Institutional open-access policy

Access, visibility, impact and preservation of the BCAM's research output online

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Index

01. Context 3

- A new approach to science communication 3
- Declarations on open access to scientific literature 3
- Open access: the European Commission, Research Centres and European Universities 3
- Spanish legal framework 6

02. BCAM's institutional open-access policy 8

- BCAM's DORA Committee 9
- Ethical research practices 9

03. License Typology 10

04. Interoperability of systems: BCAM Institutional Repository Data (BIRD) 11

05. Open Access Publishing 12

- Publishing 12
- Awarding of research activity points for open access compliance 12
- Activities included in this regulation 13
- Schedule for open access compliance 13
- Exceptions to the depositing of publications for reasons of confidentiality 13

1. Context

1.1. A new approach to science communication

Online open-access publishing of scientific papers and presentations from expert meetings (like conferences and seminars) now complements traditional publishing methods (such as science journals and conference proceedings).

Archiving copies of research publications in open repositories offers several key benefits:

- **Wider dissemination and greater visibility** of research results.
- **Increased impact** of publications, leading to more citations for authors and their work.
- **Enhanced visibility and better institutional positioning** for organizations authors are associated with.
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While scientific publishers' policies previously limited document archiving in repositories, nearly all now permit authors to deposit a copy of their publications in either a subject-specific or institutional repository.

This policy outlines the **baseline standards and guiding principles for BCAM to integrate Open Science (OS) into our organizational culture**. Our goal is to ensure **consistent practices across the institution**, aligning with **funder requirements** and **best practices** in research management and assessment.

1.2. Declarations on open access to scientific literature

In recent years many national and international declarations have been made in favour of open access to scientific literature. The Basque Center for Applied Mathematics (BCAM) is a signatory of the following declarations:

- ✓ *The Budapest Open Access Initiative BOAI20* ***(2022)***
- ✓ *San Francisco Declaration on Research Assesment* ***(2012)***
- ✓ *The Coalition for Advancing Research Assessment CoARA* ***(2022)***
- ✓ *The UNESCO Recommendation on Open Science* ***(2021)***

1.3. Open access: the European Commission, Research Centres and European Universities

In the EU framework, Open Access is known as the "*practice of providing online access to scientific information that is free of charge to the user and is reusable*". It is now widely recognized by the Academia as well as the Governing bodies that making research results more accessible to all contributes to better and more efficient science, and to innovation in the public and private sectors. In this sense, the European Commission supports open access, specifically in its funding programmes. Open access to scientific information in research and innovation refers to 2 main categories

- ☐ Peer-reviewed scientific publications (primarily research articles published in academic journals)
- ☐ Scientific research data: data underlying publications and/or other data (such as curated but unpublished datasets or raw data)

The European Commission, Research Centres and European Universities are working to promote open access to scientific and research results.

Research funding bodies:

- European Research Advisory Board. Scientific Publication: Policy on Open Access: A report calling for any results of publicly funded research to be lodged in an open-access repository as soon as possible after publication.

- Petition for guaranteed public access to publicly funded research results: This petition—sponsored by the DEFF, JISC, SPARC and SURF—has recently been endorsed by several European rectors' conferences (Italy, Norway, Portugal, Finland and others) as well as leading national research agencies and institutes (Wellcome Trust, Max Planck, CERN, CNRS and others).

European Commission:

- Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on scientific information in the digital age: access, dissemination and preservation

The aim of this document is to underscore the importance of access, dissemination and preservation of scientific information and give impetus to a series of relevant actions.

European Research Council:

- ***Open Access Guidelines for research results funded by the ERC.*** Document approved in December 2021.

European University Association (EUA):

- *Recommendations from the EUA Working Group on Open Access:*

    - In 2007 the EUA set up a working group on open access that has endorsed a series of recommendations aimed at encouraging open dissemination of content based on scientific and scholarly research (creation of digital repositories, incentives for depositing research results, raising awareness of the importance of open access, etc.).

    - These recommendations were endorsed at the plenary session of the EUA held in Barcelona on 27-29 March 2008. The recommendations are directed at the presidents of member universities, national rectors' conferences, and the EUA itself.
    - Presidents of universities and universities are recommended to pursue active policies and strategies with a view to making the scientific output of university institutions openly accessible, either by creating their own institutional repositories or participating in international subject repositories (following the guidelines developed by DRIVER, the European network of scientific repositories).
    - National rectors' conferences are recommended to work with research funding agencies and governments to implement the requirement for self-archiving of research publications. This means making publications based on publicly funded research openly accessible.

- Finally, it is recommended that the EUA itself take steps to seek the implementation of a self-archiving mandate that would apply to EU- funded research.

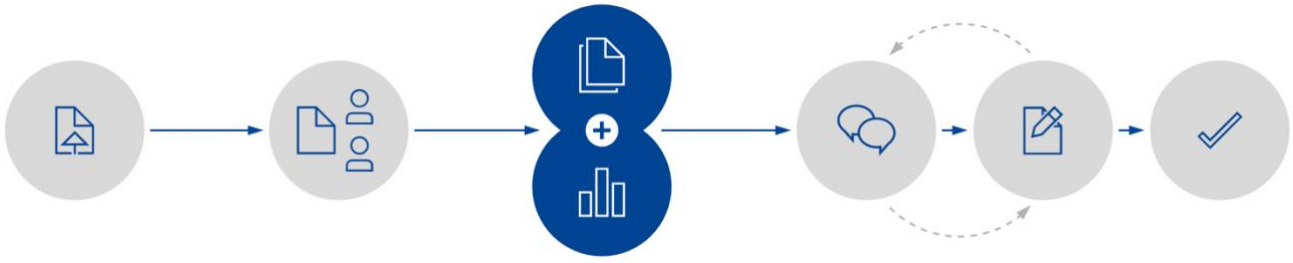
1.3.1. Open Research Europe

In this framework, the European Commission has set up the Open Research Europe, which is an open access publishing venue for European Commission-funded researchers across all disciplines, with no author fees.

Open Research Europe publishes articles across the Natural Sciences, Engineering and Technology, Medical Sciences, Agricultural Sciences, Social Sciences and Humanities stemming from Horizon 2020 and Horizon Europe funding. To be published, these requisites must be met:

- Each publication must have at least one author who has been, or still is, a recipient of a Horizon 2020 and/or Horizon Europe grant.
- Articles must be original.
- Articles are published using a fully transparent model; the authors are solely responsible for the content of their article.
- Invited peer review takes place openly after publication and once peer review has been completed and the platform has been formally approved by bibliographic databases, articles that pass peer review will be indexed there.
- All articles are published open access under a “CC-BY license”, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited, and leaves the copyright of the article with the current copyright holder (usually the author or their institution). As the specific version of the CC BY license applied to specific content may change due to periodic updates, the license is shown below the article abstract.

The publishing process in Open Research Europe is the following:



Article Submission

Submit research via a single-page submission system. See the Article Guidelines for information about submitting different article types. Track your submission via My Account.

Prepublication Checks

Our in house team of professional editors carries out comprehensive prepublication checks to ensure that all policies and ethical guidelines are adhered to. Find out more about these prepublication checks and what is required.

Publication & Data Deposition

Once the article has passed the prepublication checks, a fully typeset version is published with a DOI enabling immediate viewing and citation as well as indexation in Google Scholar. Once the article is published it cannot be sent to another journal for review and

Open Peer Review & Article Revision

Expert reviewers are selected and invited, and their reviews and names are published alongside the article, together with the authors' responses and comments from registered users.

Send to Indexers & Repositories

Authors are encouraged to publish revised versions of their article. All versions of an article are linked and independently citable. Articles that pass peer review are indexed in external databases such as PubMed, Scopus, and Google Scholar.

1.3.2. Research data management

The usage of the data always must be according to the data management plan. A useful tool to find templates or create a new one is the Openaire ARGOS: https://argos.openaire.eu

On the other hand, regarding digital research data generated in the actions, it is essential to consider that it must be managed according to the FAIR Principles, which were defined in a March 2016 paper in the journal Scientific Data by a consortium of scientists and organizations:

- Findable: Metadata and data should be easy to find for both humans and computers.
- Accessible: Once the user finds the required data, they need to know how they can be accessed, possibly including authentication and authorisation.
- Interoperable: The data usually need to be integrated with other data. In addition, the data need to interoperate with applications or workflows for analysis, storage, and processing.
- Reusable: The ultimate goal of FAIR is to optimise the reuse of data. To achieve this, metadata and data should be well-described so that they can be replicated and/or combined in different settings.

In this sense, another useful tool are the public questionnaires for self-assessment on FAIRness:

- FAIR data self-assessment tool: online questionnaire and expedition of certificate (https://ardc.edu.au/resources/working-with-data/fair-data/fair-self-assessment-tool/)
- FAIR-Aware: self.assessment online. The assessment will take between 10-30 minutes, after which you will receive an overview of your awareness level and additional tips on how you can further improve your FAIR skills. (https://fairaware.dans.knaw.nl/)
- How FAIR is your data? A Checklist produced for use at the EUDAT summer school to discuss how FAIR the participant's research data were and what measures could be taken to improve FAIRness. https://zenodo.org/records/1065991

1.4. Spanish legal framework

1.4.1. Spanish science, technology and innovation Law 17/2022

The Spanish Law 17/2022 on Science, Technology and Innovation contemplates significant measures to promote open access, article 37:

> *"Open Science: The public agents of the Spanish Science, Technology and Innovation System will promote the dissemination of the results of scientific, technological and innovation activity, and that the results of research, including scientific publications, data, codes and methodologies, are made available in open access. Free and open access to results will be promoted through the development of own or shared institutional or thematic open access repositories. Research staff in the public sector or whose research activity is mainly financed with public funds and who choose to disseminate their research results in scientific publications, must deposit a copy of the final version accepted for publication and the associated data in institutional or thematic open access repositories, simultaneously with the date of publication. Beneficiaries of research, development or innovation projects financed mainly with public funds shall at all times comply with the open access obligations set out in the grant*

conditions or grant agreements of the calls concerned. Beneficiaries of public support and grants shall ensure that they retain the intellectual property rights necessary to comply with open access requirements. Research results available in open access may be used by public administrations in their evaluation processes, including the evaluation of research merit. The Ministry of Science and Innovation will facilitate access to open access repositories and their interconnection with similar national and international initiatives, promoting the development of systems that facilitate this, and will promote open science in the Spanish Science, Technology and Innovation Strategy, recognising the value of science as a common good and following European recommendations on open science. In addition to open access, and always with the aim of making science more open, accessible, efficient, transparent and beneficial to society, the Ministries of Science and Innovation and Universities, each in their respective fields of action, as well as the Autonomous Communities within the framework of their competences, will also promote other initiatives aimed at facilitating free access to and management of data generated by research (open data), in accordance with the international FAIR principles (easy to find, accessible, interoperable and reusable), to develop open infrastructures and platforms, to promote the publication of scientific results in open access, and the open participation of civil society in scientific processes, as developed in article 38. This shall be compatible with the possibility of taking appropriate measures to protect, prior to scientific publication, the rights to the results of the research, development and innovation activity, in accordance with national and European regulations on intellectual and industrial property, plant varieties or business secrets."

1.4.2. State Plan for Scientific and Technical Research and Innovation (PEICTI)

The State Plan is the main instrument of the General State Administration for the development and achievement of the objectives of the Spanish Strategy for Science and Technology and Innovation (EECTI). The EECTI 2021-2027, currently in force, is structured in two state plans, the 2021-2023 State Plan, which is currently being implemented, and the 2024-2027 State Plan. The plans include state aid for R&D&I carried out by the National Government. A considerable part of this aid is implemented through competitive calls for proposals.

The PEICTI 2021-2023 has been drawn up with the contributions and priorities of public research centres, universities, technology centres, business associations, technology platforms and experts from the scientific, technical and business community.

1.4.3. National Open Science Strategy 2023-2027

The National Open Science Strategy (ENCA) for the period 2023-2027 brings together all the commitments relating to open science adopted by different public agents in the system, those included in the reform of the Law on Science, Technology and Innovation, approved in September 2022, Law 17/2022; the Spanish Strategy for Science, Technology and Innovation 2021-2023; and the State Plan for Scientific Research, Technology and Innovation 2021-2022; as well as reviewing the international and national context in the field of open science.

2. BCAM's institutional open-access policy

In line with national and international contexts, and endorsing relevant declarations, BCAM has developed its own policy to leverage the internet's potential to boost the visibility, impact, and recognition of our authors' academic output and BCAM as an institution. Specifically:

- BCAM **promotes open online access** to academic, scientific, and technical publications authored by its faculty, research staff, and students.
- BCAM **recommends** that its authors publish their academic work in **open-access scientific journals** (or those allowing authors to deposit copies in open repositories) and/or in **open information repositories** recognized by the scientific community.
- BCAM **requires** that academic and research staff employed by (or linked to) the center **deposit their academic publications**—including journal papers, conference texts, and scientific and technical reports—in its own institutional repository: **BIRD (BCAM Institutional Repository Data)**, accessible at http://bird.bcamath.org.
- BCAM **undertakes to increase the visibility and interoperability** of publications in BIRD by using the **Dublin Core international metadata standard**, the **OAI-PMH protocol** (Open Archives Initiative – Protocol for Metadata Harvesting), **URN/Handle identifiers**, and **Creative Commons licenses**.
- BCAM **shall take measures to safeguard** authors' **copyright, intellectual property, and confidentiality** rights for publications deposited in BIRD.
- BCAM **shall preserve, ensure, and maintain perpetual access** to scientific publications stored in BIRD.

This Policy applies to all research outputs and activities conducted by members of BCAM, or those utilizing BCAM resources. This comprehensive scope includes, but is not limited to:

- **Funded Projects:** Research and outcomes resulting from projects with internal or external funding.
- **Collaborations:** Joint research and outputs produced in collaboration with other institutions or individuals.
- **PhD Programmes**: All scholarly work, including theses and publications, produced as part of BCAM's PhD programs.

Also, this policy applies to all outputs and knowledge contributions created, authored, co-authored, or overseen by individuals engaged in activities at BCAM. This includes, but isn't limited to:

- **Academic Publications:** This covers a wide range of academic publications such as peer-reviewed articles, conference papers and presentations, preprints, working papers, books, book chapters, monographs, and all theses and dissertations.

- **Research data & supporting materials:** This encompasses research datasets, associated metadata, data management plans (DMPs), lab notebooks, methodologies, preregistration plans, and project-specific Open Science (OS) plans.

- **Research software & code:** We include research software, applications, code, algorithms, programming scripts, and computational models.
- **Outreach & learning materials**: This category covers materials like books and book chapters, brochures, infographics, posters, public engagement and audiovisual content, workshop and seminar materials, teaching materials, and learning objects derived from research activities.
- **Official BCAM outputs:** This refers to BCAM's official documents, including technical documents, annual reports, and policy briefs.

2.1. BCAM's DORA Committee

The Declaration on Research Assessment (DORA) recognizes the need to improve the ways in which researchers and the outputs of scholarly research are evaluated. This declaration was originated in 2012 during at the Annual Meeting of the American Society for Cell Biology in San Francisco. It has become a worldwide initiative covering all scholarly disciplines and all key stakeholders including funders, publishers, professional societies, institutions, and researchers.

Following the DORA declaration's guidelines and development of the Strategic Plan 2022-2025 BCAM founded its DORA Committee. The duties of this Committee are the following:

- Monitor the outputs of scholarly research
- Analyse them according to the DORA principles
- Propose improvement actions

2.2. Ethical research practices

BCAM is committed to fostering an environment of open science built on the highest standards of research ethics and integrity. Researchers at BCAM are central to upholding these principles. Their responsibilities include:

- **Ethical and responsible conduct:** Researchers must conduct their work ethically and responsibly, ensuring the integrity of the research process and their published work. This includes considering the social, environmental, and human health impacts of their findings and adhering to the highest standards of research ethics and integrity.
- **Transparency and disclosure:** Researchers must disclose all actual or potential conflicts of interest and funding sources that could influence their work or its interpretation. This should be done through formal statements in published papers and other relevant communications. Additionally, they should report all necessary information about potential partnerships or funding opportunities to ensure alignment with BCAM's values and commitment to Open Science (OS) principles.
- **Integrity in communication**: When communicating research findings to diverse audiences, including the media and policymakers, researchers must uphold integrity. This means providing accurate, validated

content in clear and accessible language, avoiding sensationalism, stressing the limitations and implications of their work, and safeguarding sensitive or confidential information.

- **Responsible peer review:** Researchers are expected to conduct peer reviews responsibly and respectfully. Assessments should be timely, fair, unbiased, and based solely on the scientific merit of the work. Reviews should be thorough, constructive, and aimed at improving research quality, with criticisms specific and substantiated by evidence. BCAM encourages participation in open peer-review processes.
- **Reporting misconduct:** Researchers have a responsibility to report any suspected research misconduct, plagiarism, or ethical concerns to the appropriate authorities.
- **Ethical Open Science practices:** When engaging in Open Science practices, researchers must carefully consider ethical implications, particularly concerning data privacy, informed consent, and the potential misuse of research findings by third parties.
- **Managing data accessibility:** If full data openness is limited by ethical, privacy, confidentiality, security concerns, or third-party restrictions, researchers must: 1) Clearly outline these limitations in the data availability statement 2) Implement protective measures such as data sharing agreements, anonymizing personal data, or employing controlled access and encryption methods 3) Consider alternative sharing options like synthetic datasets or data aggregation.

3. License Typology

When you're ready to publish, choosing the right license is essential. BCAM's Open Access Policy is guided by the principle of "*as open as possible, as closed as necessary*." This means we encourage you to select licenses that promote broad use, modification, and sharing of your work.

For software and other digital content**, open-source licenses** are generally the most appropriate choice. These licenses grant recipients the right to use, examine, modify, and distribute the content and any subsequent modifications. They are fundamental to fostering free and open-source development, enabling the community to build upon and improve existing work.

BCAM suggests using one of the following open-source licenses:

- **GNU General Public License (GNU GPL):** This is a widely used free software license (also known as copyleft) that guarantees end-users four key freedoms: the ability to run, study, share, and modify the software. If your work uses the GPL, its terms and conditions must be made available to anyone who receives a copy. Licensees who adhere to these terms are permitted to modify, copy, and redistribute the work or any derivative version. Software under the GPL can be used for any purpose, including commercial applications.
- **GNU Lesser General Public License (LGPL):** The LGPL is a free-software license that offers more flexibility than the GPL. It allows developers and companies to use and integrate software components released under the LGPL into their own software without being required to release the source code of their own components under a copyleft license. The key difference from the GPL is that the LGPL permits linking with programs that are not licensed under the GPL family or other compatible licenses.
- **GNU Affero General Public License (GNU AGPL):** The GNU AGPL is a free, copyleft license specifically designed for software meant to be run over a network. It includes a provision that requires the corresponding source code of modified versions to be prominently offered to all users who interact with the software over a network.

Choosing one of these licenses helps ensure your work aligns with BCAM's commitment to open access and contributes to the broader open science ecosystem.

4. Interoperability of systems: BCAM Institutional Repository Data (BIRD)

BCAM academic and research staff shall be able to use the BIRD platform to self-archive their academic publications (deposit document files) in BIRD institutional repository, particularly:

a) Journal papers
b) Texts published in conferences
c) Scientific and technical reports
d) Master and Doctorate Thesis
e) Book of chapters

In cases a) and b), the author may opt to deposit:

- **The preprint (i.e. pre-referring): preprint** is an article that has not yet undergone peer review
- **The postprint (published version):** the publisher's PDF (peer-reviewed) and/or the official URL for the publication.
- **The postprint (author's final draft):** The reviewed document submitted by the author prior to its publication in a journal (peer-reviewed). (This is the final version sent to the publisher by the author before it is actually published)

The BCAM Staff Team shall ensure the standardisation and quality of bibliographical references entered into the BIRD system by authors and shall make the full text of publications visible online via BIRD Repository, **except in cases when this is not possible due to issues related to confidentiality and/or industrial and intellectual property rights.**

The general policy of making full-text versions visible online shall not apply when documents cannot be made publicly available because:

- Publishers or other holders of exploitation rights have not given their permission.
- They are subject to confidentiality agreements and/or contain information that is confidential.
- They contain information on research activities carried out at the centre, the dissemination of which may affect the BCAM's industrial property rights (e.g., documents describing inventions that may be patentable).

In these cases, only bibliographical references for the documents in question shall be displayed at BIRD (BCAM Institutional Repository Data). If possible, the documents shall be made openly accessible at a later time when:

- Permission has been obtained from the holders of exploitation rights.
- The embargo period established by the publisher or the person subject to confidentiality has expired.

- A patent application that protects the invention to be disclosed has been filed.
- In other cases in which this step is permissible.

5. Open Access Publishing

5.1. Publishing

For a journal article to be available as an open access publication, one of the following routes must be:

- **Self-archiving (green way):** Authors archive their articles themselves in a institutional repository BIRD and a thematic repository such as arXiv to make them available online and to enable them to be reused. Often, the articles deposited will have been published originally by journal publishers that charge a fee for their services (e.g. Elsevier, Springer, IEEE); without these publishers' authorisation, self-archiving is not possible. Each publisher's editorial policy and self-archiving conditions will give details of the uses or types of exploitation that publications may be eligible for. Each publisher decides whether it will allow authors to self-archive their articles and, if so, the specific version that can be deposited in a repository, that is, the "preprint", the "postprint" or the publisher's layout version.

- **Open access journals (gold way):** Journals that follow the gold route ensure open access to the articles they publish without charging subscription or access fees; therefore, either authors themselves or the institutions to which they belong must cover the costs of publication.
- **Hybrid model:** Some subscription-fee journals also publish open access articles (hybrid model). These are articles for which the authors or the organisations to which they belong pay an additional fee for open access publication. The other articles in the same issue of the journal are only available to users who have paid the subscription fee.

5.2. Awarding of research activity points for open access compliance

Co-authors of the journal article, academic units and research groups who wish to be awarded the corresponding research activity points must take one of three routes mentioned above.

- In the case of self-archiving, a copy of the article must have been deposited in BIRD, a thematic repository or a repository belonging to another institution. To ensure access to the article and its conservation, the authors must provide the postprint and specifically the author's final draft before the article is published in the journal. Provided that the holder of the exploitation rights allows it, the postprint of the article will be published as an open access publication in BIRD. If open access is not a possibility, it will be deposited in "closed" form to facilitate access to it and its conservation. The corresponding research activity points will also be awarded in this case.
- In the case of open access journals or journals that allow a hybrid model, a copy of the article must also be deposited in BIRD. Co-authors, units and research groups will receive the corresponding research activity points.

5.3. Activities included in this regulation

A journal article is defined as any scientific publication that is published in a journal or serial publication (such as a book series), regardless of whether it has been presented at a conference or sent to a journal for publication. This excludes books.

5.4. Schedule for open access compliance

The deadline established for adding scientific results in BIRD is:

- As soon as possible and at the latest on publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in BIRD if the result is in the framework of European Grants. For results funded by other grants, Preprints are also accepted.
- Ensure open access to the deposited publication — via BIRD repository — at the latest:
    a. On publication, if an electronic version is available for free via the publisher, or
    b. Within six months of publication (twelve months for publications in the social sciences and humanities) in any other case.

5.5. Exceptions to the depositing of publications for reasons of confidentiality

In the event that the author or authors of the article manifest the impossibility of depositing a copy of the publication because it is subject to a confidentiality agreement or for other reasons, this fact must be proven and the Research Committee shall resolve each case.