



IRISH RESEARCH COUNCIL
An Chomhairle um Thaighde in Éirinn

Irish Research Council Statement on ‘STEAM’ Research

Introduction

The Irish Research Council’s vision is for a healthy research ecosystem that will play a key role in addressing the breadth of economic and societal needs. The Council identifies and supports excellence within and between all disciplines in Irish higher education institutions and other research performing organisations. Arising from this unique national role, the Council has a legacy of funding research which would now be characterised as ‘STEAM’ research: in its basic form this is research combining knowledge from Science, Technology Engineering, the Arts and Mathematics.

The Council’s approach complements the European Commission’s interdisciplinary focus on challenge-based research. In Ireland, the national strategy for research and development, science and technology, *Innovation 2020*,¹ has stressed the necessity of research to address societal challenges facing the country. As this strategy states, *“interdisciplinary research is key to addressing such challenges”* and *“the engagement of researchers from both Arts, Humanities and Social Sciences, and Science, Technology, Engineering and Maths can often generate more innovative solutions and new ways of approaching and thinking about problems”*.²

In this context, the Council is taking a pro-active role in targeting supports to cultivate interdisciplinary research. ‘STEAM’ represents a specific form of interdisciplinary research which promotes innovation. As it often takes the form of applied research, ‘STEAM’ has clear social and economic relevance. The Council is not limited to funding pre-defined disciplinary areas or themes and is, therefore, well placed to fund ‘STEAM’ research. This allows ‘STEAM’ to be embedded within the Council’s schemes, in addition to being supported by specific measures.

The purpose of this statement is to outline the opportunities that the Council has in place and actions that the Council will implement to support and encourage ‘STEAM’ research.

¹ <https://dbei.gov.ie/en/Publications/Publication-files/Innovation-2020.pdf>

² Innovation 2020, p. 44.

What is 'STEAM'?

'STEAM' is a form of interdisciplinarity in research and teaching that seeks to combine knowledge from art and science. The acronym combines the acronym 'STEM', which is understood as standing for Science, Technology, Engineering and either Mathematics or Medicine (usually the former), with the letter "A" added which stand for the arts, sometimes also encompassing the humanities and the social sciences.

'STEAM' is not, in fact, a new concept. It can be argued that it was the norm in scholarly endeavour in the Renaissance period and before, when modern disciplines and their boundaries had not yet been established.

Commerce and defence have both had crucial roles promoting interdisciplinary research, in general, and the 'STEAM' approach, in particular. The main reason is that industry and the military make associations between research outputs that are produced inside academia across different fields and that are often less well known in the public realm. 'STEAM'-based knowledge produced outside of academia, as various indicators such as research expenditure or the number of PhD holders employed document, has been increasing in recent years³.

Benefits of 'STEAM' for employers

In addition to contributions that 'STEAM' can make to understanding and tackling complex problems within a research context, it is important to consider benefits that it can bring to employers. This has significant implications for employability of graduates and early career researchers.

Graduates with a 'STEAM' background or exposure to same gain new knowledge, as combining two or more disciplines enables the development of a greater depth of analysis and insight, expanding what they learn and understand. 'STEAM' also promotes the kind of skills that support intercultural competence: the ability to "build bridges" and to communicate effectively across the very different cultures that the disciplines represent is similar to the ability required to communicate effectively across different national cultures.⁴

Irish Research Council supporting 'STEAM' in the Irish research landscape

The Council has been supporting 'STEAM' and interdisciplinary research in general by various means. The *New Horizons Interdisciplinary Research* strand, launched in 2015, was designed to encourage AHSS researchers to collaborate with STEM researchers on interdisciplinary projects that address medium-term societal challenges. A number of workshops funded under a 2016 call, "Creative Connections: Workshops to Cultivate Interdisciplinary Research in Ireland", focused on 'STEAM'

³ See R. Frodeman, The Future of Interdisciplinarity. In: R. Frodeman, ed. The Oxford Handbook of Interdisciplinarity. 2nd Edition ed. Oxford: Oxford University Press. 2017.

⁴ See A. De la Garza & C. Travis, eds. The STEAM Revolution: Transdisciplinary Approaches to Science, Technology, Engineering, Arts and Mathematics. Zug: Springer Nature. 2018.

research.⁵ Outcomes and recommendations that resulted from these workshops, which will be published in the form of a short report, have informed this document. The Enterprise Partnership Scheme and the Employment-based Postgraduate Programme support enterprise-academia-social engagement on the basis of any discipline, including AHSS. In addition, in October 2017, a [Framework for Strategic Partnership 2017 – 2020](#) between the Arts Council and Irish Research Council was put in place which sets the development of the ‘STEAM’ agenda as one of the shared goals of the two councils.

The Council is committed to building on these foundations and will adopt specific measures to further encourage and support ‘STEAM’ research in Ireland.

The Council recognises the need to build capacity in the Irish research system to undertake ‘STEAM’ research. To contribute towards achieving this goal within its remit, the Council undertakes to:

1. Through its funding programmes, support the highest quality ‘STEAM’ research, irrespective of the approach or methodology of that research
2. Maintain and further develop funding opportunities for researchers to collaborate and explore ‘STEAM’ approaches to research and to engage in emerging fields
3. Collaborate with other research funders nationally and potentially internationally on joint funding and other initiatives as appropriate
4. Showcase ‘STEAM’ success stories, both supported by the Council and other bodies
5. Ensure that the Council’s assessment processes, including expertise of assessors, represent the diverse range of proposals and submissions received including those which are ‘STEAM’
6. In planning new initiatives in general, the Council will consider the effect of requirements on researchers involved in ‘STEAM’
7. Monitor and periodically review its policies and procedures to ensure that the relevant aims, including in the area of supporting ‘STEAM’ research, are being achieved and that the policies and procedures are implemented as specified

In support of its commitment, the Council will:

1. Accept ‘STEAM’ proposals under all funding schemes
2. Identify ‘STEAM’ research by asking researchers submitting a funding proposal to identify whether their research project is interdisciplinary and in what ways. This will enable appropriate assessment of funding proposal as well as monitoring of trends, such as success rates, outputs and impact.
3. Further develop specific initiatives to support ‘STEAM’ research
4. Develop links with additional independent evaluators with ‘STEAM’ or interdisciplinary expertise

⁵These include: “Health Research Lab” (University of Limerick), “Reimagining Ageing and Memory through Interdisciplinary Research” (Trinity College Dublin), “ASSEMBLE: Bringing together researchers from Arts, Science, Engineering, Medicine and Business” (NUI Galway), and “STEAM: A Workshop to Cultivate Interdisciplinary Research in Ireland” (University College Cork).

5. Convene selection panels involving members with 'STEAM' and interdisciplinary expertise
6. Analyse outcomes of selection rounds to identify whether 'STEAM' proposals are achieving normal success rates and to identify patterns and trends to inform policy and schemes
7. Participate in relevant partnerships and/or fora relating to 'STEAM'.

In 2019–20 the Council will:

1. Introduce collection of data on self-identified 'STEAM' proposals, to enable analysis of patterns in proposals submitted and funded, and appropriate assessment of 'STEAM' proposals
2. Engage with independent expert evaluators participating in assessment of funding applications submitted to the Council to identify those with 'STEAM' expertise
3. Review assessment processes for research proposals, including identifying independent expert evaluators with expertise in 'STEAM', in particular, and interdisciplinary research, in general
4. Provide data on 'STEAM' proposals in reports and on the Council's website
5. Continue to engage with stakeholders to convey the value of 'STEAM', and interdisciplinary research in general, including for partnership with non-academic sectors
6. Target the development of 'STEAM'-orientated employer collaborations through the Council's enterprise-facing schemes
7. Subject to budget, continue to run [the COALESCE scheme](#) which includes an interdisciplinary strand that will enable AHSS researchers to lead research projects with a STEM co-PI: This will provide opportunities for potential 'STEAM' collaboration
8. Prepare and publish an action plan for supporting 'STEAM' for 2021 – 2022.

ENDS

Irish Research Council

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