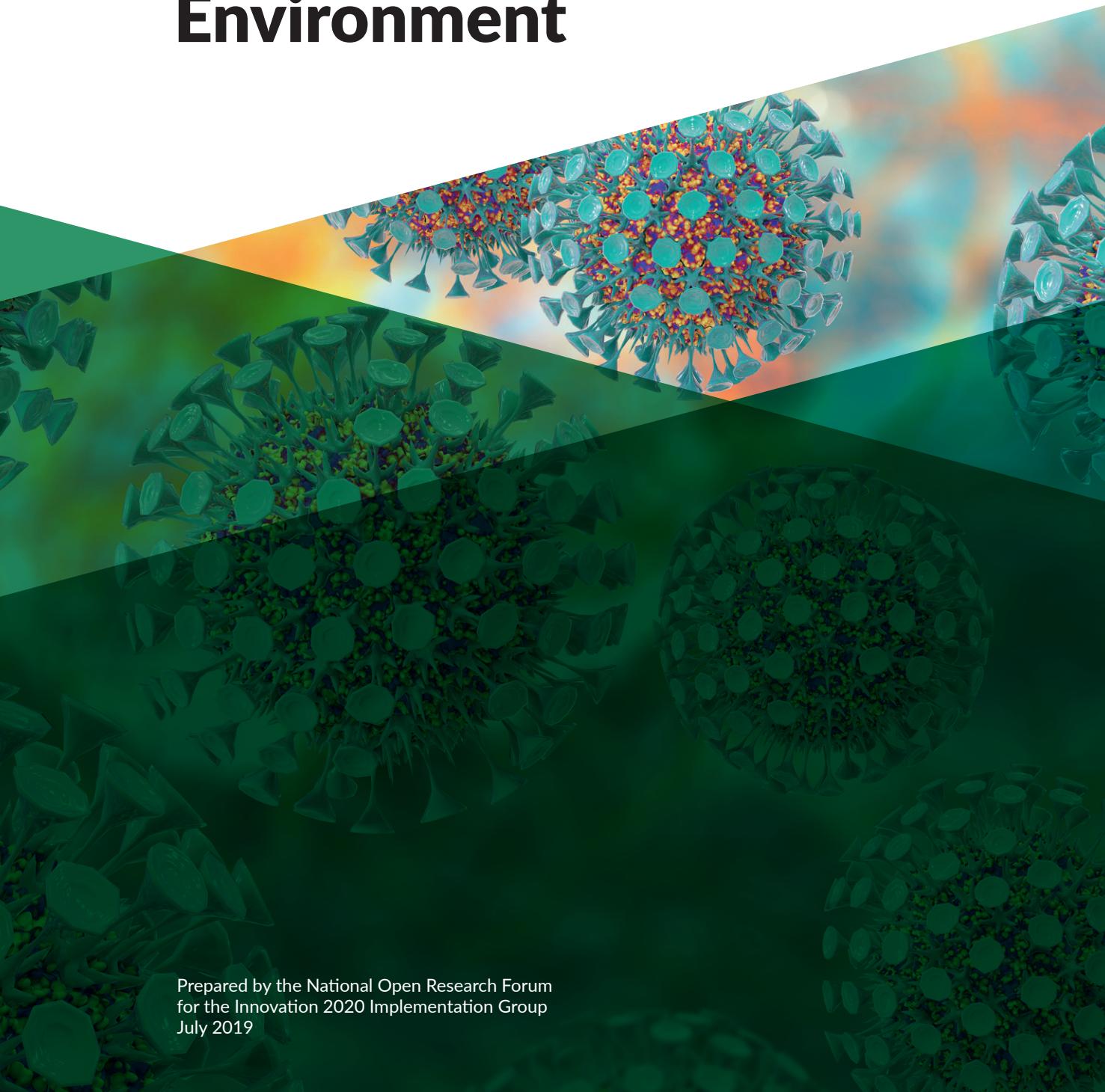




Rialtas na hÉireann  
Government of Ireland

# National Framework on the Transition to an Open Research Environment



Prepared by the National Open Research Forum  
for the Innovation 2020 Implementation Group  
July 2019



# National Framework on the Transition to an Open Research<sup>1</sup> Environment

## Welcome

The Irish research system is transitioning to meet 21<sup>st</sup> Century challenges.

There is a fundamental shift across Europe towards making research more transparent, collaborative, accessible and efficient. Ireland already has a strong research reputation with a proven track record of collaborating and competing successfully in Europe and beyond. We recognise the importance of collaborating at a national level also to better support research and researchers in the key areas of open access publications, FAIR research data, infrastructure, skills and competencies, and incentives and rewards.

Open research requires system-thinking and a change in research culture and behaviour. The National Open Research Forum (NORF) is leading a critical and informed approach to framing open research in Ireland. It is a great example of how collaborative working at a national level can help to reach agreement on difficult choices which support our common purpose of delivering excellence, talent and impact across the Irish research system.

I welcome the development of this framework and encourage all Irish researchers to engage fully with the development of the open research agenda.

**John Halligan TD**  
**Minister of State for Training, Skills, Innovation, Research and Development**  
**Department of Business, Enterprise and Innovation and the Department of Education and Skills**

Established in 2017, the National Open Research Forum brings together a diverse range of views and backgrounds from across the Irish research community, providing a space to think about and design how the Irish research system should work in the future.

It is built on a common understanding that a shift in accepted practices is needed and a genuine willingness to adapt and to do things differently. Emerging from an earlier open access to publications committee and responding to EU policies, we have joined-up the conversations from a myriad of 'open' agendas that are happening at a local, national, EU and international level.

Our National Framework combines the activities of working groups over the past two years and articulates a coordinated Irish agenda for an open research environment. We look forward to working in partnership to bring this agenda to life in a holistic, sustainable and supported manner.

**Dr Patricia Clarke, Programme Manager, Health Research Board (HRB)**  
**Dr Gemma Irvine, Head of Policy and Strategic Planning, Higher Education Authority (HEA)** (Mr Tim Conlon from June 2019)  
**Co-Chairs, National Open Research Forum**

<sup>1</sup>The term 'open research' is synonymous with the terms 'open science' and 'open scholarship' and is used in this context to clarify that all disciplines are included in this National Framework.

# Preamble

The National Framework on the Transition to an Open Research Environment has been developed as the first step in a process to create a National Action Plan for the transition to an open research environment in Ireland.

The National Framework is aligned with developing European Commission policy in this area and is structured accordingly. Commission Recommendation (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information asks Member States to "set and implement clear policies (as detailed in national action plans)" covering open access to publications; management of research data; preservation and reuse of scientific information; infrastructures for open research; skills and competencies; and incentives and rewards<sup>2</sup>.

The principles of the National Framework support access to research funded by the Irish Government. They support the free flow of information across national and international research communities, contributing to research-enabled teaching and learning; citizen science; open innovation; and greater transparency, accountability, and public awareness of the results of publicly funded research. The transition to an open research environment has a key objective of enhancing and supporting research excellence across all disciplines, research integrity, and public trust in research.

As the National Framework encompasses all publicly funded research, it is necessarily broad and allows for the fact that some funders and research performing institutions may have specific requirements relating to open research which should also be observed. These principles build upon existing national and international open research policies, and, through a planning process to 2020, will move to alignment with developing European Commission policy<sup>3</sup> and the principles of 'Plan S' where appropriate<sup>4</sup>.

Implementation will be detailed in a **National Action Plan** which will be commenced with all relevant stakeholders in 2019 and reviewed annually. The National Action Plan will cover concrete objectives and indicators to measure progress on the transition to open research for all disciplines, including scoping potential cost implications and the allocation of responsibilities.

<sup>2</sup> Commission Recommendation (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information C/2018/2375. (OJ L 134, 31.5.2018, p. 12–18). Available from: <http://data.europa.eu/eli/reco/2018/790/oj>

<sup>3</sup>ibid

<sup>4</sup> Details on Plan S principles and implementation. Available from: <https://www.coalition-s.org/>

# Implementation

The next phase of activity, therefore, will be to agree an initial National Action Plan which will be reviewed annually in light of progress and developments. Following the Commission Recommendation, the Plan will provide for “concrete objectives and indicators to measure progress; implementation plans, including the allocation of responsibilities; and associated financial planning.”<sup>5</sup>

This multi-annual planning process will be based on consultation with, and engagement of, all stakeholders – particularly researchers at every research career stage and representing all disciplines. The process will be defined by a commitment to respect, engage with, and support the research community in the broadest sense, and to address disciplinary, professional, national, and global concerns in the area of research. It will seek to achieve the goals of open research while benefiting researchers equally and avoiding unintended consequences which may disadvantage any group or individual. Special consideration will be given to areas upon which the impact of this transition remains, as yet, less well understood. In particular, the national process will attend to the specific issues associated with the transition as it affects, among others, the following groups:

- Arts and humanities researchers
- Early career researchers
- Researchers not in receipt of grant funding
- Publicly funded researchers with no formal institutional affiliation
- Small, independent, non-profit journals and publishers (especially Irish journals and publishers)
- Learned societies (especially Irish learned societies)
- Researchers and citizens in the Global South, and
- Citizen scientists.

The principles of research integrity and responsible research practice underpin this National Framework and its associated national planning process, and will guide its actions.

Throughout the transition, researchers will be supported to maximise the impact of their work while ensuring that they are assisted, recognised, and rewarded for practising open research.

An underlying principle of the National Framework and associated National Action Plan is that all researchers will have access to the resources necessary to enable them to publish through open access, without prejudice.

<sup>5</sup>Commission Recommendation (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information C/2018/2375. (OJ L 134, 31.5.2018, p. 12–18). Available from: <http://data.europa.eu/eli/reco/2018/790/oj>

# The stakeholders

The stakeholders depicted in Figure 1 are invited to endorse this National Framework and to engage in the subsequent national planning process.

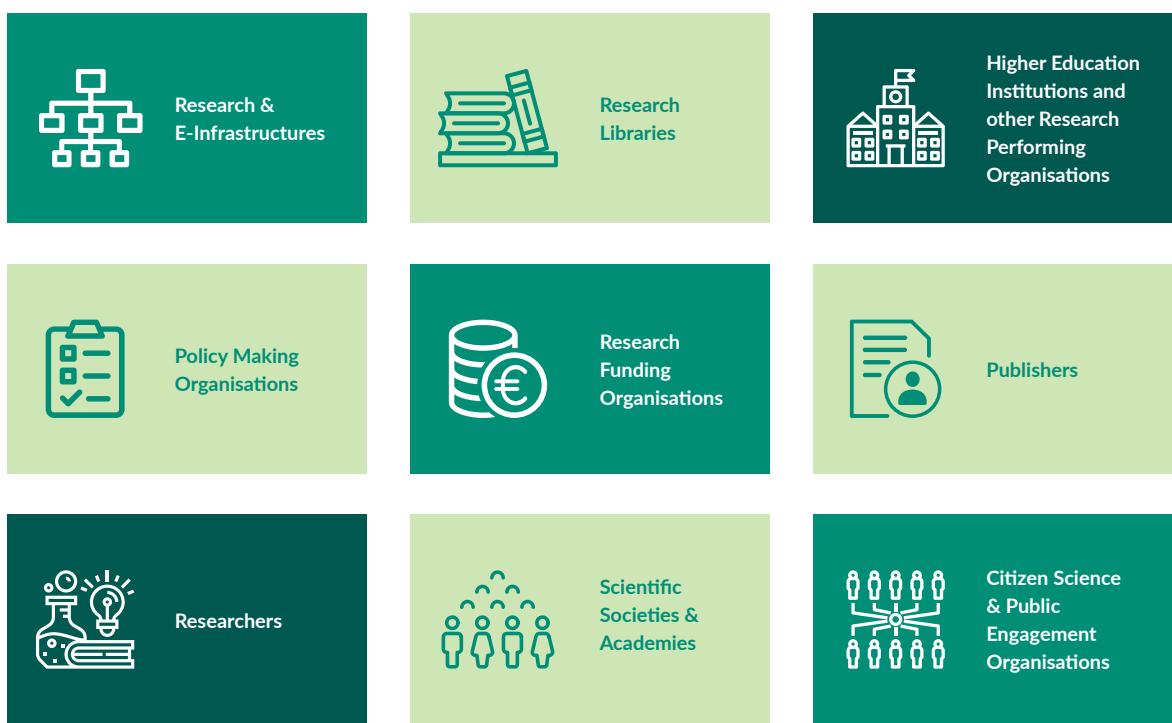


Figure 1. Major stakeholder groups with responsibility for open research<sup>6</sup>

<sup>6</sup> European Commission. OSPP-REC Open Science Policy Platform Recommendations. Luxembourg: Publications Office of the European Union; 2018. Available from: <https://doi.org/10.2777/958647>.

# Open access to research publications

1. All Irish scholarly publications resulting from publicly funded<sup>7</sup> research will be openly available by default from 2020 onwards and will be accessible on an ongoing basis. It is recognised that the timeline to achieve open access for publications other than journal articles and conference proceedings, e.g. monographs and book chapters, may take longer.
2. Where publication is in accordance with these principles, researchers may publish where they feel is most appropriate. Individual researchers, research performing organisations, and research funders have a collective duty of care for the research system as a whole (including those who work within it) and for ensuring the widest possible dissemination of research.
3. Every researcher in Ireland shall have the rights and the facility to deposit/publish via a suitable open access journal, platform, or repository. All researchers should be able to publish their work on open access even when their institutions or disciplines have limited means or if they are researchers not in receipt of a research grant.
4. In supporting research excellence across all disciplines, the National Action Plan will consider the variation in publishing practices, e.g. the different rates of journal article publishing across disciplines.
5. New and innovative models for open access publishing are encouraged, including high-quality open access publishers who do not charge open access publication fees. In the event of publication fees being charged, their funding will be standardised and capped in line with European and/or international agreements, and associated journals should be managed according to ethical and economically inclusive principles. The payment of open access fees to hybrid journals will not be supported.<sup>8</sup>
6. The final published version of a publication or the peer-reviewed Author's Accepted Manuscript (AAM) should be made open access.
7. Open access should be immediate upon publication without any embargo period.<sup>9</sup>
8. Open access publications must be accompanied by an open licence, preferably the Creative Commons Attribution licence, CC BY, or another appropriate Creative Commons licence, such as CC BY-SA or CC0. Licensing terms should not unduly restrict text and data mining, in accordance with and without prejudice to applicable copyright legislation. The licence applied should fulfil the requirements defined by the Berlin Declaration on Open Access.<sup>10</sup>
9. Authors/institutions are encouraged to retain copyright of their publications.

<sup>7</sup> Publicly funded research is research undertaken in whole or in part via publicly funded resourcing/remuneration, e.g. salaries, grants, contracts, etc.

<sup>8</sup> Stakeholders may choose their preferred route(s) to publication and adopt their preferred route(s) to open access to publications, as long as it is in accordance with the principles stated herein.

<sup>9</sup> Throughout the transition, some stakeholders may permit embargos of no longer than six months after the date of publication (up to 12 months for Arts, Humanities and Social Sciences). In some instances, it is recognised that a longer embargo period of up to 18 months for Arts and Humanities may be necessary.

<sup>10</sup> Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities. 2003. Available from: <https://openaccess.mpg.de/Berlin-Declaration>

- 10.** In the interest of public transparency and fair competition and without prejudice to the protection of business information, information will be published, as a standard practice, about agreements between public institutions and publishers, including information on any ‘big deal’ arrangements, ‘off-setting’ agreements, and processing charge payments.<sup>11</sup>
- 11.** Initiatives will be explored to enhance open access research papers with formats, supplementary content, and technologies to assist people with disabilities; to support citizen science, public patient involvement, policy-making, and enterprise use and reuse; and to generally increase the public accessibility and impact of the content. A key to accessibility is the availability of machine-readable structured content for all elements of a research paper – a prerequisite for assistive technology that empowers people with disabilities to participate in the scientific and research process.
- 12.** Open access publications should be easily identifiable by appropriate technical means, defined through the National Action Plan. This will include the availability of specific metadata, interoperability standards, and persistent identifiers. Such metadata should be available for reuse under a suitable open licence. Data on citations (references from one publication to another) should be made available as openly licensed, structured metadata.
- 13.** Through the National Action Plan, robust criteria for compliant open access journals, platforms, and repositories will be defined and a list of such journals, platforms, and repositories will be published, as will agreed methodologies and processes for ongoing monitoring and reporting on open access publications.
- 14.** The importance of open archives and repositories for hosting research outputs is acknowledged due to their sustained role in enabling open access over many years, their archiving and long-term preservation function, and their potential for editorial innovation. In line with the Berlin Declaration on Open Access,<sup>12</sup> and via the National Action Plan, Irish stakeholders will ensure that a complete final version of each publication is made accessible and preserved via an online repository maintained by an academic institution, scholarly society, government agency, or other well-established organisation that seeks to enable open access, unrestricted distribution, interoperability, fault tolerance, immutability, and long-term archiving.

## Enabling FAIR research data

- 15.** The following research data management principles are confirmed and supported:
- i) Findable, Accessible, Interoperable, and Reusable (FAIR)<sup>13</sup> data contribute to research integrity and reproducibility.
  - ii) Those involved in each stage of the research process should have the capacity and skills necessary to enable FAIR data.
  - iii) Prior planning is essential to ensure that research data are managed effectively through all stages of the research cycle, from creation to long-term preservation.
  - iv) Research data should be interoperable across disciplinary boundaries to enable unrestricted sharing of reusable data between different systems and domains.
  - v) A robust citation mechanism for referencing data is necessary for research validation and to make data findable and accessible.

<sup>11</sup> ‘Big Deals’ refer to arrangements where bundles of journal subscriptions are offered at discounted prices. ‘Offsetting’ refers to agreements aimed at obtaining discounted open access publishing fees for consortia.

<sup>12</sup> Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities. 2003. Available from: <https://openaccess.mpg.de/>

<sup>13</sup> European Commission. Turning FAIR into reality: Final Report and Action Plan from the European Commission Expert Group on FAIR Data. Luxembourg: Publications Office of the European Union; 2018. Available from: <https://doi.org/10.2777/1524>.

- 16.** Data management planning is required as a standard practice from the earliest stage in the research process. Data management plans,<sup>14</sup> required as part of that standard practice, should address the following core requirements: data description and collection or reuse of existing data; documentation and data quality; storage and back-up during the research process; legal and ethical requirements; data sharing and long-term preservation; and data management responsibilities and resources.
- 17.** Datasets should be made easily identifiable through persistent identifiers, accompanied by standardised metadata, including funder names and grant numbers.
- i) Where appropriate, datasets should be linked to other datasets and publications through recognised mechanisms.
  - ii) Additional information should be provided to enable the proper evaluation and reuse of data.
  - iii) Interoperability standards should be applied to facilitate the reuse of data within and across disciplines and to support automated processes acting across large, heterogeneous datasets.
- 18.** Research data should be 'as open as possible, as closed as necessary':
- i) Research will become and remain findable, accessible, interoperable, and re-usable within a secure and trusted environment, through national and international digital infrastructures, including, where appropriate, within the European Open Science Cloud (EOSC).
  - ii) Research data may be restricted for justifiable reasons, such as commercial exploitation, confidentiality, security, protection of personal data, the achievement of the project's aim, and incompatibility with the further exploitation of the research results, or other stated legitimate grounds. Shared metadata are especially important for restricted data and should be made accessible if possible.
  - iii) Taking into account technological developments (including dynamic [real-time] data), the licensing terms used should not unduly restrict text and data mining of research data resulting from publicly funded research, in accordance with and without prejudice to the applicable copyright legislation.
  - iv) Any data, know-how, and/or information, whatever its form or nature, which is held by private parties in a joint public/private partnership prior to the research action will not be affected by this policy.
- 19.** Funders and institutions will include, in grant conditions and other support for research, their requirements for data management plans and for data sharing, together with details of their mechanisms for monitoring compliance.

## Infrastructures for access to and preservation of research

- 20.** Researchers will need increased access to research resources and services for storing, managing, analysing, sharing, and re-using research information.
- 21.** Synergies will be promoted via a coordinated approach among national infrastructures as well as with global and European initiatives, including Ireland's Open Data Governance Board (ODGB), the European Open Science Cloud (EOSC), relevant European Strategy Forum on Research Infrastructures (ESFRI) and European Research Infrastructure Consortium (ERIC) programmes.

<sup>14</sup> Science Europe. Practical Guide to the International Alignment of Research Data Management. Brussels: Science Europe; 2018. Available from: [https://www.scienceeurope.org/wp-content/uploads/2018/12/SE\\_RDM\\_Practical\\_Guide\\_Final.pdf](https://www.scienceeurope.org/wp-content/uploads/2018/12/SE_RDM_Practical_Guide_Final.pdf).

- 22.** The quality and reliability of the infrastructure will be ensured, including through the use of internationally recognised certification mechanisms, specifications, and standards and through utilising open-source systems and software whenever possible.
- 23.** Through the use of additional indicators and metrics, infrastructures will be made fit to collect information that underpins the monitoring and assessment of openness and impact.

## Skills and competencies

- 24.** Standardised and accredited skills for open research will be provided for researchers and required at all career levels, including among research students and supervisors. Equality of opportunity and access to skills training will be available for researchers regardless of discipline, institution, or funder.
- 25.** Library professionals, data stewards, and Information and Communication technology (ICT) personnel who provide support, training, advocacy, and infrastructural development for open research will be included in the national planning and implementation process. Planning for the provision of advanced, specialist professional skills will be considered as part of that process.

## Incentives and rewards

- 26.** Information on open research and associated skills attainment will be included in research reporting and evaluation at the national level.
- 27.** The academic career system will support and reward researchers who participate in a culture of sharing the results of their research.
- 28.** Funders and institutions will adopt open research metrics and 'responsible metrics,'<sup>15 16 17</sup> along with ways of rewarding the full diversity of outputs and of recording the broader social impact of research ('next-generation metrics').

<sup>15</sup> San Francisco Declaration on Research Assessment (DORA) [Internet]. Available from: <https://sfdora.org/>.

<sup>16</sup> Leiden Manifesto for Research Metrics [Internet]. Available from: <http://www.leidenmanifesto.org/>.

<sup>17</sup> European Commission. Evaluation of Research Careers fully acknowledging Open Science Practices; Rewards, incentives and/or recognition for researchers practising Open Science. Brussels: European Commission. Available from: <https://doi.org/10.2777/75255>.

# Acknowledgements and Endorsements

## Acknowledgements

The National Framework was prepared by the National Open Research Forum for the Implementation Group of Innovation 2020 (I2020 IG). The I2020 IG, whose membership includes relevant Government departments and agencies, oversees the implementation of Innovation 2020, Ireland's whole of Government strategy for Research, Development, Science and Technology. The I2020 IG has endorsed the National Framework.

The National Open Research Forum (NORF) is co-chaired by the Higher Education Board (HEA) and the Health Research Board (HRB), with secretariat from the Department of Business, Enterprise and Innovation (DBEI) and support from the Department of Education and Skills (DES). It combines the expertise of representatives from policy, research funding, research performing, library sector and other key stakeholders in the research system across Ireland. Individual Working Groups address key areas of open access publications, FAIR research data, and research infrastructure.

The National Framework was edited by the chairs of the individual NORF Working Groups with the co-chairs of NORF:

- Niamh Brennan, Trinity College Dublin
- Patricia Clarke, co-chair and Health Research Board
- Brian Galvin, Health Research Board
- Eoghan Ó Carragáin, University College Cork
- Gemma Irvine, former co-chair and Higher Education Authority

Thank you to all of the NORF members who participated in this process and other stakeholders who contributed to the open consultation.

## **Initial Endorsements**

Key stakeholders who have provided formal endorsement for this National Framework prior to its formal announcement include:

- **Departments**

- Department of Agriculture, Food and the Marine (DAFM)
- Department of Business, Enterprise and Innovation (DBEI)
- Department of Education and Skills (DES)
- Department of Communications, Climate Action and Environment (DCCAE)

- **Agencies/ Institutions**

- CONUL (The Consortium of National and University Libraries) Ireland
- Cork Institute of Technology (CIT)
- Digital Repository of Ireland (DRI)
- Environmental Protection Agency (EPA)
- Health Research Board (HRB)
- Higher Education Authority (HEA)
- Irish Research Council (IRC)
- National Library of Ireland (NLI)
- OpenAIRE National Open Access Desk for Ireland
- Royal College of Surgeons in Ireland (RCSI)
- Science Foundation Ireland (SFI)
- Sustainable Energy Authority of Ireland (SEAI)
- Teagasc
- Technological Higher Education Association (THEA)
- Technological University Dublin (TU Dublin)
- The Research Data Alliance Irish Node (RDA Ireland)
- University College Cork (UCC)

Further information on the Irish National Open Research Forum is available from:  
<http://norf-ireland.net/>



Rialtas na hÉireann  
Government of Ireland



Prepared by the National Open Research Forum.  
Co-chairs provided by the Health Research Board and  
the Higher Education Authority and supported by the  
Department of Business, Enterprise and Innovation  
and the Department of Education and Skills.

<http://norf-ireland.net/>

Innovation 2020  
Ireland's Strategy for Research and Development,  
Science and Technology