



Met Éireann Weather and Climate Research Programme

Call for Proposals



Met Éireann Research Call 2021

September 2021



1 Met Éireann Research Call 2021 - Important call information

1.1 Objectives

MET ÉIREANN Research Call 2021 is a competitive research call for proposals, open to all Higher Education Institutions in Ireland. Two research topics are of specific interest and are described below. For each topic, Met Éireann is looking for a team of at least one PhD student supervised by an established researcher to carry out a 4-year Project. A maximum budget of €600k per Project has been allocated.

1.1.1 Met Éireann Research Call 2021 – Topic #1: Climate Modelling Project

Improving EC-Earth's modelling of the North Atlantic Ocean-Atmosphere system

Ireland's climate is dominated by the influence of the North Atlantic Ocean-Atmosphere system. Variations in large-scale modes of atmospheric variability such as the North Atlantic Oscillation (NAO) drive climate variability in north-western Europe. The Atlantic Ocean also plays a crucial role in influencing Ireland's climate. The Atlantic Meridional Overturning Circulation (AMOC) transports vast quantities of warm surface water poleward, which in turn exerts a strong influence on the climate of the North Atlantic and Europe.

The core aim of this Project is to investigate and improve the representation of the North Atlantic Ocean-Atmosphere system in the <u>EC-Earth</u> Earth system model. EC-Earth is developed by a Europe-wide consortium and is closely aligned with ECMWF's seasonal forecasting system, in which the IFS atmospheric model is coupled with the NEMO ocean model. This Project will contribute to the on-going development of EC-Earth, in particular the next version of the model, EC-Earth v4.

It is envisioned that work in this area will focus on one or more of the following topics:

- EC-Earth's representation of the AMOC from 1850 to the present;
- EC-Earth's representation of surface cooling in the North Atlantic from 1850 to the present;
- Improving EC-Earth's modelling of the AMOC, which may include improving the model's representation of the Greenland Ice Sheet, sea ice processes, and air-sea interactions;
- High-resolution model runs to investigate the impact of resolving more small-scale atmospheric and oceanic processes;
- The impact of EC-Earth model improvements on modelling Ireland's climate;
- Downscaling EC-Earth v4 output to the North Atlantic and Ireland using a range of regional climate models.

It is also envisioned that the successful applicant will liaise closely with the EC-Earth consortium and establish links with the relevant EC-Earth working groups in the key areas identified here.

While contributing to the development of the EC-Earth model will constitute the core technical work of the Project, it is envisioned that the main output will be scientific research in the form of peer-reviewed publication and presentation at scientific conferences. Effective communication of the Project's findings will also be an essential component, as this has the potential to attract considerable public and media interest.







Funding will be provided on a discretionary basis by Met Éireann to a Grantee on the terms and subject to the conditions set out in Met Éireann Research Call 2021's Terms and Conditions to undertake a Project for a maximum of 4 years and a maximum budget of €600k.

1.1.2 Met Éireann Research Call 2021 – Topic #2: Model Coupling Project

Developing a fully coupled atmosphere-wave-ocean model system for Ireland

As an island nation where 40% of the population lives within 5km of the coast, accurate coastal weather forecasts are crucial for public safety (e.g. in terms of wind and wave forecasts, coastal flooding and surge forecasts). In the context of climate change, the expected increased impacts of extreme weather events and the continuation of offshore resource assessment studies also depend on an increase in near-surface parameter forecast accuracy (e.g. fluxes, precipitation, winds).

A fully coupled atmosphere-wave-ocean model is crucial in such developments and the aim of this Project is to build a coupled atmosphere-wave-ocean model based on the prototype cofunded by SEAI, the Marine Institute and Met Éireann. Thorough evaluations and verification will be expected to make the system pre-operational for Ireland. This research will require extensive testing and evaluation in order to ensure the robustness of the system both scientifically and technically.

The outputs of the SEAI, Marine Institute and Met Éireann funded research Project to develop a coupled atmosphere-wave-ocean model prototype will be made fully available to the research team. It is envisaged that the successful applicant will liaise closely with Met Éireann's Numerical Weather Prediction research team.

Some of the expected work of this research Project to deliver clear improvements in the "<u>HARMONIE-AROME</u>" model for Ireland include:

- Extensive testing of the coupled system across all seasons and for a wide range of case studies including winter storms, sea fog and other high impact weather;
- Tuning of parameters in surface and upper-air physics parametrisations;
- Getting the system running pre-operationally or in an e-suite;
- Involvement in international collaboration (e.g. HIRLAM and ACCORD consortia);
- Publishing scientific articles and comprehensive documentation.

While contributing to the development of HARMONIE-AROME model in the key areas identified will constitute the core technical work of the Project, it is envisioned that the main output will be high-quality scientific research as a result of this contribution in the form of peer-reviewed publication and presentation at scientific conferences. Effective communication of the Project's findings will also be an essential component, as this has the potential to attract considerable public and media interest.

Funding will be provided on a discretionary basis by MET ÉIREANN to a Grantee on the terms and subject to the conditions set out in the Research Call Programme's Terms and Conditions to undertake a Project for a maximum of 4 years and a maximum cost of €600k.





1.2 Dates

- Call open: Thursday 16th September 2021.
- Call deadline: Friday 22nd October 2021 at 17:00.
- The system will automatically prevent application submission after the deadline.
- Results expected: December 2021.

1.3 Submission platform

Please use the MET ÉIREANN grant platform to submit your application (best with Edge, Firefox or Chrome), following the instructions therein: https://meteireann.grantplatform.com/.

1.4 Support

If you have any questions on the application process, please contact MET ÉIREANN's Research Funding Office by email to researchfunding@met.ie.

2 Met Éireann Weather and Climate Research Programme

At the end of 2017, MET ÉIREANN launched its 10-year strategy "<u>Making Ireland Climate</u> and Weather Prepared".

Within the strategy, the following six strategic goals are identified:

- Enhance support for impact-based decision making for weather events;
- Provide climate information services which promote the safety of citizens and supports economic and environmental resilience;
- Deliver a high quality national flood forecasting service;
- Continue to provide an effective authoritative voice on meteorology in Ireland;
- Maintain and support an expert, professional workforce;
- Lead a modern, integrated meteorological infrastructure and support an enterprise environment for weather and climate services.

Research funding, a key component of MET ÉIREANN's 10-year strategy, is driven by the Programme for Government commitments, including investments required to support a research programme focused around addressing the societal challenges of climate change and extreme weather in a warming world.

MET ÉIREANN's Weather and Climate Research Programme underpins the expertise and knowledge needed to enable the delivery and continuous improvement of national predictive capability in the areas of weather, climate and hydrology and to ensure that, particularly in the climate context, research outputs provide the evidence and tools necessary to inform government policy.

MET ÉIREANN's Weather and Climate Research Programme's mission is to contribute to the development of national capacity and to address key scientific questions in response to the





challenges and opportunities facing Ireland from an extreme weather and changing climate's perspective.

MET ÉIREANN Research Call 2021 in particular is aimed at increasing national modelling capacity (e.g. climate modelling) and contributing to improvements in our understanding of climate change and its impacts and to the provision of high quality weather forecasts to key users and sectors.

MET ÉIREANN welcomes research in the spirit of diversity, inclusivity, cooperation, cocreation, collaboration, open data and multidisciplinarity.

3 Met Éireann Research Call 2021 - Requirement

The host organisation will be requested to hire a PhD student to receive training / gain expertise in modelling techniques and conduct research with the proposed research team for the duration of the Project. The PhD student's supervision will be requested to be provided by at least one member of the host organisation's staff (not necessarily the applicant).

Collaboration with leading international experts is desired.

4 Met Éireann Research Call 2021 - Governance Structure

To ensure each Project is implemented in line with best practice, Project steering committees of experts will be established. Prior to this, Project evaluation boards will be established to select the most appropriate research proposals.

5 Met Éireann Research Call 2021 - Estimated Budget

The following is an estimated budget per annum and per Project:

Established Researcher (recruitment + research consumables)	€100k
PhD Researcher (stipend + fees + research consumables)	€30k
Other research consumables (e.g. computing time)	€20k
Total	€150k

6 Met Éireann Research Call 2021 - Indicative Project timelines

The following are Met Éireann Research Call 2021's indicative timelines:







Q3 2021	Publish Research Call 2021
Q3 2021	Evaluate proposals
Q4 2021	Award contracts
Q1 2022	Successful applicants begin Projects
2022 - 2025	Projects ongoing
Q4 2025	Projects delivered

7 Met Éireann Research Call 2021 - Additional information

7.1 Supporting Data

Applicants should provide evidence that existing datasets are available and accessible (either reference open databases, or provide a statement of ownership or letter from the data owner to say it will be made available). All Project proposals must clearly define the research question, methodology, expected outputs, expected impact and dissemination activities. For MET ÉIREANN hosted data, the relevant members of MET ÉIREANN staff should be contacted prior to submission to ensure availability (contact researchfunding@met.ie if you require specific information/contact details).

7.2 Duration of Project

The Projects may be up to 48 months' duration¹. The proposed Projects' duration must be appropriate for the Project described. Projects are expected to start in early Q1 2022 with a latest possible start date of late Q1 2022.

7.3 Host institute and location

The Host Institute must be a Higher Education Institute in Ireland, however, as the research Projects will be components of a larger research programme, member(s) of the successful team may be required to be located and/or attend for meetings in one the MET ÉIREANN offices (and/or remotely whenever required) an estimated 20% minimum of their time for the duration of the Project. This is to ensure integration of the research activities and outputs into the wider programme, and also to provide access to the facilities and data required.

¹ There may be an option to extend the project in which case a decision will be based on the annual reports submitted and a full review at month 48 and an assessment of the overall outputs and needs of the Project at that time. All initial project descriptions must be limited to 48 months.







7.4 Definitions

Project – the Project is the overall research Project as proposed by the Applicant. It should be of sufficient scale to deliver the research outputs and include nominated staff positions (e.g. Postdoctoral Researchers) as appropriate for the work.

Host organisation – this must be a Higher Education Institute in Ireland². Valid tax clearance certificates must be supplied on request.

Applicant – the Applicant is the person responsible for submitting, leading and managing the Project. They must be employed or planned to be employed in the host organisation and will act as the primary point of contact. They must hold a qualification/have relevant experience in the aspect of the work to be undertaken (this must be demonstrated in their CV).

Collaborators – Collaborators have a specific role in the Project but do not receive funding. They may be providing expertise, data etc. as appropriate to support the Project.

Authorised person – the Application must be signed by the Research Office/Authorised Official of the host organisation. The signature indicates the organisation's willingness and ability to host the award in terms of financial, human and physical resources required.

7.5 Eligibility

All criteria listed in the definitions must be adhered to.

Applications from researchers who are currently outside Ireland are only eligible if the Applicant will be physically and administratively hosted in an organisation in Ireland, full-time, for the duration of the award.

CVs for the Applicant and each Collaborator must be submitted with the proposal and must demonstrate the ability of each to carry out their responsibilities within the Project.

7.6 Researcher profile and CVs

The Applicant must attach a CV which should be no longer than 4 pages and must include:

- Contact details
- Recent employment history
- Academic qualifications or equivalent experience
- Publications
- Other information relevant to the proposal*

² As recognised by https://hea.ie/higher-education-institutions/. For any clarification please contact researchfunding@met.ie.







Collaborators must attach a CV which should be no longer than 4 pages and must include:

- Contact details
- Recent employment history
- Academic qualifications or equivalent experience
- Key Publications
- Other information relevant to the proposal*
- *For all information regarding funding secured to date:
- You must clearly state your role in any Project listed (Lead/PI/Partner)
- If you were an unfunded collaborator this can be included but it must be clearly stated you were not funded.
- Any funding awarded/decision pending must clearly state how much funding has been/may be awarded to the Applicant and not the total value of the Project to the whole consortium or institute.

Misrepresentation of research grants awarded/pending is considered a serious breach of ethics and terms and conditions. Any misleading information found in applications for funding will result in the application being returned without review. Information provided may be queried with other named funding agencies if necessary.

7.7 Submission

The call comprises a one stage application process. Full proposals must be submitted using the https://meteireann.grantplatform.com/ submission platform before the call deadline. Any applications not adhering to submission and formatting rules, or received after the deadline, will be deemed ineligible and will not be reviewed.

Proposals must be submitted by 5pm, Friday October 22nd 2021.

7.8 Format and Layout

Text font in the file submitted should be no smaller than Arial 11 with page margins no less than 2.5cm. All word limits outlined in the application template must be adhered to. Only PDF files will be accepted. Any pages beyond the limit will be excluded from review.

7.9 Budgets

All values must be presented in Euro. Maximum allowable budget per Project (including up to 30% contribution to indirect costs) is €600k.





7.10 Eligible costs

Examples of eligible costs (list not exhaustive)

- Total salary costs of the team members (including all pension, taxes etc.)
- Consumables (e.g. access fees)
- Software licenses
- · Publication fees
- Travel
- Indirect costs

Examples of non-eligible costs (list not exhaustive)

- Salary/staff costs for other staff in the Host or Collaborator organisations (including mentors)
- Maintenance contracts
- Office equipment/furniture
- Durable equipment

If there are any queries regarding eligible and non-eligible costs please contact researchfunding@met.ie before submitting your proposal.

Financial reports signed by the Institute finance office will be required annually. Payments will only be made once these are received and approved by MET ÉIREANN.

Projects can be co-funded by cash/in-kind contributions from Collaborator organisations though this is not a requirement; in such cases, the total cost of the Project including the partner contributions and MET ÉIREANN funds requested must be included.

In-kind contributions can include personnel time, access to facilities, access to existing data, etc.

7.11 Budget Justification

This section should clearly justify the planned expenditure including expected timings.

7.12 Reporting

The Project must be completed within the designated time. Annual reviews will be scheduled before the start of the Project. These will include written activity and financial reports. In addition to the reports submitted as required deliverables throughout the Project, a final report summarising the Project's results must be submitted at the end of the Project. Failure to submit these reports on time will result in payments being withheld and/or exclusion from subsequent MET ÉIREANN calls. Reporting templates will be provided.





As part of the reporting procedures, successful applicants may be asked to present their results (oral or poster presentation) at MET ÉIREANN event(s).

If the annual reports indicate that the Project is (i) not adhering to the terms and conditions, (ii) is significantly behind schedule, and/or (iii) is not adhering to the Projects described in the contract, MET ÉIREANN reserves the right to withdraw funding.

Additional costs may be requested if clearly justified however, funding is not guaranteed. Please contact researchfunding@met.ie if you have queries.

7.13 Project description

This section is a maximum of 6,000 words excluding figures, headings and references and should comprise:

- (i) Strategic context and rationale for the Project including background information, state of the art and reasons for addressing the issue now. The Project should also clearly demonstrate how the results of the research will be incorporated into the wider programme of work in $\underline{\text{MET}}$ $\underline{\text{ÉIREANN's Strategic Plan 2017 2027}}$, and/or how the research will bring added value to that programme.
- (ii) Objectives and scientific/engineering targets beyond the state of the art. This should outline how the Project will expand our knowledge beyond current understanding and clearly outline the objective of the planned work.
- (iii) Methodology & Implementation plan should include the approach to be used along with timelines, milestones for the Project and any information relevant to the efficient management of the Project.
- (iv) Outputs. The outputs should be well defined, ambitious and realistic. They should link clearly to the milestones and timing of the Project as well as the budget. Details must be provided alongside some examples, e.g.
- New models,
- New digital data set(s),
- Development of new methods, equipment, techniques, technology or cross-disciplinary applications, and
- Presentations at international conferences and publications in high impact journals.

7.14 Expected impact

This section is a maximum of 2,000 words excluding figures. The outputs of the Project will be expected to be integrated into the wider MET ÉIREANN's Strategic Plan 2017 – 2027 and activities. Details of how this can be achieved must be included.







This section should also comprise any additional impacts; positive impacts on two or more of the following should be described;

- · Scientific discovery,
- Development of new methodology/toolkits,
- Development of new software/prototypes, and/or
- Significant contribution to policy and governance.

This section should clearly show how the Project will impact these areas and whether the expected impact is short, medium or long term.

7.15 Communication and dissemination plan

Dissemination of the Project outputs are expected as standard and a clear communication plan should be clearly described including timing of known conferences, events, outreach activities, etc. This section is a maximum of 2,000 words.

7.16 Review process and criteria

Once received, all applications will be checked for eligibility. Projects that are deemed ineligible, beyond the scope of the call, or not responding to Project requirements will not be reviewed. Eligible applications will be reviewed by experts and assessed under the following criteria:

- Quality of Scientific/Engineering Project described (40%);
- Impact (25%);
- Quality of the proposed team including Applicant and Collaborators (25%);
- Implementation, management plan and value for money (10%).

Please remember, the review panel will include international experts who may be unfamiliar with specific Irish acronyms etc.

The review panel will also include a senior member of the MET ÉIREANN Weather and Climate Research Call Programme team to ensure relevance to the Programme. For this reason Applicants may not contact MET ÉIREANN staff to solicit information, lobby or discuss potential Project applications. All queries must be directed to the MET ÉIREANN's Research Funding Office at researchfunding@met.ie. Applicants breaching this rule will be deemed ineligible.





7.17 Ethics

All proposals are expected to adhere to standard ethics rules (see EU ethics page³). Where organisational ethics guidelines are in place, the Applicant is expected to adhere to their ethics committee's guidelines.

7.18 Open research policy

MET ÉIREANN and the Department of Housing, Local Government and Heritage support the National Open Research Forum policies. Applicants are expected to follow the National Framework on the Transition to an Open Research Environment, including open access to publications and data. Applicants are expected to comply with the "Open Data and Re Use of Public Service Information (PSI) Directive"⁴ and relevant Statutory Instruments.

7.19 Non compliance

Where proposals or awards are found to be non-compliant as per these Terms and Conditions or in breach of Contract, Projects will be deemed ineligible (at initial review stage) or funding may be withdrawn.

7.20 Confidentiality

All applications and subsequent correspondence with applicants will be treated as confidential and will follow GDPR regulations. By submitting your application you are agreeing to the Department of Housing, Local Government and Heritage's GDPR policy.⁵

7.21 Acknowledgement

MET ÉIREANN, the Department of Housing, Local Government and Heritage and the Government of Ireland must be clearly acknowledged in all activities and outputs including publications, conference presentations, reports, events, etc. Logos will be made available and must be included in all dissemination and communication activities. Met Éireann funded researchers are required to present their projects at a Met Éireann event. All dissemination and communication activities must be recorded and included in the final report. Project outputs, dissemination activities and achievements may only be incorporated into non-Met Éireann reports if included as an 'associated project' and duly acknowledged. It must be made clear in all references to the Project's activities that the work is funded by MET ÉIREANN. Both MET ÉIREANN and the Grantee will agree on a text at the start of the Project to be included in all disseminations and communications, subject to review.

7.22 Intellectual property and data management

Foreground Intellectual Property (IP) will remain with the Grantee, however, where research or product(s)/service(s) result from MET ÉIREANN Research Funding, the Grantee shall, upon request from MET ÉIREANN, provide MET ÉIREANN with a perpetual, royalty free, non-

⁵ Available upon request



³ https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/ethics_en.htm

⁴ http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=uriserv:OJ.L .2019.172.01.0056.01.ENG





exclusive license to the outputs of the Project. Where data is collected as part of a MET ÉIREANN funded Project, a copy of the raw data must be provided to MET ÉIREANN and, where relevant, standard data formats should be used (e.g. INSPIRE). Specific terms and conditions relating to data use and data storage will be determined before the start of the Project on a case by case basis.

7.23 Programme management

Any queries regarding the application process or Project description should be submitted by email to researchfunding@met.ie.





APPENDIX 1 - Online Application Form

Go to: https://meteireann.grantplatform.com

Register/Login as a user

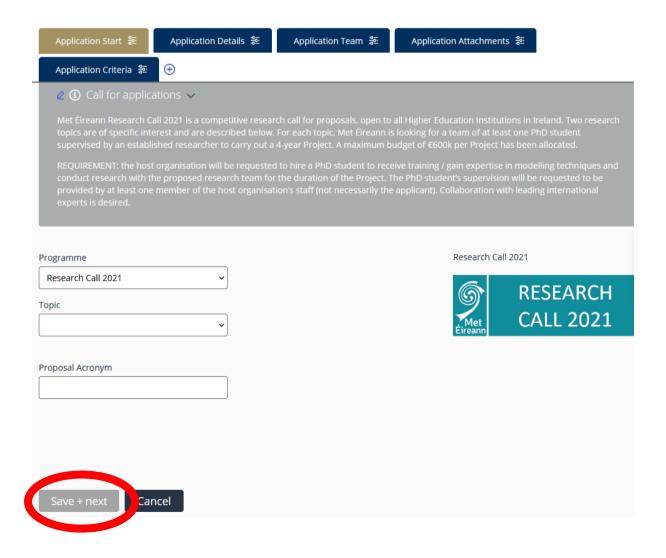
Click on "Start Application"

1. Application Start

- 1.1. Choose your Topic
- 1.2. Enter a Proposal Acronym

IMPORTANT:

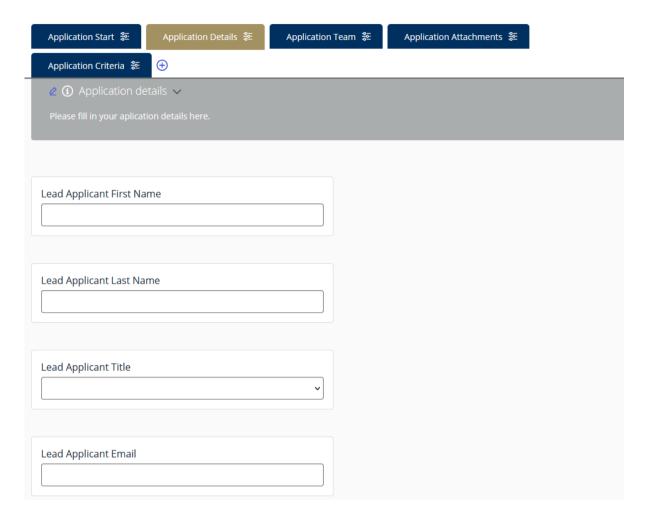
1.3. Click Save + Next





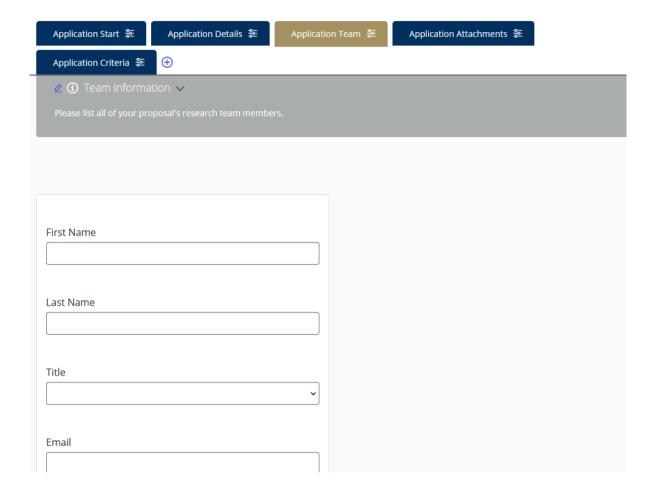


2. Application Details



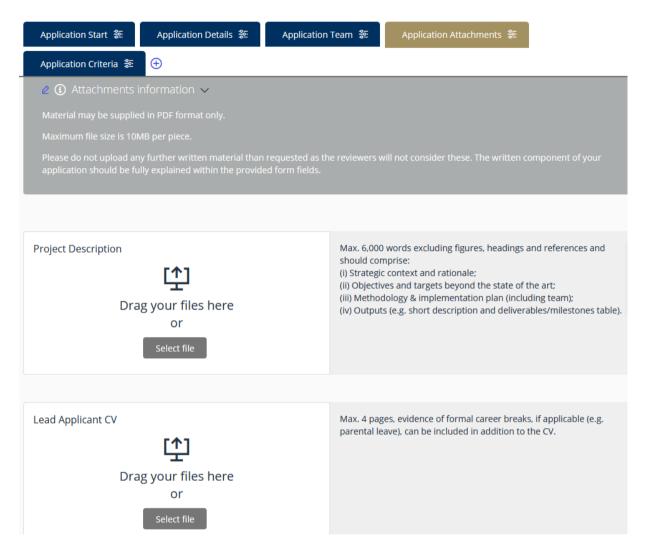


3. Application Team



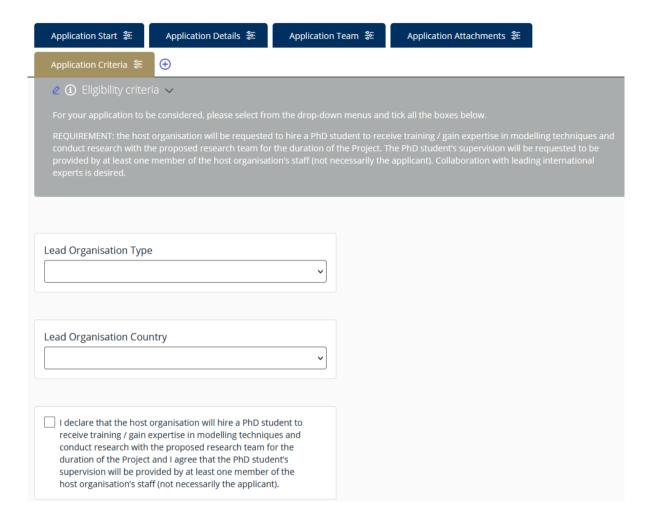


4. Application Attachments





5. Application Criteria



6. Submit Application

Any queries regarding the application process or Project description should be submitted by email to <u>researchfunding@met.ie</u>.





APPENDIX 2 - Frequently Asked Questions

1. Are salaries eligible costs?

Personnel costs for the researchers carrying out the research are eligible. The total cost should include all pensions and PRSI contributions but not indirect costs (these are listed separately in the budget). All salary costs should be in-line with IUA salary scales (https://www.iua.ie/for-researchers/researcher-salary-scales-career-framework/). A contribution to stipends and fees for students is allowable but must be in line with all Host Organisation HR practices.

2. Are overheads/indirect costs an eligible cost?

Yes, up to a maximum of 30% of total direct costs

3. Can researchers outside the Republic of Ireland (RoI) be funded?

Researchers who currently reside outside the RoI are eligible to apply but must be living in the RoI for the duration of the Project and physically based at the Host organisation/MET ÉIREANN (excluding short term visits to other institutes).

4. Can researchers outside Ireland be collaborators/partners?

Yes, there is no limit to the number or type of collaborator but they cannot receive funding.

5. Is the lead applicant interviewed by MET ÉIREANN's reviewers?

No, the Applicant is expected to provide evidence (e.g. in their CV) of their suitability to deliver this proposed Project.

6. Can the award be moved if the Applicant changes Institute?

Yes, but only with the agreement of both Host organisations and MET ÉIREANN. The new Host organisation must also fulfil the criteria as per the Terms and Conditions.





7. Will my Project be assessed more favourably if it has external co-funding?

No. Assessors will be asked to consider the overall Project proposed and whether resources are appropriate.

8. Is VAT an allowable cost in the budget for items such as consumables?

Yes.

9. Can underspend from an individual year be carried forward?

Part of the budget for an individual year can be carried if justified. MET ÉIREANN must be informed of any planned changes to the budget.

10. Is a computer considered durable equipment (and therefore not an eligible cost)?

If the Host Organisation considers computers a consumable or assigns a lifespan of less than one year, then it is an eligible cost.





APPENDIX 3 – MET ÉIREANN's Strategic Plan 2017 - 2027

Please read:

https://www.met.ie/cms/assets/uploads/2017/08/Met_Eireann_Strategy_2017-2027.pdf.

