

# IRISH RESEARCH COUNCIL LAUREATE AWARDS PROGRAMME 2018/19

# **GUIDE FOR APPLICANTS**

# Please Read This Document <u>Carefully</u> Before You Register as an Applicant

Call opening	Monday, 14 <sup>th</sup> May 2018	
FAQs open	Monday, 14 <sup>th</sup> May 2018	
Expression of Interest (EoI) deadline  Wednesday, 4pm (Irish time) 20th June 2018		
FAQ final deadline	Thursday, 5 <sup>th</sup> July 2018	
DEADLINE FOR APPLICATIONS	Thursday, 4pm (Irish time)	
DEADLINE FOR AFFLICATIONS	12 <sup>th</sup> July 2018	
Outcome of Phase 1 Assessment	December 2018	
Outcome of Phase 2 Assessment	March 2019	
Outcome of selection process	March 2019	
Award commencement date	By Monday, 9th September 2019	

Due to heavy server traffic on the closing day of the competition, applicants are strongly advised to submit applications well in advance of the deadline.

# **Table of Contents**

1. Pu	rpose of the Guide for Applicants	3
2. Eli	gibility Check	3
3. Th	inking about applying	3
3.1.	Contact your Research Office (RO)	3
3.2.	Frequently Asked Questions (FAQs)	3
3.3	Applications will be accepted in either Irish or English language only	4
3.4	Application deadline	4
4. Us	sing the online application system	4
5. Re	gistering as an applicant	5
6. Cr	eating an application	5
7. Ed	liting an application	7
8. Cc	ompleting the application	8
8.1	Project Overview	8
8.2	Research funding and commitments	11
8.3	Project Details	11
8.4	Ethical statement and sex/gender dimension	14
8.5	Indicative Budget	15
8.6	Uploads	16
8.7	Applicant Declaration	17
8.8	Submitting the Application	17
9. Ev	aluation and selection of proposals	18
9.1	Eligibility Check	18
9.2	Peer review evaluation of proposals	18
9.3	Outcome of evaluation and feedback	19
9.4	Appeals	19
10. Inf	ormation for successful applicants	20
Annex	A: Arts, Humanities & Social Sciences Disciplines	21
Annex	B Science Technology Engineering & Mathematics Disciplines	24
Phys	sical Sciences and Engineering	24
Life	Sciences	30

# 1. Purpose of the Guide for Applicants

- This guide provides practical information to potential applicants in creating and submitting an application for the Irish Research Council Laureate Awards programme.
- The Irish Research Council Laureate Awards programme is governed by the Terms and Conditions, the Guide for Applicants and the Award Acceptance Form. The contents of this guide are for general information purposes and the assistance of applicants. In the event of a discrepancy arising between this guide and the <u>2018/19 Terms and Conditions</u>, the latter will prevail.
- Applicants are accordingly strongly recommended to familiarise themselves FULLY with the 2018/19 Terms and Conditions for the programme to which they are applying, and also to read carefully any Frequently Asked Questions (FAQ) before completing and submitting applications.
- The Council reserves the right to revise this guide for applicants.

## 2. Eligibility Check

 Before starting an application, all applicants should check their eligibility to apply to the programme by carefully studying the relevant Terms & Conditions.

# 3. Thinking about applying

#### 3.1. Contact your Research Office (RO)

- In the first instance, you should contact the Head of School and Research Office (i.e. the
  office of the Vice-President/Dean of Research/Head of Development, as applicable) in your
  proposed host institution for information and clarification on the call.
- The Head of School (or alternative) of your (proposed) institution and the Vice-President/Dean of Research/Head of Development will have to provide letters of support for your application, so it is highly recommended that applicants contact them before preparing an application.

#### 3.2. Frequently Asked Questions (FAQs)

- If you have any questions regarding the application process, please address them to your RO. If your RO is unable to answer your query, they should send the query to the Council for answer through the Frequently Asked Questions process.
- Please note that, for reasons of transparency and fairness for all applicants, the Council will not enter into individual written or telephone correspondence with any individual applicant. In particular, the Council will not be in a position to review any eligibility issues. In the first instance, you should contact the research office, i.e. the office of the Vice-President/Dean of Research, as applicable in your proposed higher education institution for information and clarification on the call. It is highly recommended that applicants contact the office well in advance of submitting an application.
- Please be advised that, should an applicant contact the IRC by telephone, they will be advised in the first instance to contact their RO.
- If your research office is unable to answer your query, they should email it to <a href="mailto:laureate@research.ie">laureate@research.ie</a> for answer through the frequently asked questions (FAQ) process.
   An updated FAQ document will be published weekly on the Council website. The FAQ process will close on 5th July 2018.

#### 3.3 Applications will be accepted in either the Irish or the English Language only

- Applications will be accepted in either the Irish or the English language only. In order to facilitate evaluation by the Panel Members and remote peer reviewers in English, applications submitted in Irish must be provided with a translation of the documents in English.
- Copies of official documents, e.g. PhD degree certificate, can be submitted in any of the EU languages. Official document(s) in any other language must be provided together with a certified translation in English.

#### 3.4 Application deadline

- The Council strongly encourages the submission of applications well in advance of the closing date for the competition, as on the day that the call closes there will be heavy traffic on the server, which may slow down the submission of your application.
- To prevent problems with heavy server traffic, do not wait until the final day of the call to submit your application. If you need to upload your application on the closing day, please allow at <u>least 6 hours</u> before the deadline of **4pm Thursday 12**<sup>th</sup> **July 2018** to allow the upload to complete.
- All applications will be assessed solely on the basis of the material available to the Irish Research Council ('Council') at the time of the application deadline.

Please note that the Irish Research Council will not follow up any supporting documentation related to the application, for example, CV, track record, etc. It is the sole responsibility of the applicant to upload all supporting documentation prior to submission. If the documentation is not submitted by stated deadlines, the application will be deemed ineligible and will not proceed to the evaluation stage.

# 4. Using the online application system

- The online system can only be guaranteed to be fully operational using the following browsers:
  - > Internet Explorer: two most recent versions
  - > Firefox: two most recent versions
  - > Google Chrome: two most recent versions
  - > Safari: two most recent versions<sup>1</sup>
- If you have a technical issue regarding use of the online system, please read these guidelines
  and the FAQ document available on our website. If your issue is not addressed through either
  of these mechanisms, only then should you email <a href="mailto:laureate@research.ie">laureate@research.ie</a> with an outline of
  your technical issue. For any technical query, please include your project ID, the browser you
  are using, and, if appropriate, a screenshot of any error messages.
- Applicants should not log into their profile or application form in different browsers at the same time. This may cause the system to invalidate your login session and any information you have entered will be lost.
- If you enter information and do not click the 'save draft' button before navigating away from the page, this information will be lost.

<sup>&</sup>lt;sup>1</sup> \*Firefox, Google Chrome and Safari support applies to the two most recent versions published by the manufacturer excluding beta releases. Also, please ensure your JavaScript is both turned on and up to date.

No alterations can be made to an application once it has been submitted. It is therefore
important that you check and re-check the application form until you are fully satisfied with
all sections before clicking 'submit application'.

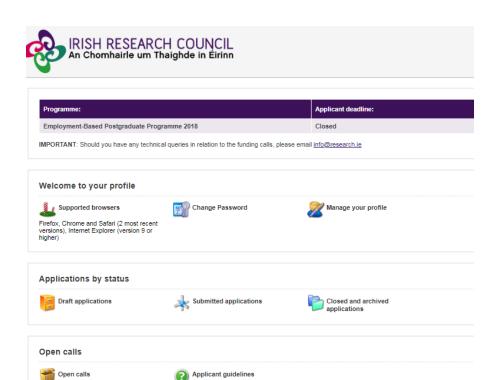
# 5. Registering as an applicant<sup>2</sup>

- In order to register as an applicant on the online system for the first time, navigate to this link and complete the applicant registration form as prompted.
- Please note that 'ordinarily resident' refers to the applicant's place of legal and permanent residence. This will not be deemed as having been interrupted if an absence from the country of ordinary residency has been caused by the training, education or employment of the applicant or the applicant's spouse or parents. Applicants deemed to be citizens of the EU are those applicants who are either citizens of Ireland or of a Member State of the European Union AND have been ordinarily resident within a Member State of the EU/Ireland for a continuous period of three out of the five years prior to the application deadline.
- Once you have filled in all the required details, click 'submit' at the bottom of the
  registration page. A confirmation email with the subject 'Irish Research Council,
  applicant registration' will automatically be sent to the email address you have
  provided. This email confirms that you have successfully registered for the online
  system and will issue you with a username and password.
- If you do not receive this email, please check your spam folder and ensure that the <a href="mailto:ircapps@research.ie">ircapps@research.ie</a> email address is on your 'safe senders' list. If you are using an institutional or work email account, you may need to check with your IT department to ensure there is no issue with your organisation's internal firewall.
- Once you have received your username and password, you should access the online system <u>here</u> using the login details provided.
- If you have lost or forgotten your password, navigate to this <u>link</u> and click 'Forgot password?' A system-generated password will be forwarded to your email address. If you do not receive this email, please check your spam folder. Please note that it may take up to 15 minutes to receive the email containing your new password.
- Please note: Researchers who register as an Applicant using a different email address from the one they already have as mentor or supervisor will effectively create a new profile within the system and this is discouraged.

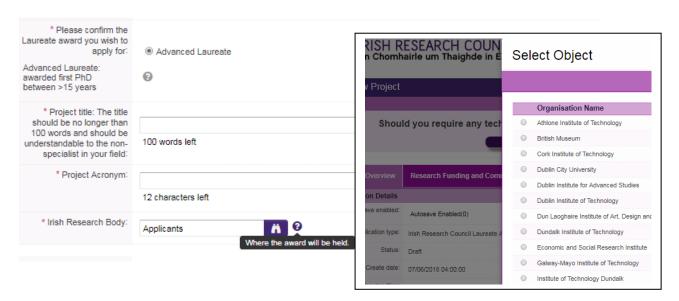
# 6. Creating an application

• When you login, you will be presented with the 'home' screen below where you can create and edit your application prior to the applicant deadline.

<sup>&</sup>lt;sup>2</sup> This includes researchers who have an existing profile as Mentor/ Supervisor/ Referee but have not previously applied using the OLS in their own right to submit an application.



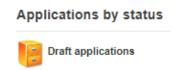
- Begin creating your application by clicking on the 'Open Calls' icon.
- The 'applicant details' section on the first page of the application form is largely populated based on your personal profile details. If you would like to update any of this information, click 'save draft' and navigate back to the home screen where you can find the 'manage your profile' icon.
- Once you have started your application and clicked 'save draft', you will find your application in the 'Draft applications' icon on the home page (not the 'Open call' icon).
- In your application, your proposed host institution can be selected by clicking the 'lookup' button in the 'Irish Research Body' field followed by the 'show all' button on the new window that subsequently appears. Select the appropriate check box next to your higher education institution and it will be associated with your application.



- At this point, your draft application has been created. The system will default to 'edit' mode and you can input information and save it by clicking the 'save draft' button at the bottom of the page. Once you have selected your Irish Research Body you should scroll down to the bottom of the screen and click on the bottom of the screen. Once you have clicked save Draft button at the bottom of the screen. Once you have clicked save Draft, the draft application form will be saved and there will be a unique project id attached to the application and some sections that were hidden will become available for editing.
- As each applicant can only submit ONE application to each scheme, the icon to create
  a new application will no longer be visible on your home page once you have created
  and save a draft application.

## 7. Editing an application

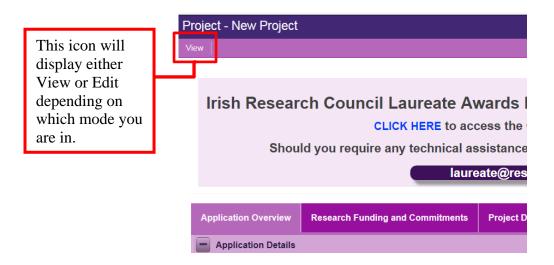
- You can access and edit your application as often as you like prior to the applicant deadline so long as the application has not been submitted and remains in draft status. Do not use the browser 'back' button at any stage as you may lose essential information. Navigate within your application using the tabs at the top, or the 'Home | Profile | Logout' buttons at the top of your page.
- From the home screen, click on the 'Draft Applications' icon.



• To edit your application, click 'Edit'.



• You must be in 'edit' mode to input information to your application form.



• As each applicant can only submit one application to a scheme, the message below will now appear if you click on the 'open calls' icon on your home page.

You have already created an Application for this Call. Please click your Draft Applications icon on your Portal.

- You may move between tabs without pressing the 'Save draft' button if you wish, but
  please ensure that you press the 'save draft' button at the bottom of each page before
  exiting the application form.
- All tabs will need to be completed prior to submitting your form.

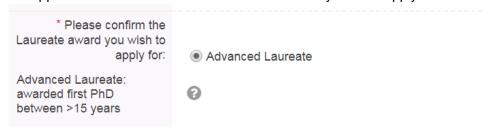
		Application Overview	Research Funding and Commitments	Project Details	Ethical Statement	Indicative Budget	Uploads	Applicant Declaration
--	--	----------------------	----------------------------------	-----------------	-------------------	-------------------	---------	-----------------------

## 8. Completing the application

- To complete the application form, applicants will need to complete the following tabs:
  - o Application Overview
  - Research funding and commitments
  - Project Details
  - o Ethical Statement
  - Indicative Budget
  - o Uploads
  - Applicant Declaration

#### 8.1 Project Overview

Applicants must confirm the Laureate award they wish to apply for.



• Applicants must enter the project title. The proposal title should be understandable to the non-specialist in your field.

Project title:	
	3 100 words left

Applicants must enter the project acronym of no more than 12 characters. The
project acronym will be used to identify your proposal in the call.

* Project Acronym:	
	② 12 characters left

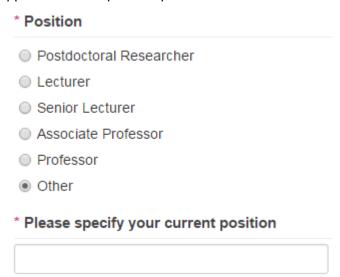
•	The lay abstract should be written in simple language for a non-expert audience. It
	must be short and precise and it should not contain confidential information. There
	is a limit of 300 words. The lay abstract must be written in English.

Lay abstract
Please provide a lay abstract for your proposed research which will be used to inform a non-expert audience
300 words left

ORCID provides a persistent digital identifier that distinguishes you from every other
researcher and, through integration in key research workflows such as manuscript
and grant submission, supports automated linkages between you and your
professional activities ensuring that your work is recognised. If you do not currently
have an ORCID, please register for one at <a href="https://www.orcid.org">www.orcid.org</a>.

* ORCID identifier			

- The 'applicant details' section on the first page of the application form is largely populated based on your personal profile details. If you would like to update any of this information, click 'save draft' and navigate back to the home screen where you can find the 'manage your profile' icon.
- Applicants are required to provide details on their current academic position.



• Please enter details of your current employer.

		Current Organisation Name
		Current Department/Faculty/Institute Name
		Organisation Address (street name, city, country, postcode)
•	Applicants are	required to select their current employment status.  * Employment status
		Permanent
		Indefinite duration
		Fixed term contract
		Not currently employed

- Applicants must specify if they hold a medical degree or degree in medicine. If yes, applicants must indicate if they held a position that requires doctoral equivalence (e.g. post-doctoral fellowship, professorship appointment). For medical doctors, a medical degree will not be accepted by itself as equivalent to a PhD.
- Applicants must specify the date of award of the earliest degree (PhD or equivalent doctoral degree) that makes them eligible for an IRC Advanced Laureate Award:
  - Advanced Laureate Award: the applicant shall have been awarded his/her first PhD at least 15 years prior to 1 January 2019. Cut-off dates: 1 January 2004 (inclusive).
  - For medical doctors, this may be your medical degree or your PhD depending on whether you have held a position requiring doctoral equivalence and when. Please note that if your medical degree is the earliest degree that makes you eligible for the call, the certified date of the MD completion plus two years is the time reference for calculation of the eligibility time-window and the date that needs to be entered in this field (i.e. 17 years past MD for Advanced Laureates).
- The date should correspond to the date on the actual original certificate. Wrong or missing information may result in your application being declared ineligible.
- For applicants who hold medical degrees, supporting documentation for any
  position that requires doctoral equivalence (certificates of both a medical doctor
  degree and a PhD or proof of an appointment that requires doctoral equivalency
  (e.g. postdoctoral fellowship, professorship appointment) must be uploaded.
- Applicants must inform the Research Office in the (proposed) host institution of their intention to apply to the programme.

* Have you informed the Research Office in the (proposed) ho	st institution of your in
○ Yes	
○ No	

#### 8.2 Research funding and commitments

- Applicants should include details of any current research awards, or previous awards received to date. This should include competitive research funding received from funding agencies (international and national), charities, industry, etc.
- Only awards (expired and current) where the applicant is either the Principal Investigator or Co-Investigator should be listed.
- Award value: The portion of research funding claimed in an applicant's name must be an accurate and fair reflection of their responsibility in the projects listed. For consortium projects, e.g. under Horizon 2020 international joint programmes, applicants should only list the portion of the research funding allocated to them, not the full amount awarded to the consortium.
- Role of the applicant: Principal Investigator; Co-Principal Investigator. If the applicant individually won a research scholarship or fellowship, then 'Research Scholar' or 'Research Fellow' should be used as appropriate.
- Applicants must also indicate their percentage time commitment to current research projects, as a function of 100% of their total working time. Please note that applicants will be required to commit a minimum of 25% of their total working time to an Advanced Laureate Award.
- Applicants must indicate if any of the expired and current research awards have any relation to the proposal being submitted.
- If an applicant is proposing to change host institution for the Laureate application, they must provide details of their plans in respect of transferring the currently-hold research awards.

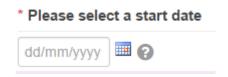


#### 8.3 Project Details

Applicants must select the duration of the project in full months (1-48 months).

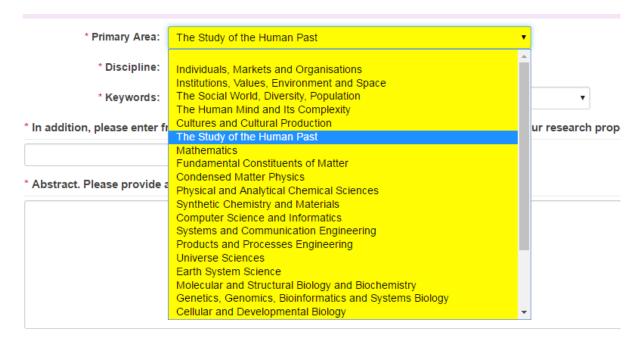


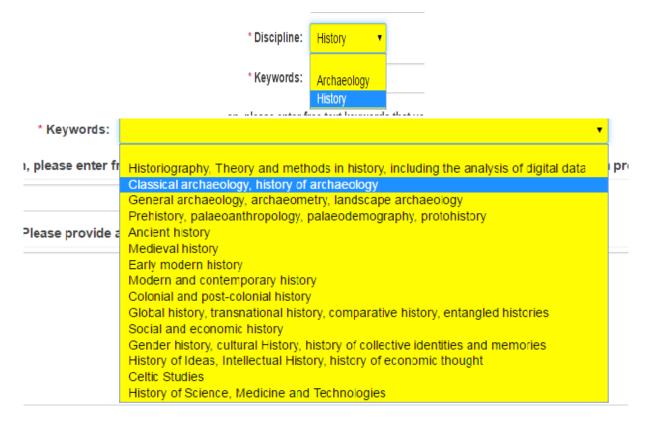
 Applicants must insert the proposed start date for the project. Projects must start between 1<sup>st</sup> April and 9<sup>th</sup> September 2019. Other dates are ineligible.



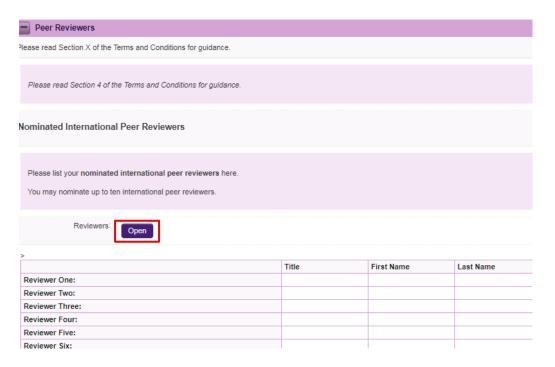
 Applicants must select the domain panel to which they will submit the application for assessment.

- \* Please choose the domain panel to which you are submitting your application for assessment.
- Life Sciences
- Physical Sciences and Engineering
- Social Sciences and Humanities
  - Applicants are required to indicate the primary area, discipline and other research
    area under which their proposed research programme fits. This will allow the Council
    to select the appropriate remote peer reviewers and panel members to review the
    application. Applicants should consult Annex A AHSS Disciplines and Annex
    B STEM Disciplines for further information.
  - In addition, applicants can enter free text keywords that they consider best characterise the scope of the proposal.





- The abstract should provide the reader with a clear understanding of the objectives
  of the research proposal and how they will be achieved. The abstract will be used as
  the short description of the research proposal in the evaluation process and when
  contacting remote peer reviewers. It must be short and precise and it should not
  contain confidential information. There is a limit of 300 words. The abstract must be
  written in English.
- Applicants are asked to indicate whether they agree to the project title and abstract (without disclosing their identity) being used when contacting remote peer reviewers, please indicate yes or no.
- Applicants must indicate if this proposal or a very similar one has been submitted to a call for proposals in the past two years. Please indicate yes or no. If yes, please provide the following details: project title, funding programme, funding agency and status (funded, reserve, unsuccessful, result pending).
- Applicants are required to provide the name, institution and e-mail address of nominated and excluded peer reviewers. Please see sections 4.2.5 and 4.2.6 of the Terms and Conditions for more guidance on the selection of international peer reviewers.
- In order to input your peer reviewers, please click the "open" button. Once you are finished updating your peer reviewers, click 'Save' and then 'Close' to save the names and return to the main application form.



- A single submission of the full proposal will be followed by a two-stage evaluation approach. A complete proposal will comprise the documents listed in section 4.2.4 of the Terms and Conditions, uploaded in PDF (Word documents will not be accepted).
- Applicants must submit scanned copies of documents proving their eligibility for the award, i.e. the PhD certificate, clearly indicating the date of award and any relevant documentary evidence.
- For the detailed research proposal (15 pages max.) the following formatting constraints must be adhered to: Arial, at least font size 11, black font, margins (2.0cm side, 1.5cm top and bottom), single line spacing. References do not count towards the page limit.
- Each uploaded document (where appropriate) shall carry a header with the applicant's last name, the acronym of the proposal and the name of the section: detailed research proposal, track record, CV etc.
- Please provide only the documents requested in section 4.2.4 of the Terms and Conditions. If additional materials other than those requested are uploaded, all additional materials will deem an entire application ineligible.

#### 8.4 Ethical statement and sex/gender dimension

- The self-assessment table must be completed even if there are no issues (simply
  confirm that none of the ethical issues apply to the proposal). Please note that, in
  case you answer YES to any of the questions, you are requested to provide a
  statement on ethical issues to address it.
- Applicants are advised to consult the <u>H2020 Guidance Document How to complete</u> your ethics self-assessment before completing the ethics self-assessment.

Project Overview	Research Funding and Commitments	Project Details	Ethical Statement		
_					
Ethics Self-	Assessment/Sex-Gender Sta	atements			
1. HUMAN EMBRY	OS / FOETUSES				
* Does your resear	ch involve Human Embryonic Stem Ce	lls (hESCs)?			
<ul><li>Yes</li></ul>					
○ No					
* Does your resear	ch involve the use of human embryos?	•			
Yes					
○ No	○ No				
* Does your resear	ch involve the use of human foetal tiss	ues / cells?			
○ Yes					
○ No					
2. HUMANS					
* Does your resear	ch involve human participants?				
Yes					
○ No					
* Does your resear	ch involve physical interventions on th	e study participa	nts?		

 When completing the sex/gender dimension, please consult the sex/gender dimension statement in Appendix 1 of the Terms and Conditions for further information.

### 8.5 Indicative Budget

 When you click on the Indicative Budget tab you should initially see the proposed budget summary. In order to input your proposed budget details, you must click on the "Open Budget" button.

Open Budget		
Eligible Costs:	Year 1:	Year 2:
Personnel:		
Travel Costs:		
Materials and Consumables:		
Publication Costs:		
Dissemination & Knowledge Exchange Costs:		
Access to Research Infrastructures:		
Relocation Expenses:		
Overheads:		
Equipment:		
Grand Total:		

• The budget editor will open as follows:

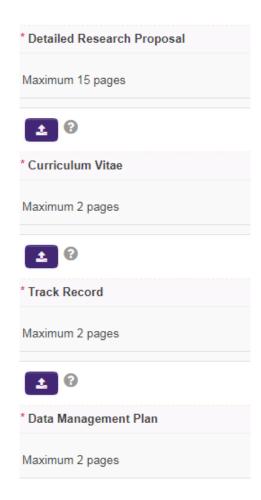
## **Indicative Budget Details**

Budget	_				
Eligible Costs	Year 1	Year 2	Year 3	Year 4	Total
Personnel					
Travel costs					
Materials Consumables					
Publication costs					
Dissemination Knowledge Exchange Costs					
Access to Research Infrastructures					
Relocation expenses					
Overheads					
Equipment					
Grand Total					

- Please see section 3.2 of the Terms and Conditions for more information on eligible costs.
- The figures (for each category and the grand total) should match the figures included in the resources section of the detailed research proposal.
- Relocation expenses can only be requested in Year 1.
- The overheads will be automatically calculated at 25% (direct costs less equipment).
- Click 'Save' and then 'Close' to save the budget and return to the main application form.

#### 8.6 Uploads

- Applicants must upload the following documents in <u>PDF only</u> in order to submit a complete application:
  - Detailed Research Proposal 15 pages max.
  - CV 2 pages max.
  - Track Record 2 pages max.
  - Data Management Plan 2 pages max.
  - Statement on ethical issues to be addressed 2 pages max.
  - o Two letters of support from the Host Institution.
  - PhD certificate (and supporting documentation if applicable).
- Applications submitted in Irish must be provided with a translation of the documents in English. The translated documents must also adhere to the page limits as specified in the Terms and Conditions.
- Copies of official verification documents, e.g. PhD degree certificate, can be submitted in any of the EU languages. These documents submitted in any language other than English must be accompanied by a certified translation in English.

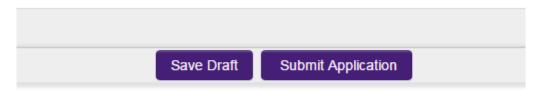


#### 8.7 Applicant Declaration

- The applicant is responsible for the correctness of the information relating to the application. Any evidence of misleading or incorrect information will result in the application being deemed ineligible.
- Applicants must tick the boxes indicating that they agree with the statements.

#### 8.8 Submitting the Application

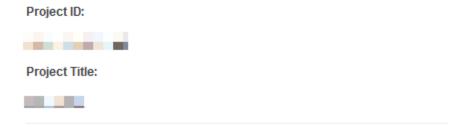
- No alterations can be made to an application once it has been submitted. It is
  therefore important to check and re-check the application form until you are
  fully satisfied with all sections before submitting. If successful, you will only
  be offered funding to carry out the project as detailed in the application.
- In order to submit the application form, you must scroll to the bottom of the page and click 'submit application'.



• The following message will be displayed once your application has been submitted successfully.



# Submission Successful



# 9. Evaluation and selection of proposals

#### 9.1 Eligibility Check

- All proposals are first checked to ensure that all of the eligibility criteria are met.
- A proposal must fulfil all of the following eligibility criteria:
  - o It must be submitted on or before the call deadline.
  - It must be complete, readable and printable (i.e. all of the requested forms, parts or sections of the proposal, and supporting documents must be completed and present).
  - It must meet the eligibility requirements of the respective award being applied for (PhD or equivalent eligibility) as well as other criteria (requests to take account of career break(s) and funding awards (ERC)) mentioned in the call for proposals.
- The eligibility is checked on the basis of the information provided by the applicant in the proposal. Where there is a doubt about the eligibility of a proposal, the peer review evaluation may proceed pending a final decision. If it becomes clear before, during or after the peer review evaluation phase, that one or more of the eligibility criteria has not been met (for example due to misleading or incorrect information), the proposal will be declared ineligible and not considered any further.

#### 9.2 Peer review evaluation of proposals

- A single submission of an IRC Advanced Laureate Award proposal will be followed by a two-step peer review evaluation.
- All applications to the programme will be evaluated by an international panel supported by remote peer reviewers, across three panel domains:
  - Humanities and Social Sciences (HSS)
  - o Life Sciences (LS)
  - o Physical Sciences and Engineering (PE).

- The composition of each panel will broadly reflect the disciplines within the respective domain.
- Any direct or indirect contact about the peer review evaluation of a proposal between an applicant or their host institution and a peer reviewer involved in the peer review evaluation may result in the decision of the Council to exclude the proposal concerned from the evaluation.
- In summary, the evaluation process will be implemented as follows:
  - Evaluation Step 1: the full proposal (detailed proposal, track record and CV) of all applications will be evaluated by remote peer reviewers. Based on the outcome of the evaluation and indicative budgetary parameters, a cohort of applications (Rated 'A', see below) will be retained for step 2.
  - Evaluation Step 2: for retained applications, the full proposal (detailed proposal, track record and CV) will be reviewed by the relevant domain panel, supported by remote peer reviewers.

#### 9.3 Outcome of evaluation and feedback

- Outcome of Step 1: At the end of Step 1, applicants will be notified that their application has been categorised as one of the following:
  - 'A' rating: Proposal is of excellent quality and will pass to Step 2 of the evaluation process.
  - 'B' rating: Proposal is of high quality but not sufficient to pass to Step 2 of the evaluation process. Applicants may apply for the same award on one subsequent occasion.
- Outcome of Step 2: At the end of Step 2, applicants will be notified that their application has been categorised as one of the following:
  - 'A' rating: Proposal fully meets the excellence criterion and is recommended for funding subject to available budget.
  - o 'B' rating: Proposal meets some but not all elements of the excellence criterion and will not be funded. Applicants may apply for the same award on one subsequent occasion.
- Applicants are provided with feedback on the outcome of the peer review evaluation through an evaluation report. The evaluation report indicates whether the proposal meets the quality threshold and is retained, and provides the score and comments given by panel members.
- It is important to note that comments by individual reviewers may not necessarily be convergent. Differences of opinion about the merits of a proposal are legitimate among evaluators and it can be potentially beneficially for an applicant to be aware of the various opinions.
- The panel comment is the key element of the information provided to the applicants at the end of the evaluation. It should clearly explain the decision adopted by the panel substantiating the reasons which led to the panel decision. The panel comments reflect the consensus decision taken by the panel as a whole based on prior remote assessments from remote peer reviewers, and on a thorough discussion and on the ranking against other proposals during the panel meeting.

#### 9.4 Appeals

• The Irish Research Council has a 'Declined Funding' Appeals Policy. The primary function of the appeals procedure is to ensure that the Council's review process has been fair and reasonable, and that the Council's review procedures were followed. The appeal procedure is not a peer review process itself and will not re-open such a process. Rather it is designed to examine the possibility of procedural errors that may have occurred during assessment and other aspects of proposal review including:

unaccounted-for conflicts of interest, inappropriate consideration of extraneous information / rumour / hearsay or incomplete / inconsistent documentation being made available to the reviewers.

# 10. Information for successful applicants

- The Council will make conditional award offers subject to the terms of the letter of offer, application, approved budget and the 2017/18 Terms and Conditions.
- Any conditional offer is subject to the acceptance form being signed by the applicant and higher education institution and returned to the Council on time. Subject to meeting the conditions of offer, all scholarships should commence by 31<sup>st</sup> May 2019.

# **Annex A: Arts, Humanities & Social Sciences Disciplines**

Primary Area: Study of the Human Past			
Disciplines	Fields of Research		
<ul><li>Archaeology</li><li>History</li></ul>	<ul> <li>including but not limited to: <ul> <li>Historiography, Theory and methods in history, including the analysis of digital data</li> <li>Classical archaeology, history of archaeology</li> <li>General Archaeology, archaeometry, landscape archaeology</li> <li>Prehistory, paleoanthropology, palaeodemograpy, protohistory</li> <li>Ancient History</li> <li>Medieval History</li> <li>Early Modern History</li> <li>Modern and Contemporary History</li> <li>Colonial and Post-colonial History</li> <li>Global and Transnational History, Entangled Histories</li> <li>Social and Economic History</li> <li>Gender History, Cultural History, History of Collective Identities and Memories</li> <li>History of Ideas, Intellectual History, history of economic thought</li> <li>Celtic Studies</li> <li>History of Science, Medicine and Technologies.</li> </ul> </li> </ul>		

Primary Area: Cultures and Cultural production		
Disciplines	Fields of Research	
<ul> <li>Cultural Studies</li> <li>Philology</li> <li>Literature Philosophy</li> <li>Anthropology</li> <li>Study of the arts</li> </ul>	including but not limited to:  - Classics, ancient literature and art - Theory and history of Literature, comparative literature - Philology and palaeography; historical linguistics - Visual and performing arts, film, design - Music and Musicology, History of Music - History of Art and Architecture, arts based research - Museums, exhibitions, conservation and restoration - Cultural Studies, cultural identities and memories, cultural heritage - Social anthropology, religious studies, theology, symbolic representation - Metaphysics, philosophical anthropology; aesthetics - Ethics; social and political philosophy - History of Philosophy - Computational modelling and Digitisation in the cultural sphere - Theatre Studies - Folklore Studies - Languages (ancient and modern) - Irish Language Studies	

Primary Area: Individuals, Markets and Organisation				
Disciplines	Fields of Research			
Economics     Finance and management	including but not limited to:  - Macroeconomics; monetary economics; economic growth  - International trade; international business; international management; spatial economics  - Financial economics; monetary economics  - Financial economics; banking; corporate finance; international finance; accounting; auditing; insurance  - Labour and demographic economics; human resource management  - Econometrics; operations research  - Behavioural economics; experimental economics; neuro-economics  - Microeconomics; game theory  - Industrial organisation; strategy; entrepreneurship  - Management; marketing; organisational behaviour; operations management  - Technological change, innovation, research & development  - Agricultural economics; energy economics; environmental  - Public economics; political economics; law and economics  - Quantitative economic history; institutional economics; economic systems  - Development economics, health economics, education economics			

Primary Area: Institutions, Values, Environment and Space			
Disciplines	Fields of Research		
<ul> <li>Political science</li> <li>Law</li> <li>Sustainability science</li> <li>Geography</li> <li>Regional studies and planning</li> </ul>	<ul> <li>including but not limited to:</li> <li>Political systems, governance</li> <li>Democratisation and social movements</li> <li>Conflict resolution, war</li> <li>Legal studies, constitutions, human rights, comparative law</li> <li>International relations, global and transnational governance</li> <li>Sustainability sciences, environment and resources</li> <li>Environmental and climate change, societal impact and policy</li> <li>Energy, transportation and mobility</li> <li>Urban, regional and rural studies</li> <li>Land use and regional planning</li> <li>Human, economic and social geography</li> <li>GIS, spatial analysis; big data in political, geographical and legal studies</li> </ul>		

Primary Area: The Social World, Diversity, Population				
Disciplines	Fields of Research			
<ul> <li>Sociology</li> <li>Social psychology</li> <li>Demography</li> <li>Education</li> <li>Communication</li> </ul>	<ul> <li>including but not limited to: <ul> <li>Social structure, social mobility</li> <li>Inequalities, discrimination, prejudice, aggression and violence, antisocial behaviour</li> <li>Social integration, exclusion, prosocial behaviour</li> <li>Attitudes and beliefs</li> <li>Social influence; power and group behaviour; classroom management</li> <li>Diversity and identities, gender, interethnic relations</li> <li>Social policies, welfare</li> <li>Population dynamics; households, family and fertility</li> <li>Health, ageing and society</li> <li>Social aspects of learning, curriculum studies, educational policies</li> <li>Communication and information, networks, media</li> <li>Digital social research</li> <li>Science and technology studies</li> </ul> </li> </ul>			

Primary Area: The Human Mind and Its Complexity				
Disciplines	Fields of Research			
<ul> <li>Cognitive Science</li> <li>Psychology</li> <li>Linguistics</li> <li>Philosophy of Mind</li> </ul>	<ul> <li>including but not limited to:</li> <li>Cognitive basis of human development and education, developmental disorders; comparative cognition</li> <li>Personality and social cognition; emotion</li> <li>Clinical and health psychology</li> <li>Neuropsychology</li> <li>Attention, perception, action, consciousness</li> <li>Learning, memory; cognition in ageing</li> <li>Reasoning, decision-making; intelligence</li> <li>Language learning and processing (first and second languages)</li> <li>Theoretical linguistics; computational linguistics</li> <li>Language typology</li> <li>Pragmatics, sociolinguistics, discourse analysis</li> <li>Philosophy of mind, philosophy of language</li> <li>Philosophy of science, epistemology, logic</li> </ul>			

# **Annex B Science Technology Engineering & Mathematics Disciplines**

# **Physical Sciences and Engineering**

Primary Area: Mathematics			
Disciplines	Fields of Research		
<ul> <li>All areas of mathematics</li> <li>Pure and applied</li> <li>Plus mathematical foundations of computer science</li> <li>Mathematical physics and statistics</li> </ul>	including but not limited to:  - Logic and foundations  - Algebra  - Number theory  - Algebraic and complex geometry  - Geometry  - Topology  - Lie groups, Lie algebras  - Analysis  - Operator algebras and functional analysis  - ODE and dynamical systems  - Theoretical aspects of partial differential equations  - Mathematical physics  - Theoretical physics  - Probability  - Statistics  - Discrete mathematics and combinatorics  - Mathematical aspects of computer science  - Numerical analysis  - Scientific computing and data processing  - Control theory and optimisation  - Application of mathematics in sciences  - Application of mathematics in industry and society		

Primary Area: Systems and Communication Engineering		
Disciplines	Fields of Research	
<ul> <li>Electrical</li> <li>Electronic</li> <li>Communication</li> <li>Optical and systems engineering</li> </ul>	<ul> <li>including but not limited to: <ul> <li>Control engineering</li> <li>Electrical engineering: power components and/or systems</li> <li>Simulation engineering and modelling</li> <li>(Micro and nano) systems engineering</li> <li>(Micro and nano) electronic, optoelectronic and photonic components</li> <li>Communication technology, high-frequency technology</li> <li>Signal processing</li> <li>Networks (communication networks, sensor networks, networks of robots, etc.)</li> <li>Man-machine-interfaces</li> <li>Robotics</li> <li>Components and systems for applications (in e.g. medicine, biology, environment)</li> </ul> </li> </ul>	
	- Electrical energy production, distribution, application	

Primary Area: Fundar	mental Constituents of Matter				
Disciplines Fields of Research					
•					
	including but not limited to:				
Particle	- Fundamental interactions and fields				
<ul> <li>Nuclear</li> </ul>	- Particle physics				
<ul> <li>Plasma, atomic</li> </ul>	- Nuclear physics				
<ul> <li>Molecular</li> </ul>	- Nuclear astrophysics				
• Gas	- Gas and plasma physics				
<ul> <li>Optical physics</li> </ul>	- Electromagnetism				
	- Atomic, molecular physics				
	- Ultra-cold atoms and molecules				
	- Optics, non-linear optics and nano-optics				
	- Quantum optics and quantum information				
	- Lasers, ultra-short lasers and laser physics				
	- Acoustics				
	- Relativity				
	- Thermodynamics				
	•				
	- General physics				
	• •				
	- Statistical physics (gases)				
	<ul><li>Thermodynamics</li><li>Non-linear physics</li><li>General physics</li><li>Metrology and measurement</li></ul>				

Primary Area: Condensed Matter Physics			
Disciplines	Fields of Research		
	including but not limited to:		
<ul> <li>Structure</li> </ul>	- Structure of solids and liquids		
<ul> <li>Electronic</li> </ul>	<ul> <li>Mechanical and acoustical properties of condensed matter,</li> </ul>		
properties	Lattice dynamics		
Fluids	- Transport properties of condensed matter		
<ul> <li>Nanosciences</li> </ul>	<ul> <li>Electronic properties of materials, surfaces, interfaces,</li> </ul>		
<ul> <li>Biophysics</li> </ul>	nanostructures, etc.		
	- Semiconductors and insulators: material growth, physical		
	properties		
	- Macroscopic quantum phenomena: superconductivity,		
	superfluidity, etc.		
	- Spintronics		
	<ul> <li>Magnetism and strongly correlated systems</li> </ul>		
	- Condensed matter – beam interactions (photons, electrons, etc.)		
	- Nanophysics: nanoelectronics, nanophotonics, nanomagnetism,		
	- nanoelectromechanics, etc.		
	- Mesoscopic physics		
	- Molecular electronics		
	- Structure and dynamics of disordered systems: soft		
	matter (gels, colloids, liquid crystals, etc.), glasses, defects, etc.		
	- Fluid dynamics (physics)		

-	Statistical physics: phase transitions, noise	and fluctuations,
	models of complex systems, etc.	
-	Physics of biological systems	

Primary Area: Physical and Analytical Chemical Sciences	
Disciplines	Fields of Research
<ul> <li>Analytical chemistry</li> <li>Chemical theory</li> <li>Physical chemistry/ chemical physics</li> </ul>	including but not limited to:  - Physical chemistry  - Spectroscopic and spectrometric techniques  - Molecular architecture and Structure  - Surface science and nanostructures  - Analytical chemistry  - Chemical physics  - Chemical instrumentation  - Electrochemistry, electrodialysis, microfluidics, sensors  - Method development in chemistry  - Heterogeneous catalysis  - Physical chemistry of biological systems  - Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions  - Theoretical and computational chemistry  - Radiation and Nuclear chemistry  - Photochemistry  - Corrosion  - Characterisation methods of materials  - Environment chemistry

Primary A	Primary Area: Synthetic Chemistry and Materials	
Discipline	S	Fields of Research
<ul><li>Struct relatio</li><li>Functi materi</li><li>Molec</li></ul>	ional and advanced	including but not limited to:  - Structural properties of materials - Solid state materials - Surface modification - Thin films - Ionic liquids - New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles - Biomaterials, biomaterials synthesis - Intelligent materials – self assembled materials - Coordination chemistry - Colloid chemistry - Biological chemistry - Chemistry of condensed matter - Homogeneous catalysis - Macromolecular chemistry - Polymer chemistry - Supramolecular chemistry - Organic chemistry - Molecular chemistry - Combinatorial chemistry - Nanochemistry

Primary Area: Computer Science and Informatics	
Disciplines	Fields of Research
<ul> <li>Informatics and information systems</li> <li>Computer science,</li> <li>Scientific computing,</li> <li>Intelligent systems</li> </ul>	<ul> <li>including but not limited to:         <ul> <li>Computer architecture, pervasive computing, ubiquitous computing</li> <li>Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems</li> <li>Software engineering, operating systems, computer languages</li> <li>Theoretical computer science, formal methods, and quantum computing</li> <li>Cryptology, security, privacy, quantum crypto</li> <li>Algorithms, distributed, parallel and network algorithms, algorithmic game</li> <li>theory</li> <li>Artificial intelligence, intelligent systems, multi agent system</li> <li>Computer graphics, computer vision, multimedia, computer games</li> <li>Human computer interaction and interface, visualisation and natural language processing</li> <li>Web and information systems, database systems, information retrieval and digital libraries, data fusion</li> <li>Machine learning, statistical data processing and applications using signal processing (e.g. speech, image, video)</li> <li>Scientific computing, simulation and modelling tools</li> <li>Bioinformatics, biocomputing, and DNA and molecular computation</li> </ul> </li> </ul>

Primary Area: Universe Sciences	
Disciplines	Fields of Research
<ul> <li>Astro-         physics/chemistry/         biology</li> <li>Solar system</li> <li>Stellar</li> <li>Galactic and         extragalactic         astronomy</li> <li>Planetary systems</li> <li>Cosmology</li> <li>Space science</li> <li>Instrumentation</li> </ul>	including but not limited to:  - Solar and interplanetary physics  - Planetary systems sciences  - Interstellar medium  - Formation of stars and planets  - Astrobiology  - Stars and stellar systems  - The Galaxy  - Formation and evolution of galaxies  - Clusters of galaxies and large-scale structures  - High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos  - Relativistic astrophysics  - Dark matter, dark energy  - Gravitational astronomy  - Cosmology  - Space Sciences  - Very large data bases: archiving, handling and analysis  - Instrumentation - telescopes, detectors and techniques

Primary Area: Products and Process Engineering	
Disciplines	Fields of Research
<ul> <li>Product design</li> <li>Process design and control</li> <li>Construction method</li> <li>Civil engineering</li> <li>Energy process</li> <li>Material engineering</li> </ul>	<ul> <li>including but not limited to: <ul> <li>Aerospace engineering</li> <li>Chemical engineering, technical chemistry</li> <li>Civil engineering, architecture, maritime/hydraulic engineering, geotechnics, waste treatment</li> <li>Computational engineering</li> <li>Fluid mechanics, hydraulic-, turbo-, and piston engines</li> <li>Energy processes engineering</li> <li>Mechanical and manufacturing engineering (shaping, mounting, joining, separation)</li> <li>Materials engineering (biomaterials, metals, ceramics, polymers, composites, etc.)</li> <li>Production technology, process engineering</li> <li>Industrial design (product design, ergonomics, manmachine interfaces, etc.)</li> <li>Sustainable design (for recycling, for environment, ecodesign)</li> <li>Lightweight construction, textile technology</li> <li>Industrial bioengineering</li> </ul> </li> </ul>

Primary Area: Earth Sys	Primary Area: Earth System Science	
Disciplines	Fields of Research	
<ul> <li>Physical geography</li> <li>Geology</li> <li>Geophysics</li> <li>Atmospheric sciences</li> <li>Oceanography</li> <li>Climatology</li> <li>Cryology</li> <li>Ecology</li> <li>Global environmental change</li> <li>Biogeochemical cycles</li> <li>Natural resources management</li> </ul>	including but not limited to:  - Atmospheric chemistry, atmospheric composition, air pollution  - Meteorology, atmospheric physics and dynamics  - Climatology and climate change  - Terrestrial ecology, land cover change  - Geology, tectonics, volcanology  - Palaeoclimatology, palaeoecology  - Physics of earth's interior, seismology, volcanology  - Oceanography (physical, chemical, biological, geological)  - Biogeochemistry, biogeochemical cycles, environmental chemistry  - Mineralogy, petrology, igneous petrology, metamorphic petrology  - Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics Sedimentology, soil science, palaeontology, earth evolution  - Physical geography  - Earth observations from space/remote sensing  - Geomagnetism, palaeomagnetism  - Ozone, upper atmosphere, ionosphere  - Hydrology, water and soil pollution  - Cryosphere, dynamics of snow and ice cover, sea ice, permafrosts and ice sheets	

### **Life Sciences**

Primary Area: Molecular and Structural Biology and Biochemistry	
Disciplines	Fields of Research
<ul> <li>Molecular synthesis</li> <li>Modification and interaction</li> <li>Biochemistry</li> <li>Biophysics</li> <li>Structural biology</li> <li>Metabolism</li> <li>Signal transduction</li> </ul>	<ul> <li>including but not limited to: <ul> <li>Molecular interactions</li> <li>General biochemistry and metabolism</li> <li>DNA synthesis, modification, repair, recombination and degradation</li> <li>RNA synthesis, processing, modification and degradation</li> <li>Protein synthesis, modification and turnover</li> <li>Lipid synthesis, modification and turnover</li> <li>Carbohydrate synthesis, modification and turnover</li> <li>Biophysics (e.g. transport mechanisms, bioenergetics, fluorescence)</li> <li>Structural biology (crystallography and EM)</li> <li>Structural biology (NMR)</li> <li>Biochemistry and molecular mechanisms of signal transduction</li> </ul> </li> </ul>

Primary Area: Genetics, Genomics, Bioinformatics and Systems Biology	
Disciplines	Fields of Research
<ul> <li>Molecular and population genetics</li> <li>Genomics</li> <li>Transcriptomics</li> <li>Proteomics</li> <li>Metabolomics</li> <li>Bioinformatics</li> <li>Computational biology</li> <li>Biostatistics</li> <li>Biological modelling and simulation</li> <li>Systems biology</li> <li>Genetic epidemiology</li> </ul>	including but not limited to:

Primary Area: Cellular and Developmental Biology	
Disciplines	Fields of Research
<ul> <li>Cell biology</li> <li>Cell physiology</li> <li>Signal transduction</li> <li>Organogenesis</li> <li>Developmental genetics</li> <li>Pattern formation in plants and animals</li> <li>Stem cell biology</li> </ul>	including but not limited to:  - Morphology and functional imaging of cells  - Cell biology and molecular transport mechanisms  - Cell cycle and division  - Apoptosis  - Cell differentiation, physiology and dynamics  - Organelle biology  - Cell signalling and cellular interactions  - Signal transduction  - Development, developmental genetics, pattern formation and embryology in animals  - Development, developmental genetics, pattern formation and embryology in plants  - Cell genetics  - Stem cell biology

Primary Area: Physiology, Pathophysiology and Endocrinology	
Disciplines	Fields of Research
<ul> <li>Organ physiology</li> <li>Pathophysiology</li> <li>Endocrinology</li> <li>Metabolism</li> <li>Ageing</li> <li>Tumorigenesis</li> <li>Cardiovascular disease</li> <li>Metabolic syndrome</li> </ul>	<ul> <li>including but not limited to: <ul> <li>Organ physiology and pathophysiology</li> <li>Comparative physiology and pathophysiology</li> <li>Endocrinology</li> <li>Ageing</li> <li>Metabolism, biological basis of metabolism related disorders</li> <li>Cancer and its biological basis</li> <li>Cardiovascular diseases</li> <li>Non-communicable diseases (except for neural/psychiatric, immunity-related, metabolism-related disorders, cancer and cardiovascular diseases)</li> </ul> </li> </ul>

Primary Area: Neurosciences and Neural Disorders	
Disciplines	Fields of Research
<ul> <li>Neurobiology</li> <li>Neuroanatomy</li> <li>Neurophysiology</li> <li>Neurochemistry</li> <li>Neuropharmacology</li> <li>Neuroimaging</li> <li>Systems <ul> <li>neuroscience</li> <li>Neurological and</li> </ul> </li> </ul>	including but not limited to:  - Neuroanatomy and neurophysiology - Molecular and cellular neuroscience - Neurochemistry and neuropharmacology - Sensory systems (e.g. visual system, auditory system - Mechanisms of pain - Developmental neurobiology - Cognition (e.g. learning, memory, emotions, speech) - Behavioural neuroscience (e.g. sleep, consciousness, handedness)
psychiatric orders	<ul> <li>Systems neuroscience</li> <li>Neuroimaging and computational neuroscience</li> <li>Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease)</li> <li>Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive</li> <li>compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)</li> </ul>

Primary Area: Immunity and Infection	
Disciplines	Fields of Research
<ul> <li>The immune system and related disorders,</li> <li>Infectious agents and diseases,</li> <li>Prevention and treatment of infection</li> </ul>	including but not limited to:  - Innate immunity and inflammation  - Adaptive immunity  - Phagocytosis and cellular immunity  - Immunosignalling  - Immunological memory and tolerance  - Immunogenetics  - Microbiology  - Virology  - Bacteriology  - Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)  - Biological basis of immunity related disorders (e.g. autoimmunity)  - Veterinary medicine and infectious diseases in animals

Primary Area: Diagnostics, Therapies, Applied Medical Technology and Public Health		
Disciplines	Fields of Research	
<ul> <li>Aetiology</li> <li>Diagnosis and treatment of disease</li> <li>Public health</li> <li>Epidemiology</li> <li>Pharmacology</li> <li>Clinical medicine</li> <li>Regenerative medicine</li> <li>Medical ethics</li> </ul>	<ul> <li>including but not limited to: <ul> <li>Medical engineering and technology</li> <li>Imaging for medical diagnostics</li> <li>Pharmacology, pharmacogenomics, drug discovery and design, drug therapy</li> <li>Analgesia and Surgery</li> <li>Toxicology</li> <li>Gene therapy, cell therapy, regenerative medicine</li> <li>Radiation therapy</li> <li>Health services, health care research</li> <li>Public health and epidemiology</li> <li>Environment and health risks, occupational medicine</li> <li>Medical ethics</li> </ul> </li> </ul>	

Primary Area: Evolutionary, Population and Environmental Biology		
Disciplines	Fields of Research	
<ul> <li>Evolution</li> <li>Ecology</li> <li>Animal behaviour</li> <li>Population biology</li> <li>Biodiversity</li> <li>Biogeography</li> <li>Marine biology</li> <li>Microbial ecology</li> </ul>	<ul> <li>including but not limited to:         <ul> <li>Ecology (theoretical and experimental; population, species and community level)</li> <li>Population biology, population dynamics, population genetics</li> <li>Systems evolution, biological adaptation, phylogenetics, systematics, comparative biology</li> <li>Biodiversity, conservation biology, conservation genetics, invasion biology</li> <li>Evolutionary biology: evolutionary ecology and genetics, coevolution</li> <li>Biogeography, macro-ecology</li> <li>Animal behaviour</li> <li>Environmental and marine biology</li> <li>Microbial ecology and evolution</li> <li>Species interactions (e.g. food-webs, symbiosis, parasitism, mutualism)</li> </ul> </li> </ul>	

Primary Area: Applied Life Sciences and Non-Medical Biotechnology		
Disciplines	Fields of Research	
<ul> <li>Applied plant and animal sciences</li> <li>food sciences</li> <li>forestry</li> <li>Industrial</li> <li>Environmental and non-medical Biotechnologies</li> <li>Nanotechnologies</li> <li>Bioengineering</li> <li>Synthetic and chemical biology</li> <li>Biomimetics</li> <li>Bioremediation</li> </ul>	<ul> <li>including but not limited to:         <ul> <li>Non-medical biotechnology and genetic engineering (including</li> <li>transgenic organisms, recombinant proteins, biosensors, bioreactors, microbiology)</li> <li>Synthetic biology, chemical biology, bio-engineering and nanobiotechnology</li> <li>Animal sciences (including animal husbandry, aquaculture, fisheries,</li> <li>animal welfare)</li> <li>Plant sciences (including crop production, plant breeding, agroecology, soil biology)</li> <li>Food sciences (including food technology, nutrition)</li> <li>Forestry and biomass production (including biofuels)</li> <li>Environmental biotechnology (including bioremediation, biodegradation)</li> <li>Biomimetics</li> <li>Biohazards (including biological containment, biosafety, biosecurity)</li> </ul> </li> </ul>	