative project, the Australian researcher or their institution

must sign the Grant Agreement which entails certain rights and obligations. There is also a "third party" option, where you do not sign the Grant Agreement, but have a private agreement with one or more of the full participants.

Collaborative projects are structured into work packages to help manage them via deliverables and milestones. There are many technical requirements needed to put together a proposal because of the size of the projects and to ensure accountability and value for money. However, the European partners, especially the coordinator, should do most of the work.

Australian participants will need to know how much their involvement will cost (regardless of whether they receive EU funding or not) and, importantly, produce their own robust funding plan for their involvement – otherwise the proposal could be jeopardised.

Australian participants also need to be clear on intellectual property rights (IPR) issues. IPR arrangements are agreed by all the partners before the project is signed. Normally "background" IP – the knowledge and information held by the participants before a Grant Agreement is struck – can be used by project participants with no charge and any IP created by the project is shared between the partners.

# example

## of a collaborative project

Edith Cowan University (ECU) Security Research Institute



*“Building a secure future through collaboration, understanding and mutual endeavour on common issues affecting us all.”*

Prof Craig Valli, Director, ECU Security Research Institute

**Projects:** ECU computer and security science researchers have participated in three FP7 grants since 2011. The first, SMART (Scalable Measures for Automated Recognition Technologies), addressed the use of smart surveillance technologies, then RESPECT and AU2EU.

Partners: SMART - 21; RESPECT - 21; AU2EU – 13 (including UNSW, RMIT, Macquarie University and CSIRO)

**Budget:** SMART - €4.2 million; RESPECT - €4.2 million; AU2EU - €8.4 million

**Motivation:** Collaborating with teams of the scale and specialisation found in an FP7 grant has given us the opportunity for greater interactions at all levels, from students to professors, than is possible in smaller scale projects.

**Impact:** Beginning with SMART we are now a partner in two further EU program grants.

**Best parts:** Our participation has provided the opportunity for our researchers and students to engage

and share expertise with international experts across highly collaborative multi-disciplinary teams and has facilitated unique and valuable knowledge transfers both informally and formally. Also beneficial was recognition of our unique expertise with EU funding of our research costs in SMART and RESPECT – a significant achievement.

**Worst parts:** Our experiences have also highlighted a number of current impediments to active FP7 participation. Different time zones can be obstructive when collaborating with European partners and an Australian partner will travel considerable distances during the project's life. Most importantly, we found the lack of Australian funding support for Australian FP7 participants to be a deterrent to participation.

The benefits of international collaboration however strongly outweigh any difficulties we have encountered and we look forward to participating in further projects with EU partners.



# how to

## participate in Horizon 2020



### 1 Use the Horizon 2020 Participants Portal

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

### 2 Identify a relevant Call for Proposals

<http://ec.europa.eu/programmes/horizon2020/find-your-area>

### 3 Find project partners (where necessary)

- Use your existing European partners (they may not have thought of you).
- Participate in (official) **Horizon 2020** brokerage events, information days, etc
- Use online partner services such as CORDIS (<https://cordis.europa.eu/partners/web/guest/home>)
- Use the Australian national contact points (found in the Participant's Portal)

### 4 Register your organisation (where necessary)

In the Participant's Portal.

### 5 Develop the proposal

Let your European colleagues lead the work – they have teams of experienced staff.

### 6 Submit a proposal

In the Participant's Portal. Wait for the result of the evaluation by external independent experts

### 7 If selected, sign the Grant Agreement

In the Participant's Portal.

# example

## of a collaborative project

Commonwealth Scientific and Industrial Research Organisation (CSIRO)



*“The incredible synergies of such international partnerships provides the best means of tackling climate change.”*

**Wes Stein, Solar Research Leader, CSIRO Energy Flagship**

**Project:** STAGE-STE (Guaranteeing the European Excellence in Concentrating Solar Thermal Energy) brings together the world’s key solar research institutes to synchronise and synergise technology development efforts toward low cost dispatchable solar electricity and solar fuels.

**Partners:** The project is led by CIEMAT (Spain). The consortium involves 42 individual organisations, including 30 European research institutes / universities, three European companies and nine international research institutes.

**Budget:** €21.2 million over 4 years from 1 February 2014.

**Motivation:** To be honest, a collaboration of this scale could not be ignored and the invitation to participate was easy to accept. The EU is providing great leadership in renewable technologies and in particular fostering the innovation landscape needed for

concentrating solar technology where many diverse scientific and engineering disciplines need to be integrated and optimised.

**Impact:** We are developing a positive presence in the EU through the joining of research with research infrastructure. STAGE-STE and our prior work in FP6 – INNOHYP has been supplemented by our successful delivery of a heliostat field to the Cyprus Institute and a corresponding MoU.

**Best parts:** The building of a common, robust idea from the complementarity of diverse minds and experiences.

**Worst parts:** Despite the many wonders of contemporary communications, nothing beats person to person discussions for technologies such as this. Being on the other side of the world is still an unavoidable hindrance and can lead to a feeling of superfluousness in a collaboration of this scale.





## Marie Skłodowska-Curie Actions (MSCA)

### **Individual fellowships**

Through MSCA [Horizon 2020](#) supports experienced researchers (who must have a doctoral degree, with at least 4 years of full time research experience included in their doctorate) undertake mobility within and beyond Europe, as well as attracting the best foreign researchers to the EU. Mobility is the key eligibility factor, training-through-research another important aspect, with the possibility for secondments to other organisations in Europe.

### **Some practical considerations**

The applicant is free to choose the research field they are most interested in. The application is made jointly by the researcher and the host organisation in the academic or non-academic sectors in an EU Member State or Associated Country. It is the host organisation that signs the grant agreement and who is the beneficiary of the grant. The host organisation then recruits researchers.

The grant usually covers salary as well as a mobility allowance, research costs and overheads for the host institution.

Two types of Individual Fellowships are supported:

[European Fellowships](#) (Australians can apply)

These are hosted in an EU Member State or Associated Country and are open to researchers either coming to Europe or moving within Europe with funding for one to two years.

The potential Australian Fellow needs to find a host organisation in an EU Member State or Associated Country.

[Global Fellowships](#) (where long-term residents in Europe visit an Australian institution)

These fund secondments outside Europe for researchers based in the EU or Associated Countries and provide funding for two to three years, with a mandatory one-year return period.

The Australian (partner) institution receiving the fellow does not sign the Grant Agreement. But the Australian partner has to supply an up-to-date letter of commitment to demonstrate their real and active participation in the proposed action as well as a half page form on the organisation's capacity. As such, partner organisations cannot directly claim any costs but should negotiate with the host organisation to receive part of the overhead allowance.

# example

## of a Marie Curie Fellow

Ghent University Visiting Fellow



*“An international outgoing MC fellowship is the ideal way to take your research and yourself to the next level.”*

**Dr Barbara Vanhoecke**  
Visiting Research Fellow at ANU and University SA

**Project:** Mucositis platform - Development of a multidisciplinary platform for the screening of new preventive and therapeutic strategies against oral mucositis (2013-2016).

Host institutions: Coordinated by Ghent University, hosted by University of Adelaide.

**Budget:** €278,913 fully funded by the EU.

**Motivation:** I wanted to apply for an International Outgoing Fellowship because this action supports me as a promising individual researcher from Europe to receive training in one of the top mucositis laboratories in the world (Mucositis Research Group, University of Adelaide).

**Impact:** I generated novel in-vitro models of oral mucositis that will help us to better understand the pathobiology of the disease. I also identified microbial shifts in the oral microbiome of patients with head and neck cancer treated with radiotherapy. This will enhance the development of new treatment strategies for oral mucositis.

**Best parts:** I loved working in an international environment as well as sharing my research with and receive training from the best in my field. It encouraged me to break with old routines and to restart with fresh energy.

**Worst parts:** The reporting requirements are time consuming and the system is not very straightforward.

## Research and Innovation Staff Exchanges (RISE)

This supports short-term mobility of research and innovation staff at all career levels, from the most junior (post-graduate) to the most senior (management), including administrative and technical staff.

Support is provided for the development of partnerships in the form of joint research and innovation activities between the participants. This is aimed at knowledge sharing via international as well as intersectoral mobility, based on secondments of research and innovation staff (exchanges) with an in-built return mechanism.

### **Some practical considerations**

RISE projects are carried out by consortium of research institutions and companies and must be established in at least three different countries of which two must be EU Member States and/or

Associated Countries. If all participants are from the same sector (either only academic or non-academic), at least one participant must be from a third country.

Australia can participate as a partner organisation. The exchanges of Australian-employed researchers are normally not funded. There can be exceptional funding where their participation is deemed essential for carrying out the action.

Secondments may be split into several stays not exceeding 12 months in total and not going beyond the project duration. The splits must be justified and considered beneficial for the transfer of knowledge activities. The exchanged staff members should be guaranteed full reintegration into the sending institution thus maximising the impact of the action for knowledge sharing and long-term collaboration.



# example

## of an IRSES project (similar to the RISE programme)

The University of Melbourne



*“mSAFE has been a real inspiration.”*

**Professor Stephan Winter,**  
Department of Infrastructure Engineering

**Project:** mSAFE: mobile Smart Applications For Evacuation

mSAFE is a collaboration tackling the largely unexplored potential of mobile evacuation guidance. Core topics are the design of visuo-spatial information to be consumed under stress, the design of spatial information to be produced from uncertain data or in conflicting environments, and enabling a robust spatial dialog between users and devices in evacuation contexts.

**Partners:** University of Bremen (DE), The University of Melbourne (AU), La Trobe University (AU), and the University of Zurich (CH).

**Budget:** €65,100

**Motivation:** The project builds on strong personal and discipline ties between the involved institutions, collecting leading expertise in spatial cognitive science and engineering. The European funding of this project helps the European partners to visit the Australian partners.

**Impact:** Together with visiting researchers from Bremen and Zurich we have set up a demonstrator of a mobile evacuation system in our department which provides real-time evacuation information with awareness of the

location of the ‘event’ (say, a fire). A number of publications with the partners have come out and the ideas drive ongoing PhD research in Melbourne.

**Best parts:** The face-to-face interaction with partner groups in Europe and the build-up of a collaboration record.

**Worst parts:** The Australian partners have to bring their own funding to participate.



# Innovative Training Networks (ITN)

Support competitively selected joint research training and/or doctoral programmes.

## **Some practical considerations**

Three types of ITNs: European Training Networks (ETN); European Industrial Doctorates (EID); and European Joint Doctorates (EJD).

ITN projects are carried out by partnerships of universities, research institutions, and non-academic organisations. These projects must have at least three different organisations from three EU Member States or Associated States for ETN and EJD. The EID programme must have at least two different organisations from two EU Member States.

Australian academic and non-academic organisations can be a 'Partner Organisation' and as such cannot directly claim any costs of the project and are not signatories to the grant agreement.

Individual Australians are eligible to take part in a successful ITN project as long as they meet the criteria of undertaking transnational mobility and receive funding for their participation in the doctorate programme.

Further Information: <http://ec.europa.eu/programmes/horizon2020/en/h2020-section/marie-sklodowska-curie-actions>



# example

## of an International Doctorate

IDEALAB, Macquarie University

“This partnership encompasses the four key objectives and goals that will ensure Macquarie continues to deliver world-leading research with world changing impact as we engage as a world-recognised research collaborator of choice and prepare world ready higher degree research candidates.”



**Project:** The Experimental Approaches to Language and Brain (IDEALAB) program aims to enhance quality in higher education through scholarships and academic cooperation between Europe and the rest of the world and offers unique laboratory-based 3-year doctoral training. It equips graduates with broad based skills and knowledge and a global research outlook to embark on a successful career in neuroscience research.

**Partners:** Macquarie University partners with four European Universities (University of Potsdam, Germany; University of Groningen, Netherlands; University of Trento, Italy; and Newcastle University, UK).

Budget: over \$A6.5 million over 5 years from 2012 to 2017.

**Motivation:** Macquarie University is proud to be the first successful full partner Australian University of the EU's Erasmus Mundus Joint Doctorate Program to provide an exceptional research opportunity for PhD students to study at two or more of the partners over the three year doctoral program.

Dr Ren Yi,  
Director of the Higher Degree  
Research Office, Macquarie University

**Impact:** Upon successful completion each candidate will receive a joint degree awarded by all five universities.

**Best parts:** The opportunity to participate in this programme allowed Macquarie University to develop research collaboration across broader disciplines and in different countries. It has also allowed us to develop long term research collaborations with the partner universities.

**Worst parts:** The Logistics coupled with differing Institutional Rules and Regulations across international borders was challenging. But the outcome was an enviable accomplishment.



The first two IDEALAB PhD candidates graduate - Rimke Groenewold and Laura Bos. Background Professor Lyndsey Nickels (Director of IDEALAB at Macquarie University)

Photo by Rimke Groenewold



**European Research Council**  
Established by the European Commission

## European Research Council (ERC)

There are three main types of grant available:

<p><b>Starting Grants</b> (2-7 years after PhD) up to €2.0mn<sup>1</sup> for 5 years</p> <p><b>1</b></p>	<p><b>Consolidator Grants</b> (7-12 years after PhD) up to €2.75mn<sup>1</sup> for 5 years</p> <p><b>2</b></p>	<p><b>Advanced Grants</b> significant research achievements in the last 10 years up to €3.5mn<sup>1</sup> for 5 years</p> <p><b>3</b></p>
<p><b>Proof of Concept</b> bridging gap between research - earliest stage of marketable innovation up to €150,000 for ERC grant holders</p>		

### Benefits of an ERC grant:

Offers independence, recognition, visibility and flexibility:

- Work on a research topic of own choice, with a team of own choice;
- Gain true financial autonomy for 5 years;
- Grantee can move within Europe with the grant;

- Attract additional funding and gain recognition – ERC is a quality label; and
- Grantee can keep affiliation with home institute outside Europe ('significant part' of work time in Europe, at least 50%).

### Some practical considerations

First determine which ERC grant and which call is relevant for you, then

<sup>1</sup> Additional 'start-up' funding for scientists moving to Europe (€500,000 for Starting and €1mn for Advanced grantees).



European Research Council  
Established by the European Commission

identify in which host institution in an EU Member State or Associated Country you would like to undertake your research project and then contact them to seek their support and agreement to host you (see: <http://erc.europa.eu/find-host-institution>).

As you will be submitting the proposal, ensure you carefully read the guidance documents for applicants. Gather all the concrete details needed for completing the application forms from your future host institution and start writing your proposal early enough to submit it for external opinions. Make yourself familiar with the Participant Portal Submission Service and do not wait until the last minute as Call deadlines are strictly enforced.

The time spent on the ERC project is at least 50% over the life grant, plus 50% of time on the project for starter grants, 40% of time on the project for consolidators grant and 30% time on the project for advanced grants.

ERC grants support projects carried out by an individual researcher ('Principal Investigator') and his or her team. The constitution of the research teams is flexible and team members can be of any nationality, European or non-European, depending on the nature of a project. Vacancies for team members of an ERC project can be published by the Principal Investigator on the Euraxess-Jobs portal (see: <http://ec.europa.eu/euraxess/index.cfm/jobs/index>).

Further Information: <http://erc.europa.eu/>





# example

## of a Research Grant

The University of Sheffield



*“I consider my ERC grant to be an absolute highlight of my career so far. It has opened doors and enabled me to recruit excellent staff and students as I have started to build my research group in the UK, and gives me the confidence and opportunity to pursue ambitious and ground-breaking lines of research on a 5-year timeline, which would not be possible through any other funding scheme.”*

**Professor John L. Provis, The University of Sheffield**

**Project:** GeopolyConc - Durability of geopolymers as 21st century concretes.

Host institution: The University of Sheffield.

**Budget:** €1.5 million ERC Starting Grant fully funded by the EU for 5 years (2013-2018).

**Motivation:** I applied for this grant because the ERC scheme is the most prestigious and high-profile funding scheme available in Europe, with a core focus on research excellence and a generous budget available to support each project.

**Impact:** When I was a Research Fellow working in Australia, I was seeking an international direction to my career, and

had identified the ERC scheme as one of the best opportunities for excellence-focused funding that was available anywhere in the world.

**Best parts:** The most outstanding characteristics of the ERC program are the pure focus on excellence, and the generous funding levels of the grants awarded which has enabled me to propose a very ambitious and broad-reaching research program.

**Worst parts:** The sheer size of a project such as this does lead to the need for very careful financial and management control, to ensure that the money is being spent according to the agreed budget and timeline.

# 4

## Become a registered expert

The EU is always in need of independent experts as peer reviewers to assist in the evaluation of proposals and the monitoring of actions. Australians are able to register as experts and be selected for these roles.

To be selected as an expert you must have a high level of expertise in the relevant fields. This does not mean that you need to be a tenured professor, with many post-doctoral and retired researchers being evaluators.

Benefits of being an evaluator include: being able to see cutting edge proposals in your own field, network with other leading researchers and gain an 'insider's' understanding of the process of participating in **Horizon 2020**.

What is involved: for evaluation of proposals about two working weeks of your time (some remote, some in Brussels) with your costs fully covered (€450 per day plus all travel and subsistence costs).

How to register: online registration (simply complete your profile) <http://ec.europa.eu/research/participants/portal/desktop/en/experts/index.html>





# sources of Further information

## **Horizon 2020 online manual**

[http://ec.europa.eu/research/participants/docs/h2020-funding-guide/index\\_en.htm](http://ec.europa.eu/research/participants/docs/h2020-funding-guide/index_en.htm)

## **Specific programme**

[http://ec.europa.eu/research/participants/data/ref/h2020/legal\\_basis/sp/h2020-sp\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/legal_basis/sp/h2020-sp_en.pdf)

## **Rules for participation**

[http://ec.europa.eu/research/participants/data/ref/h2020/legal\\_basis/rules\\_participation/h2020-rules-participation\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/legal_basis/rules_participation/h2020-rules-participation_en.pdf)

## **Work programme for your areas of interest**

<http://ec.europa.eu/programmes/horizon2020/en/h2020-sections>

## **Calls for proposals for your areas of interest**

<http://ec.europa.eu/programmes/horizon2020/find-your-area>

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## **General information:**

<http://ec.europa.eu/programmes/horizon2020/>

## **CORDIS (Community Research and Development Information Service):**

<http://cordis.europa.eu/>

## **EIT (European Institute of Innovation and Technology):**

<http://eit.europa.eu/>

## **Euratom:**

<http://www.euratom.org/>

## **Destination Europe:**

<http://ec.europa.eu/research/iscp/index.cfm?lg=en&pg=destinationEurope>

## **EURAXESS European Researchers Mobility Portal:**

<http://ec.europa.eu/euraxess>

## **CAESIE (Connecting Australian-European Science and Innovation Excellence):**

<http://www.caesie.org>



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