



Irish Cancer Society Research

Guidelines for Applicants

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Irish Cancer Society Summer Studentship 2021 - Translational Research

General Introduction to the Irish Cancer Society Summer Studentship Awards 2021

The Irish Cancer Society is now accepting applications for the Summer Studentships 2021 programme.

The objective of the Irish Cancer Society Summer Studentships is to offer excellent undergraduate students the opportunity to undertake a cancer research project and to work with researchers in high-quality research environments.

There are **four** summer studentship awards available: **two translational biomedical science** summer studentships and **two social, nursing, and allied health sciences** summer studentships. Applicants can only apply for one type of studentship award.*

Applications to the summer studentships are accessible through the Irish Cancer Society Gateway Grant Tracker online system. Please ensure that you are using the correct application that is relevant to the specific field of your research.** This document outlines the process for applying to the translational biomedical science summer studentships only. Further details on how to apply for the social, nursing and allied health sciences studentship and other grants are available on our website.

***Note:** Applicants that submit applications to both awards will be rejected. If you are unsure of which award category is applicable to your project, please contact grants@irishcancer.ie before Thursday the 11 February and we can advise.

****Note:** Applicants that apply using the incorrect application form for their specific field of research (i.e. translational or social and allied health sciences) will be rejected.

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Irish Cancer Society Summer Studentship 2021 - Translational Research

1. Introduction:

1.1. Overview

The Irish Cancer Society Translational Research Summer Studentship 2021 programme offers undergraduate students (who are not in their first or final year) the opportunity to undertake a translational biomedical-based cancer research project* and to work with researchers in high-quality research environments. Given the ongoing Covid-19 pandemic, 'virtual', non lab-based projects will also be considered for this award, once they fulfil all eligibility criteria. This programme is open to students undertaking a biomedical or life science degree. This programme will give students the opportunity to gain research experience at an early stage in their career path.

1.2. Objectives

The objective of this studentship programme is to provide students with the opportunity to conduct a small translational biomedical-based cancer research project (see section 2.3 for more information) in an experienced research laboratory or virtually, with the support and training provided by experienced researchers. Upon completion of the project, the students will gain both practical research experience and an insight into the biomedical cancer research environment.

Following the completion of the studentship, the student is required to provide the Irish Cancer Society with a written scientific report and a financial report from the finance office of their host institution.

1.3. Funding

The total amount available is €2,500 to support the student for a maximum period of eight weeks. Payment to the student throughout the project will be made through the host institution. There are two Translational Research Summer Studentships available in 2021.

*This award is for translational biomedical-based cancer research projects only. Any social, nursing or allied health scientists seeking to undertake a non-biomedical-based project should consider applying for the Social, Nursing and Allied Health Sciences Studentship.

1.4. Timeframe

Thursday 14 January 2021	Opening of call for applications
Thursday 11 February	Deadline for project eligibility queries
3pm Thursday 25 February 2021	Deadline for online submission of applications
Early-March 2021	Detailed review of applications
Early-April 2021	Outcome announced

2. Eligibility Criteria

2.1. Lead applicant (student)

The student is responsible for preparing the application with support from their supervisor. Applications from individuals that do not meet the eligibility criteria will not be assessed. We therefore strongly recommend you carefully read the following eligibility criteria and become familiar with the studentship requirements.

The eligible lead applicant **must** fulfil the following criteria:

- You must be a full-time or part-time undergraduate student in the second or third year of your degree;
- You must be studying for a biomedical or life science degree;
- You must be planning to work on a translational biomedical-based cancer research project that will be laboratory-based or virtual;
- You must be based in a university/third level institute in the Republic of Ireland;
- You must have the support of an appropriate, suitably-qualified supervisor in a university/third level institute within the Republic of Ireland;
- You must identify a suitable host institution to administer the award. This must be the university/third level institution of your academic supervisor;
- You must undertake the studentship on a full-time* basis for a maximum of eight weeks during the summer of 2021.

* **Note:** Both full-time and part-time students must be able to undertake the studentship on a full-time basis for a maximum of eight weeks during the summer of 2021.

The lead applicant **must not** fulfil the following criteria, and will be deemed ineligible:

- Be in the first or final year of your undergraduate degree course;
- Have previously conducted a Masters or PhD;
- Have held an Irish Cancer Society Summer Studentship previously;
- Hold a summer studentship/internship/scholarship from another organisation at the same time during the summer of 2021.

Note: *Each student can only make one application to this studentship programme in this round. Where two applications are received from the same applicant both will be deemed ineligible. Where two students submit the same projects under the same supervisor in this round, both projects will be deemed ineligible. Applications that do not meet the eligibility criteria or do not meet the remit of the award will be deemed ineligible.*

2.2. Academic Supervision

Supervision must be by a suitably-qualified individual with a good research track record. The academic supervisor must be affiliated to a university/third level institution within the Republic of Ireland.

Supervisors are eligible to supervise a summer student once they have appropriate experience. Supervisors must have a minimum of four years active research experience (career breaks, flexible working arrangements, change of disciplines or sector, etc., will be taken into consideration) and a good scientific track record. They must be in their current post for the duration of the proposed project and have secured the support of their institution.

The supervisor must guide the student during the studentship period so that they acquire the necessary skills to conduct the research project. The student is required to complete the proposed work and write a concise scientific report within the studentship timeframe.

2.3. Translational Research Project

Translational biomedical research can be defined as “bench to bedside” or patient-focused biomedical research; the aim of translational research is to translate existing knowledge about cancer biology into techniques and tools that will accelerate progress towards patient benefit.

Please note: Basic discovery or knowledge gathering research projects (T0) will not be accepted. The project must be a translational biomedical project (T0.5 – T1). If you are unsure of your project eligibility, please contact grants@irishcancer.ie before Thursday 11 February.

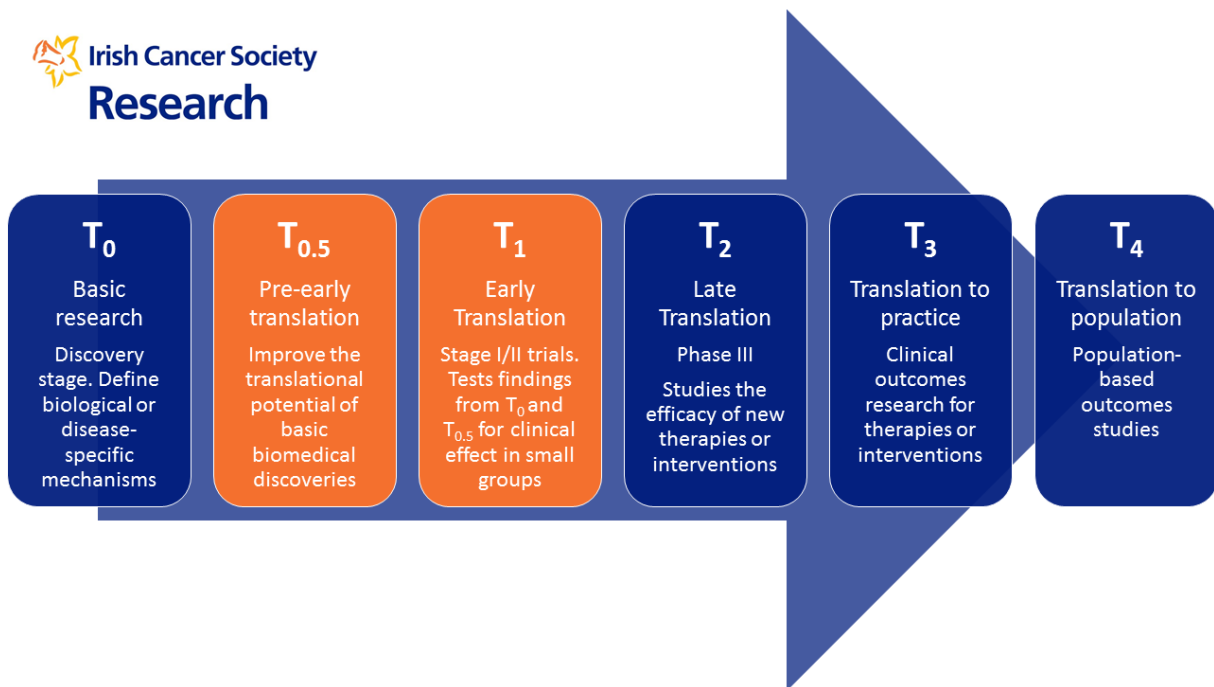


Figure 1: The Irish Cancer Society Phases of Translational Biomedical Research.

3. Host Institute

The host institute must be the higher education institute where the academic supervisor is based. In order to be eligible to apply for funding, a proposed host institution must be a higher education institution in the Republic of Ireland and must be one of the [HRB's approved host institutions](#). Support for the summer studentship application must be secured from the appropriate person within the host institute (Section G of the application form).

4. Application Procedure

Prior to applying, you must read this document through to completion. Applications must be completed and submitted through the Irish Cancer Society Gateway Grant Tracker online system. In order to submit an online application you are required to register at the following address: <https://grants.cancer.ie>.

Applications must be completed and submitted by **3pm Thursday 25 February 2021***.

****Note:** before the final submission of your application, the application must be approved by the supervisor on the online system. It is important that the student allows sufficient time for this process to be completed before the closing date as the system will automatically shut down at 3pm on the 25 February 2021.*

4.1. Overview of the Application Process

When registering please fill out all the fields on the registration form.

When you enter your login details you will be directed to the Portal Homepage. From here you can:

1. Update your basic information (please make sure all fields are completed)
2. Make a new grant application
3. Access previous grant applications

4.2. Making an application

When you have ensured that all your basic details are inputted then you can proceed to apply for a new grant application. This can be done by returning to the Portal Homepage and clicking to apply for funding from one of our grant streams. Or alternatively through the 'My Applications' tab on the left hand side of the page, and clicking the 'New Application' button.

You will then be asked what Grant Type you would like to apply for. Click 'Apply' for the Grant Type detailed as 'Translational Research Summer Studentship 2021'.

4.3. Eligibility Criteria

Once you click 'Apply' you will be required to tick that you meet all of the eligibility criteria before you can proceed to make an application. If you do not meet all criteria, then you will be unable to make an application.

5. The Application Form

Once you have indicated that you meet all eligibility criteria you will then be directed to the application form. The full application form has automatically been created on the system. To enter information into the application form, click the 'Edit' button in the upper right-hand corner. Applications should be completed with the support of the proposed supervisor.

There are 8 sections outlined on the left hand side of the page:

- a) Introduction
- b) Project Outline
- c) Applicant details
 - i. Personal Statement
 - ii. Planned Research Outcomes
 - iii. Applicant's CV
- d) Supervisor
 - i. Add supervisor
 - ii. Supervisory Support Plan
 - iii. Proposed Supervisor's CV
 - iv. Declaration of Support - Supervisor
- e) Project Summary
- f) Lay Summary

- g) Declaration of Support - Host Institute
- h) Validation Summary

These sections are to be viewed and completed. It is recommended that you save the information as you complete each section. This can be done by clicking 'Save' as you go along. Alternatively, the information will be saved when you click 'Save and Close'. By clicking 'Previous' you will be brought to the previous section and by clicking 'Next' you will be brought to the next section.

As you proceed through the sections you will see a small blue question mark icon next to some of the sections. By clicking on this icon you will get more information on the section to be completed. Sections that are required to be filled out have a red circle icon next to them. You will not be able to proceed with the application if these sections are not completed.

a) Introduction

This section gives overview information on the 'Translational Research Summer Studentship'.

b) Project Outline

Details of your application are entered into this section. Input and save the information as required under the following headings:

- Proposed Project Title
- Proposed Start Date - Must not be before 2 June 2021
- Duration - Must be a maximum of 8 weeks
- Proposed Research Institute
- Cancer Type
- Keywords
- Research type
- Discipline
- Translational research overview

c) Applicant Details

i. Personal Statement

The personal statement section should detail why you are applying for the studentship and why you are the best candidate (**300 words max**).

The following must be covered:

- Reasons for pursuing a studentship in cancer research
- Reasons for choosing your proposed supervisor

ii. Planned Research Outcomes

The studentships will give students the opportunity to work within a research group and gain research experience at an early stage in their career path.

Please state and briefly explain the most significant techniques/skills/training that you are planning to acquire or develop during your summer studentship **(200 words max)**.

iii. Applicant's Curriculum Vitae

Please upload your CV - completed using the template provided (the template is downloadable in this section on the online system or on the website). More information on each section is given in the template. If the section is not relevant to you, please enter N/A.

Sections to be completed in the template include:

- Name
- Email address
- Current institute of study
- Academic history
- Research experience (including publications, if any)
- Employment history

Please complete a table for **each year** of your qualification. For example, one table for Year 1, another table for Year 2 etc.

Example of completed Academic Qualifications table for one year of a degree:

Degree/Qualification	BSc Genetics
Year	2
From	01/09/19
To	01/06/20
Subjects	Molecular Genetics, Emerging Therapies, Drug Discovery and Development, etc....
Institute	University College Dublin (UCD)
Department/School/Division	Pharmacology
Country	Ireland
Grade	70% or GPA 3.0 (First Class)

d) Supervisor

i. Add Supervisor

You must add your **proposed** supervisor to the application. Your supervisor will have to confirm participation in the application and also approve the application after you submit it and before it is finally submitted to the Society.

To add your supervisor, you can search for your supervisor by entering their email address. If the supervisor has already created an account, then they will appear on the list. To add them as your supervisor, click 'Select'. Please note that on saving, the contact will be added to the Application as a Supervisor and they will receive a notification of this via email.

If your supervisor does not already have an account, you can click 'Add a New Contact' and enter their name and email address. Please note that on saving, the contact will be added to the Application as a Supervisor. They will receive a notification of this via email.

ii. Supervisory Support Plan

The supervisor must guide the student during the studentship to ensure that they acquire the necessary skills to conduct the research project. Please detail the plans for supervisory support that will be in place during your studentship **(200 words max)**.

This should include summary details of the following:

- The quality and level of supervision/mentorship that you will receive
- How accessible your supervisor will be throughout your project

iii. Supervisor's Curriculum Vitae

The supervisor's CV is required. Please upload the CV of your proposed supervisor. This CV should be completed using the template provided (this template* is downloadable in this section on the online system or on the website). Please ensure that you first have permission from your supervisor to include their CV.

**Please note this template is different to the Applicant CV Template*

iv. Declaration of Support - Supervisor

Please upload a declaration of support from your proposed supervisor. The Declaration of Support Template is downloadable from this section on the online system or on the website. This must be completed on headed paper.

Your supervisor should indicate why they are supporting your application, why you are suitable for this studentship, and express approval of your application.

e) Project Summary

Please give a summary of your proposed research project **(1000 words max)**.

This should include summary details of the following:

- Background information/existing literature
- The hypothesis and the objectives
- Project plan
 - Methodology
 - Project timeline
- Summary and conclusions

f) Lay Summary

Please provide a detailed and structured lay abstract (**400 words max**).

The lay abstract should include the following:

- A lay summary of your proposed research project
- Details of how your research objectives will have an impact, in particular how the research will benefit people affected by cancer

Note: *The review process is a two-stage process. The full application form will be reviewed in stage 1 and the top applicants will be short-listed to progress to stage 2. Stage 2 will consist of a review of the lay summaries and the personal statements by non-scientific reviewers (please see Section 7 for information on the assessment procedure). It is the non-scientific reviewers who will make the final decision on who should get funding, therefore, it is very important that the lay abstract is written in plain English and is understandable to a non-scientific audience. Please see Appendix 1 for guidelines on writing a lay abstract.*

g) Declaration of Support - Host Institute

Please upload a declaration of support from the host institute. The Declaration of Support template is downloadable from this section on the online system or on the website. This must be completed on headed paper.

The declaration of support is a letter stating that the host institute is aware of and supports the application.

h) Validation Summary

In this section, any required fields in the application form that have not been completed will be detailed. You will not be able to submit the application until all required fields are completed.

6. Submission of the Application

Applications must be fully submitted on the online grant system by **3pm Thursday 25 February 2021**.

The application is ready for submission once:

- It has been verified that all required questions are answered in the correct manner on the application form.
- The supervisor has confirmed their participation. An email will be sent to the supervisor requesting their participation when they are added to the application.

The application can be submitted for final submission to the society once:

- The application submitted by the applicant is approved by the signatory (supervisor). The supervisor will be notified by email once the applicant has submitted the application.

- The signatory will be able to see the full application in PDF format on their online portal.
- The signatory may approve or reject at this stage. The applicant will be notified of both approval and rejection of the application. Rejected applications will be returned to the applicant.

Applications that have been submitted by the lead applicant but not approved by the signatories before the deadline will not be considered. It is the responsibility of the applicant to ensure that the application is submitted with sufficient time allowed for the signatory to approve the application before the deadline.

7. Assessment Procedure

Incomplete applications, ineligible applications and applications that are submitted after the deadline will not be assessed.

Assessment Procedure

Stage 1 Review:

The following will be assessed by scientific reviewers:

- Project Summary
- Lay Summary
- Research Experience
- Applicant details- i. Personal Statement
ii. Planned Research Outcomes
iii. Applicant's CV
- Supervisor details- i. Supervisory Support Plan
ii. Supervisor's CV,
iii. Declaration of Support – Supervisor

Stage 2 Review:

Shortlisted applicants will progress to stage 2 of the assessment procedure and will be reviewed by non-scientific reviewers.

The following will be assessed:

- Lay Summary
- Personal Statement

Assessment outcome

Applicants will be informed of the outcome of review by email in April 2021.

8. Application Checklist

- Full application form
- Applicant's CV
- Proposed Supervisor's CV

- Declaration of Support – Supervisor
- Declaration of Support – Host Institute

9. Contact details

If you require assistance or have any queries about the application, please contact us:

Email: grants@irishcancer.ie

Appendix 1



Irish Cancer Society Research

1. Writing a Lay Research Summary

A lay summary should provide a brief overview of the research proposal, written in a format appropriate and understandable to your audience. It should be written in a manner appropriate to your audience who **do not** have a scientific background. Therefore, ensure the lay summary is written in plain English (please see Section 2). However, an important consideration when writing a lay abstract is to determine the right balance between pitching it to the correct lay audience and oversimplifying it. As such, the abstract should be written in clear plain English, but also adequately conveys the research question and what makes that particular research project important. The abstract may still have some “jargon” or scientific names when necessary, once they are clearly defined in understandable terms.

Please see below for sample answers for the Lay Summary Section:

Example 1: Technical language used. Poor abstract with very little context. Please note, the project described in this example has been created for the purpose of providing guidelines.

Background of the research proposal:

Our group was the first group to establish and publish research on Trastuzumab-resistant cell line variants. At present, to our knowledge, we are the only group researching the role of Hypoxia-inducible factor 1-alpha (HIF-1 α) in Trastuzumab drug resistance in HER2+ breast cancer. This is a very interesting area that we have been researching. This research may also be beneficial in other HER2 targeted therapies.

Overall problem:

The focus of this project is on a drug called Trastuzumab. The problem that we are addressing is Trastuzumab drug resistance. The question we are asking is why do some patients respond to Trastuzumab treatment and why do some patients not respond to Trastuzumab treatment?

Trastuzumab is a monoclonal antibody that prevents HER2-mediated signalling. Trastuzumab is approved for the treatment of HER2-positive breast cancer. Trastuzumab is showing promise in the

clinic but, like most therapies, the issue of innate and *de novo* resistance prevails. Our research focuses on investigating the mechanisms of drug resistance, finding ways to overcome this resistance and finding predictive and/or prognostic biomarkers for this breast cancer treatment.

How are we addressing the problem of Trastuzumab resistance?

In the laboratory, we have Trastuzumab-sensitive breast cancer cell line variants and we have developed Trastuzumab-resistant breast cancer cell line variants. We are comparing the proteins in drug-resistant cells to the drug-sensitive cells to try to find statistically significant differences between the two. We have identified HIF-1 α as a potential protein involved in the mechanism of Trastuzumab resistance.

What is HIF-1 α and what are our next steps?

HIF-1 α is one of the major transcription factors that regulates tissue response to low oxygen tension. HIF heterodimers bind to hypoxic response elements (HREs) in the genome, this results in activation of pathways involved in angiogenesis, pH regulation, metabolism and apoptosis.

We have shown in the laboratory that increased expression of HIF-1 α directly correlates with increased resistance to Trastuzumab treatment. We are interested in further investigating if HIF-1 α plays a role in initiating and/or promoting Trastuzumab drug resistance. If awarded this grant, we will have the opportunity to expand this research and to test these findings in other breast cancer models.

Example 2: Understandable lay abstract with good level of research context given. Plain language used. Please note, the project described in this example has been created for the purpose of providing guidelines.

Overall problem:

Trastuzumab is a drug used to treat a certain type of breast cancer called HER2+ breast cancer. This drug has been very successful in treating breast cancer. However, unfortunately, while Trastuzumab destroys a lot of breast cancer cells, there are some cancer cells that can still stay alive. When treatment does **not kill all cancer cells**, this is called **drug resistance**.

Background of the research proposal:

With the issue of Trastuzumab drug resistance in mind, we previously developed two types of breast cancer cells in the laboratory that represent the different ways that patients respond to Trastuzumab. One type being cells that die after Trastuzumab treatment and the other type are cells that do not die after Trastuzumab treatment. We previously compared hundreds of different ingredients in these two different types of cells. We found one particular ingredient that we believe to be involved in stopping Trastuzumab working.

What is the specific ingredient?

We found that the breast cancer cells that are resistant to Trastuzumab treatment are the only ones that **produce large amounts of the “Hypoxia-inducible factor-1-alpha (HIF-1 α)”** ingredient. We need to see if HIF-1 α is the “brains-of-the-operation” when it comes to Trastuzumab resistance.

What is HIF-1 α ?

Tumours can grow very fast, but, sometimes the walls surrounding the tumour cannot grow at the same speed and are faulty. Because of this, the tumours can become patchy and “leaky”. When this happens, oxygen can leak out of the tumour causing the conditions in the tumour and nearby area to become very harsh and unfavourable. But, cancer cells cleverly find ways to avoid the harsh conditions and they can become stronger and survive better. Cancer cells use HIF-1 α to make these unfavourable conditions within a tumour less harsh.

How are we addressing this problem?

Our **next steps** are to find out why the resistant cells are producing large amounts of HIF-1 α . We believe that Trastuzumab will work again if we stop the cells producing large amounts of this specific ingredient. We will test different drugs to shutdown HIF-1 α in the resistant cells. When we find the best drug to shut down HIF-1 α we will then test Trastuzumab’s ability to kill the cells. If Trastuzumab works again we will test the two drugs together to see if they work better together as a “**double therapy**”. The next step will be to try the two drugs in mouse models of HER2 breast cancer. Mice with resistant cancer tumours will be given either Trastuzumab alone or the two drugs together to see if the “double therapy” works best.

Our research will focus on trying to stop drug resistance occurring in patients in the first place and to try and make Trastuzumab better at treating breast cancer.

2. General notes for writing in plain English

There are many online resources available to guide you in writing an effective plain English summary. Some of these resources are listed in Section 6 of this document.

Here are some general notes on how to write in plain English:

- Patients are not scientists (usually) and knowledge should not be assumed. Avoid using technical language or scientific terminology. Use everyday words to communicate your point and explain the science. While language should be understandable, it should not be dumbed down - it may be necessary to use scientific words and jargon in order to convey why your research is special, but be sure to explain it thoroughly and be consistent in its use.
- Use short clear sentences.
- Use paragraphs.

- Use an active voice, and place the person/group/thing doing the action at the beginning e.g., 'We ran an experiment,' rather than, 'The experiment was run.'
- Don't use '*don't*'. You can write in plain English without becoming too casual/unprofessional.
- Use an appropriate tone. This is not a newspaper article, and its purpose is not to entertain.
- Make sure grammar, punctuation, and spelling are accurate.
- Bullet points (like these ones) can make it easy to digest a lot of information

3. Research Impact

Broadly speaking impact is the demonstrable contribution that research makes to society. Impact can be defined as research being used to bring about a positive change to the lives of people affected by cancer.

The impact research has is specific to each project and therefore, impact is varied and can occur over different timescales, from the short to long term.

Some of the key areas of research impact include:

- academic impact
- health and health systems impact
- health-related and societal impact
- influence on policy making
- economic impact

It is important to not overstate the impact of a research project but rather detail realistic goals and the potential that each project has for creating an impact.

It is recognised that for some research there will be no direct impact on the lives of people affected by cancer in the short or medium term. However, the research will contribute to a wider conversation on cancer with the view to eventually directly impacting the lives of those affected by cancer.

The inclusion of academic impact is also an important consideration when measuring research impact, as it demonstrates the contribution that a particular research project has made towards the advancement of science, and to the cancer research knowledgebase. These academic advances can be measured in terms of primary research related outputs and includes research publications, knowledge dissemination, capacity building, and collaborations.

4. Resources

General resources

INVOLVE – UK National Institute of Health Research (NIHR) initiative to support PPI.
<http://www.invo.org.uk>

National Standards for Public Involvement.
<https://www.invo.org.uk/posttypepublication/national-standards-for-public-involvement/>

NALA (National Adult Literacy Agency)
<https://www.nala.ie>

Access to Understanding: Promoting public understanding of biomedical and health research
<http://www.access2understanding.org>

Writing a Lay Summary

Duke, M. (2012). How to write a lay summary.
<http://www.dcc.ac.uk/sites/default/files/documents/publications/HowToLaySummariesDec2012.pdf>

Communicating to patients

NHS England. Language Matters: Language and Diabetes.
<https://www.england.nhs.uk/wp-content/uploads/2018/06/language-matters.pdf>

Writing in plain English

NALA (National Adult Literacy Agency). *Writing and Design Tips*.
https://www.nala.ie/sites/default/files/publications/Writing%20and%20Design%20Tips%202111_1.pdf