**IRISH RESEARCH COUNCIL**
**An Chomhairle um Thaighde in Éirinn**

**Government of Ireland Postgraduate Scholarship Scheme 2017:**

**Indicative Applicant Form**

This Word document is provided solely for information purposes. All applicants must create and complete their submission through the online system by the deadline of **16:00 (Irish time) on 2 November 2016.** Please see the **2017 Terms and Conditions** and **Guide for Applicants** on the Irish Research Council website for further information prior to submitting your application online. All sections must be completed in full.

| Eligibility Quiz |
|---|

| Does your proposed research deal with any of the following prohibited areas? |  |
|---|---|
| <ul><li>Research activity aimed at human cloning for reproductive purposes</li><li>Research activity intended to modify the genetics of human beings that could make such changes heritable (with the exception of research relating to cancer treatment of the gonads, which may be funded)</li><li>Research activities to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer</li></ul> | |
| Yes | |
| No | ☐ |

| Have you had two previous unsuccessful applications to the Government of Ireland Postgraduate Scholarship scheme (including strategic partner themes, applications to the EMBARK Scheme previously run by the Irish Research Council for Science, Engineering and Technology and the Government of Ireland Scholarship Scheme previously run by the Irish Council for Humanities and Social Sciences)? | |
|---|---|
| Yes | |
| No | ☐ |

| Do you have a first class or upper second-class honours bachelor's (or equivalent) degree? If examination results are not known at the time of application, the Council may make a provisional offer on condition that the applicant's final grade for their bachelor's (or equivalent) degree is a first class or upper second-class honours. | |
|---|---|
| Yes | |
| No | |
| Bachelor's degree results unknown at time of application | ☐ |

| *If no:* Do you have a master's degree? | |
|---|---|
| Yes | s |
| No | ☐ |

## Applicant Details

| Select the appropriate scholarship theme for which you are applying: | |
|---|---|
| Government of Ireland Postgraduate Scholarship | ☐ |
| Andrew Grene Postgraduate Scholarship in Conflict Resolution | |
| Environmental Protection Agency Postgraduate Scholarship | |
| Department of Children and Youth Affairs Growing Up in Ireland Postgraduate Scholarship | |

| Application in Irish: | |
|---|---|
| Yes | |
| No | ☐ |

*There is an option on the system at this point to upload an English translation should you wish to do so. This will accompany your research proposal. The system will only accept documents in PDF format.*

Name: John Cosnett

Email address: j.cosnett1@nuigalway.ie

Contact telephone number: 087 9297553

Contact address: Drumcortha, Killeshandra, County Cavan, Ireland, H12 HY22

| Gender: | |
|---|---|
| Male | ☐ |
| Female | |

Date of birth: 03/07/1993

ORCID ID*: 0000000295469754*

*ORCID ID provides a persistent digital identifier that distinguishes you from every other researcher. If you do not currently have an ORCID ID, please register for one at www.orcid.org and provide us with your unique 16-digit identifier*

| What is your nationality, i.e. your passport-issuing country? |
|---|
| Ireland |

| Are you a national of a European Economic Area (EEA)* member state or Switzerland? | |
|---|---|
| Yes | ☐ |
| No | |

*\*The EEA comprises the EU member states together with Iceland, Norway and Liechtenstein*

| Will you have been ordinarily resident* in an EEA member state or Switzerland for a continuous period of three of the five years preceding 1 October 2017? | |
|---|---|
| Yes | ☐ |
| No | |

<span style="color:red">*'Ordinarily resident' denotes your place of legal and permanent residence</span>

| Will you be a new entrant to the degree for which you are seeking Council funding? | |
|---|---|
| Yes | ☐ |
| No | |

| *If yes:* Please specify the scholarship type for which you are applying: | |
|---|---|
| 12-month Research Master's | |
| 24-month Structured Research Master's | |
| 36-month Traditional Doctoral Degree | ☐ |
| 48-month Structured Doctoral Degree | |

| *If no:* Please specify the degree type for which you are currently registered: | |
|---|---|
| 24-month Structured Research Master's | |
| 36-month Traditional Doctoral Degree | ☐ |
| 48-month Structured Doctoral Degree | |

| *If no:* What date did you first register for this degree? |
|---|
| <span style="color:blue">30/05/2014</span> |

<span style="color:red">It is important that the information in this field is entered correctly as the duration of funding awarded is dependent on the date of first registration</span>

| *If no:* Please select your current funding source: | |
|---|---|
| Self-funded | |
| Student Universal Support Ireland grant | ☐ |
| Higher education institution-funded bursary or scholarship | |
| Central Remedial Clinic Ciaran Barry Graduate Scholarship | |

| *If no:* Please provide further details in relation to this funding source, including duration: |
|---|
| |

| *If no:* Please indicate the duration of scholarship for which you are applying: | |
|---|---|
| 12 months | |
| 24 months | |
| 36 months | ☐ |

| Will you be in receipt of any additional awards during the scholarship period, e.g. travel bursaries, equipment grants, etc.? | |
|---|---|
| Yes | |
| No | ☐ |

| *If yes:* Please provide further details: |
|---|
| |

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| Do you currently hold, or have you previously held, any other Irish Research Council awards? | |
| --- | --- |
| Yes | |
| No | ☐ |

*If yes:* Please provide further details:

<div style="color:red">
Applicants for a Research Master's Scholarship must not currently hold, or have previously held, a Council Postgraduate Scholarship. Applicants for a Doctoral Degree Scholarship must not currently hold, or have previously held, any Council Postgraduate Scholarship other than that which would enable them to obtain a Research Master's Degree
</div>

## Academic Supervisor Details

**Primary Academic Supervisor:**

Name: Dr. Nicholas Devaney

Institution: National University of Ireland, Galway

Email address: nicholas.devaney@nuigalway.ie

**Secondary Academic Supervisor (if applicable):**

Name:

Institution:

Email address:

## Referee Details

**Referee 1**

Name: Dr. Nicholas Devaney

Organisation or institution: National University of Ireland, Galway

Position: Lecturer

Email address: **nicholas**.**devaney**@nuigalway.ie

**Referee 2**

Name:

Organisation or institution:

Position:

Email address:

## Academic Qualifications

**Bachelor's Degree**

Institution: National University of Ireland, Galway

Graduation date:

31 AUG 2018  MAYBE NOV 2018

Qualification type and name:

BPT1 Bachelor of Science (Physics) Applied
 (School of Physics)

Final grade or grade point average: 74.58%

Examination results as detailed here must correspond with those on official transcripts

Any additional information relating to this degree can be included here, e.g. dissertation title, area of study:

*Max 300 words*

## Second Bachelor's Degree (if applicable)

Institution:

Graduation date:
dd/mm/yyyy

Qualification type and name:

Final grade or grade point average:

<p align="right" style="color:red">Examination results as detailed here must correspond with those on official transcripts</p>

Any additional information relating to this degree can be included here, e.g. dissertation title, area of study:

*Max 300 words*

## Master's Degree (if applicable)

| Type: | |
|---|---|
| Taught | ☐ |
| Research | ☐ |

Institution:

Graduation date:
dd/mm/yyyy

Qualification type and name:

Final grade or grade point average:

<p align="right" style="color:red">Examination results as detailed here must correspond with those on official transcripts</p>

Any additional information relating to this degree can be included here, e.g. dissertation title, area of study:

*Max 300 words*

**Second Master's Degree (if applicable)**

| Type: | |
|---|---|
| Taught | ☐ |
| Research | ☐ |

| Institution: |
|---|
| |

| Graduation date:<br>dd/mm/yyyy |
|---|
| |

| Qualification type and name: |
|---|
| |

| Final grade or grade point average: |
|---|
| |

<div align="right" style="color:red">Examination results as detailed here must correspond with those on official transcripts</div>

| Any additional information relating to this degree can be included here, e.g. dissertation title, area of study:<br><br>*Max 300 words* |
|---|
| |

**Other Education**

Please provide any additional information relevant to your academic background which should include the name, location and date(s) of any training courses attended:

*Max 300 words*

**Research Achievements**

Please provide any additional information regarding your research achievements to date such as publications, research awards, creation of data sets and databases, conference papers, patents, excavations, public broadcasts, stage performances, creative writing, creative productions and/or exhibitions:

*Max 500 words*

**Work Experience**

Please provide details of any relevant work experience, including voluntary work, to date which should include employers' names, job titles, nature of duties and responsibilities, as well as duration of employment:

*Max 500 words*

## Proposed Research

Project title:

Detection of Exoplanets using Deep Neural Networks

*Max 100 words*

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Higher education institution:

: National University of Ireland, Galway
School of physics,
Applied Optics Group

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Department:
: Applied Optics Group

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Primary area: : Physics

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Discipline: Physics

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Other research area(s):  Astronomy, Computer Science, Optics, Speckle

*Please consult the research categorisation document available on the Irish Research Council website for further descriptions of primary area, discipline and other research area*

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Second categorisation – if interdisciplinary: Machine Learning

*If your proposed research is interdisciplinary, please list the second categorisation here, i.e. primary area, discipline and other research area*

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Keywords describing proposed research:

: Deep Learning, Artificial Neural Networks, Exo-astronomy, Optics, Data Analytics, Coronagraph Optics,

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Please provide an abstract for your proposed research:

*Max 300 words*

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Please provide a <u>lay abstract</u> for your proposed research, which will be used to inform a non-expert audience:

*Max 300 words*

Please provide <u>details of your proposed research</u> to include (a) aims, objectives and central research questions of the project, (b) how existing literature on the topic has been used to inform the proposal and (c) how the project will advance state of the art and make a contribution to existing knowledge:

*Max 500 words*

Please detail the <u>research design and methodologies</u> to be employed in carrying out your scholarship which should be described in sufficient detail to demonstrate your thorough understanding of the research topic:

*Max 500 words*

Please provide a <u>schedule</u> to include (a) milestones and deliverables for completion of the proposed research, (b) risks that might endanger reaching these deliverables and (c) the contingency plans to be put in place in order to mitigate these risks:

*Max 500 words*

Please describe any <u>specialist knowledge or data</u> required to undertake your proposed research, such as language competency, technical skills or use of specialist software. If this knowledge or data is not already in place, details should be provided as to how it will be acquired over the course of the scholarship:

*Max 500 words*

Please outline your plans for the <u>dissemination and knowledge exchange</u> of your research, including publications, conference attendance, poster presentations, reports and outreach activities. Details should also be provided as to how the impact of your research will be measured:

*Max 500 words*

Please outline the reasons for choosing your proposed <u>higher education institution:</u>

*Max 400 words*                                                                                    21

Please outline the reasons for choosing your proposed <u>academic supervisor(s):</u>

*Max 400 words*                                                                                          22

Please provide details of any proposed research trip(s) of more than four weeks' duration which you believe will be necessary for the successful completion of your scholarship:

*Max 300 words*

**PLEASE NOTE: The following question applies ONLY to applicants for an Andrew Grene Postgraduate Scholarship in Conflict Resolution, EPA Postgraduate Scholarship or DCYA Growing Up in Ireland Postgraduate Scholarship. It does NOT apply to applicants for the Government of Ireland Postgraduate Scholarship.**

| |
|---|
| Please outline the reasons for choosing your specific theme, including how your proposal explicitly aligns with the theme statement and specific requirements as included in the relevant appendix of the 2017 Terms and Conditions:<br><br> *Max 500 words* |

There is an option on the system at this point to upload any supplementary information, e.g. diagrams or bibliography, to accompany your research proposal. The system will <u>ONLY</u> accept supplementary material in PDF format. Supplementary material should only include essential information required for the interpretation and understanding of the proposed research, rather than additional information about the research proposal or applicant. Supplementary material will not be included in the application word count

| | |
|---|---|
| Have you previously submitted all or part of this proposal to an Irish Research Council scheme and been unsuccessful? | |
| Yes | |
| No | ☐ |

| |
|---|
| *If yes:* Please clearly describe the modifications to your research proposal since it was previously submitted: |

Please note that unsuccessful applicants may only re-apply to the scheme on one subsequent occasion (with effect from 21 October 2009)

**Career Training and Development Plan**

| |
|---|
| Please provide a career training and development plan which addresses the following:<br><br>• What are your career goals and how would this scholarship help you to achieve them?<br>• How will you go about acquiring the expert knowledge and transferable skills necessary for your professional development, e.g. technical skills, communication skills, analytical skills?<br>• How would this scholarship enable you to gain skills relevant to employment outside the traditional academic sector?<br><br>*Max 1000 words* |

## Personal, Ethical and Sex/Gender Statements

**Personal Statement**

Please highlight any additional information which has not been included elsewhere in the application, e.g.:

- Why do you wish to pursue a higher degree by research?
- Why have you proposed this research topic?
- Why do you feel there is a specific demand for the skill set that you wish to build?
- Why are you particularly suited to this research field?
- Which of your attributes demonstrate your capability to be a good researcher, e.g. motivation, commitment, thirst for knowledge?

*Max 500 words*

**Ethical Statement**

| | |
|---|---|
| Does your research involve any of the following ethical issues of special relevance? | |
| Informed consent | |
| Human embryonic stem cells | |
| Privacy and data protection | |
| Use of human biological samples and data | |
| Research on animals | |
| Research in developing countries | |
| Dual use (possible military/terrorist application) | |
| None of the above | ☐ |

| | |
|---|---|
| Does your research proposal require approval by the relevant institutional Ethics Committee? | |
| Yes | |
| No | ☐ |

<span style="color:red">Please note that a full ethical report and approval from the relevant institutional Ethics Committee should be received by the Council before activities for which ethical approval are required commence or no later than three months after the start date of the scholarship</span>

| |
|---|
| Please provide a statement detailing the careful consideration you have given to the ethical implications of the proposed research (where ethical issues may arise) and how you plan address these over the course of your scholarship:<br><br>*Max 500 words* |

**Sex/Gender Dimension Statement**

| | |
|---|---|
| Does your research involve any of the following? | |
| Humans as the research focus | ☐ |
| Animals as the research focus | ☐ |
| Human samples and/or data | ☐ |
| Humans involved as consumers, users, patients, or in trials | ☐ |
| Research on animals, animal samples and/or data | ☐ |
| Research outputs with implications for end users or consumers | ☐ |

| |
|---|
| Please provide a statement detailing whether there is a potential sex/gender dimension to be considered in carrying out your research. If your research involves any of the above, please indicate how potential sex/gender issues will be handled. In particular, you are asked to reference the points mentioned in the 'checklist for sex/gender in research content' in the Guide for Applicants:<br><br>*Max 500 words* |

## Financial Justification

- Please provide the total cost for the <u>full</u> duration of the scholarship.
- The exact amount of eligible direct research expenses to be allocated is subject to sufficient justification being made. An itemised breakdown of costs is required, e.g. separately list the cost and justification for individual pieces of computer equipment and software. Small consumables can be grouped as one item, e.g. general lab or stationery supplies.
- Software and hardware must be obtained within the first year of a scholarship or within the first three months of a 12-month award. Aside from this exception, funds may not be used to purchase capital items.
- A maximum amount of €2,250 *per annum* applies.
- There is a limit of €1,000 for computers or laptops.
- Membership costs are not eligible.
- Living costs, e.g. rent, are not essential direct research expenes and should not be included.
- Subsistence/per diem/meal costs/vouched expenses for meals and drinks are not an eligible cost.

| Essential direct research expenses: | Total cost requested for the funding term: | Please provide a full justification and itemised breakdown for all costs requested: |
|---|---|---|
| Essential research supplies such as small consumables: | | |
| Pay-as-you-go access to national research infrastructure: | | |
| Software and hardware critical for the proposed research: | | |
| Archival research costs: | | |
| Conference travel and participation: | | |
| Generic and/or specialist disciplinary skills training: | | |
| Publishing and write-up costs: | | |
| Other costs: | | |
| **Total:** | | |

## Applicant Declaration

| I hereby declare that I have read and accept the applicant requirements as set out in the 2017 Terms and Conditions and Guide for Applicants on the Irish Research Council website: |
|---|
| I agree ☐ |

| I confirm that the information supplied in this application is correct and recognise that should it become apparent that any of the information provided is inaccurate or unverifiable with appropriate documentation, it will result in the application automatically being deemed ineligible: |
|---|
| I agree ☐ |

| I hereby declare that this application is my own work and understand that it will be subject to plagiarism checks: | |
|---|---|
| I agree | ☐ |

| Would you like the Irish Research Council to make your application available to other funding agencies and/or enterprise partners for consideration? | |
|---|---|
| Yes | ☐ |
| No | |