Open Science Policy

Introduction

Open Science is an umbrella term embracing 'movements and practices aiming to make scientific knowledge openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community' (UNESCO Recommendation on Open Science, 2021). Essentially, Open Science builds on the scientific principles of research integrity and reproducibility as a response to the ethical imperative of science towards itself and towards society, along with the key values of equity and inclusiveness.

Open Science emerged from the urge to make scientific publications more openly available in the early 2000s, when Open Access began to take momentum as compiled in several international initiatives and declarations. Whereas Open Access to publications and research data is still the cornerstone of Open Science, the collection of practices continues to evolve and broaden its context of application. Overall, the transdisciplinarity of the movement implies that a transition towards Open Science is a cultural change involving all stakeholders in and beyond academia. Accordingly, funders, research-performing organizations and their associations play a key role in enabling this transition by embedding Open Science in their institutions.

IDIBAPS, by means of this policy, recognizes 'openness' as one of its guiding principles and values, and commits to promoting it by adopting Open Science practices enabling Open Access to publications and other research outputs, FAIR (Findable, Accessible, Interoperable, and Reusable) and responsible research output management, and an advancement in research assessment and evaluation. These commitments will be accompanied by a promotion of education on these topics and an encouragement to uptake further Open Science practices and tools by the research community (Fig. 1).
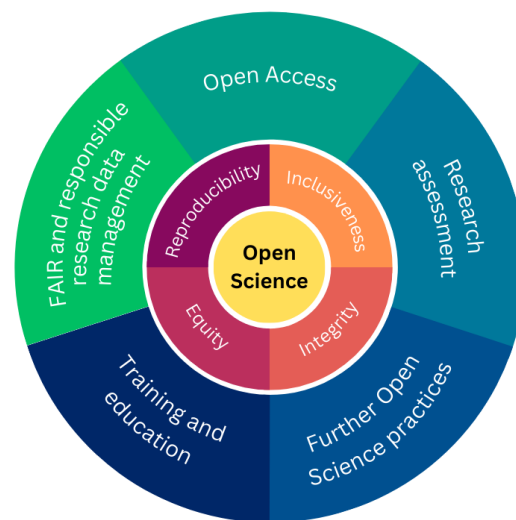

Figure 1. Summary of the Open Science tracks included in this policy and the values in which they are based.

Jurisdiction and Effect of Policy

This policy applies to the entire IDIBAPS community: researchers, students, visiting scientists and permanent or temporary staff executing or supporting research at our institution. The mandates of this policy apply to all research activities conducted at IDIBAPS and establish baseline standards for the institution. In cases where research is funded by a third party with stricter ruling of Open Science mandates than IDIBAPS, any agreement with that party takes precedence over this policy. In collaborative projects, Open Science practices should be internally agreed upon and, in case less strict requirements than IDIBAPS are set, the Scientific Coordination Office may be contacted for guidance.

To ensure the representation of all the involved stakeholders' interests, this policy has been elaborated with the support of a **Working Group on Open Science** comprising members of the research community, scientific facilities, and managerial departments, and received input by two external experts. This policy will be reviewed and updated one year after its first approval and at least every three years since then.

Transitional clause

IDIBAPS acknowledges certain flexibility in the implementation of this policy in accordance with the pace of the cultural change that transitioning to Open Science implies. Thus, the mandates of this policy that were not expressed in the previous institutional policy on Open Access to Publications will be subject to a transitional implementation period. During this period, an approval by the Strategy Director may be sought to engage in activities that imply major deviations from the mandates and recommendations established in this policy. This clause will be revised one year after the document's approval.

Rights, Responsibilities and Duties

IDIBAPS is responsible for:
- Designating reference repositories compliant with the FAIR principles and European Open Science Cloud (EOSC) technical specifications.
- Providing guidance, support, tools, and resources on the following processes:
  - creating, using, and maintaining an Open Researcher and Contributor Identifier (ORCID) profile.
  - elaborating data management plans (DMP) by providing institution-tailored templates and access to resources to facilitate their completion.
  - depositing research outputs at IDIBAPS' reference repositories as well as identifying other trusted repositories.
  - ensuring that research data are managed in accordance with the FAIR principles.
  - selecting appropriate usage rights among a comprehensive set of open and restricted licenses.

- managing personal data, including <u>sensitive personal data</u>, in relation to Open Access.
- Building the infrastructure and services for the storage, safekeeping, sharing and long-term preservation of data and other records.
- Having Intellectual Property Rights and Data Protection policies in force to support Open Science.
- Mandating the creation, use and maintenance of ORCID profiles. IDIBAPS uses ORCID to track and document institutional <u>research outputs</u>.
- Having in place, maintaining, and managing an institutional Current Research Information System (<u>iMarina</u>).
- Appointing the appropriate staff at the Scientific Coordination Office as reference for all Open Science-related matters.
- Embedding Open Science practices in recruitment, research assessment and evaluation criteria beyond the provision of Open Access to publications and responsible data management.
- Supporting and empowering the transition to Open Science through training and awareness-raising actions targeting researchers and other employees.
- Ensuring that acquisition of Open Science and related skills is an integral part of professional training and career development offered to researchers.
- Seeking the necessary resources to ensure compliance and implementation of this policy.
- Monitoring policy compliance by both researchers and the institution.

Researchers are responsible for:
- Managing <u>publications</u>, <u>data</u>, and other <u>research outputs</u> in adherence with the mandates expressed in this policy and with precedence of the applicable national and international legal and ethical requirements, the institutional Intellectual Property Rights, Data Protection, and Good Scientific Practice policies.
- Depositing <u>publications</u>, <u>research data</u> and/or associated <u>metadata</u> at <u>trusted disciplinary</u> or <u>multidisciplinary repositories</u> that comply with the <u>FAIR principles</u> and ensure long-term safe preservation.
- Considering any potential exploitation interests, such patent protection, prior to opening access to any <u>research outputs</u>.
- Choosing the appropriate type of licensing for their <u>research outputs</u>.
- Retaining the copyright of their manuscripts by, when possible, avoiding the signature of <u>Copyright Transfer Agreements</u> (CTA) that transfer to publishers more rights than those necessary for publication.
- Creating an ORCID profile and maintaining its records up to date. Associating their ORCID to all research activities and <u>outputs</u>.
- Maintaining an updated <u>iMarina</u> profile.

Open Access to Publications

- IDIBAPS requires researchers to deposit an electronic copy of the full text of their publications (published or postprint version) in *Dipòsit Digital de la Universitat de Barcelona* (DDUB) via iMarina or, alternatively, in other trusted Open Access repositories. Deposit must be done at the latest at time of publication or, in case an embargo period applies, as established by the project's funders. Researchers are held responsible for the timely deposit of their publications.

- Deposit in any Open Access repositories applies to articles published in restricted-access journals ("Hybrid Open Access" and "Green Open Access") as well as in Open Access journals ("Gold Open Access" and "Diamond Open Access"). In the case of "Green Open Access", IDIBAPS requires the full text of the publications to be made publicly available as soon as possible, with a maximum embargo period established by the project's funder.

- IDIBAPS requires researchers to assign a license to their publications (postprint version) and strongly encourages Creative Commons Attribution (CC BY) license or, by exception, other more restrictive licenses.

- IDIBAPS strongly encourages authors to retain the ownership of the copyright of the manuscript (postprint version and, when possible, published version), and transfer to publishers only those rights necessary for publication. This can be achieved by,
    - when signing a Copyright Transfer Agreement (CTA), ensuring that the publisher allows for the postprint or published version to be uploaded in a repository under a CC BY license, or
    - negotiating an author's retention rights strategy with publishers.

  These actions are necessary to comply with the Open Access requirements established above, as they ensure open access to published or postprint versions of research articles.

- IDIBAPS encourages researchers to deposit in Open Access repositories publications authored prior to the date of effect of this policy.

FAIR and Responsible Research Data Management

- IDIBAPS strongly encourages the elaboration of a data management plan (DMP) for every research project.

- IDIBAPS strongly encourages researchers to deposit research data and/or associated metadata in a trusted disciplinary repository that is preferably EOSC-federated or, alternatively, in a multidisciplinary repository such as the Catalan Open Research Area Research Data Repository (CORA.RDR). This recommendation is based on the principle that any data needed to validate the results of scientific publications should be available.

- Data deposited at any repositories must be compliant with the FAIR principles.

- IDIBAPS aligns with the principle 'as open as possible as closed as necessary' in relation to research data. Accordingly, IDIBAPS encourages compliance with

open data principles by assigning the licenses Creative Commons Public Domain Dedication (CC 0) or Creative Commons Attribution (CC BY) to data upon deposit in repositories. If data cannot be open due to legal, privacy, ethical or other reasons, including research exploitation interests, these should be clearly stated in a data management plan (DMP) or justified upon request. Nevertheless, metadata compliant with the FAIR principles should be available at the mentioned repositories to ensure that they are findable.

- IDIBAPS requires a minimum archive duration for research data of 10 years after depositing in trusted repositories. It is the researchers' responsibility to ensure compliance with this archive period for data deposited at any repositories. In the event that these records need to be deleted or destroyed after the expiration of the required archived duration or for legal and ethical reasons, such actions need to consider all legal and ethical perspectives.

The requirements of this section align with CERCA's Open Data Management Strategy.

Open Access and FAIR management of other research outputs and methodologies

In addition to scientific publications and research data, IDIBAPS encourages open access and FAIR-compliant management of other research outputs, including software and databases, as well as of research methodologies such as experimental protocols and workflows. In accordance with the above-mentioned principle that 'any data needed to validate the results of scientific publications should be available', it is assumed that the methodologies used to analyse research data reported in publications should also be available for transparency, reproducibility, and reusability reasons.

Research Assessment and Evaluation

IDIBAPS commits to contributing to the advancement of research assessment by rethinking current evaluation practices and adopting new criteria, tools and processes in the assessment of research projects and individual researchers. This commitment is framed by the signature of the Agreement on Reforming Research Assessment (2022) and IDIBAPS' membership to the Coalition for Advancing Research Assessment (CoARA). The institutional reform of research assessment practices will be based on CoARA's core commitments:

1. Recognise the diversity of contributions to, and careers in, research.
2. Base research assessment primarily on qualitative evaluation supported by responsible use of quantitative indicators.
3. Abandon inappropriate uses in research assessment of journal- and publication-based metrics.
4. Avoid the use of rankings of research organisations in research assessment.

When possible, the new assessment and evaluation criteria will reward and incentivize Open Science practices, including compliance with this policy, and consider the adoption of open science metrics and 'responsible metrics'.

Further Open Science Tracks

IDIBAPS encourages the uptake of Open Science practices beyond those stated in this policy such as the participation in outreach and citizen science projects, the engagement in open lab practices, the experimentation with open peer review, the use and creation of open educational resources, and the involvement in open reproducible research practices aimed at increasing research reproducibility. If considered appropriate, the uptake of these practices may be acknowledged in internal evaluation processes, as established in the previous section.

Training and Educational Resources in Open Science

IDIBAPS commits to disseminating this policy as well as promoting its implementation within IDIBAPS' community. In order to equip researchers and support staff with the necessary skills to adopt and advance in the implementation, IDIBAPS commits to providing regular training and educational resources on topics related to Open Science, with special focus on those contemplated in this policy. Whereas trainings will be embedded in already existing seminar series and training programmes, such as the Toolbox Talks series and the Stepping-stone programme, educational resources for autonomous learning will be disseminated via internal communication channels. Education in Open Science will be aimed at the entire IDIBAPS community, including technical and administrative support staff and researchers at all career levels.

Glossary

- **Article Processing Charge** (APC): a fee paid to the publisher to make an article freely available online (sometimes referred as '**publication fee**').
- **Citizen Science:** scientific research that involves the participation from the public at any point of the project.
- **Copyright Transfer Agreement** (CTA): in the context of this policy, a legally binding agreement that transfers the copyright of a manuscript from the authors to a publisher.
- **Data Management Plan** (DMP): a document that describes the lifecycle of research data, outlining how they will be managed during and after the research project, including the collection, processing, analysis, description, preservation and sharing of the data.

- **Diamond Open Access**: the process of achieving open access through publication in an open access journal that does not involve <u>Article Processing Charges</u> (APCs).
- **Disciplinary repository**: online repositories that archive <u>research outputs</u> from a specific field or subject area (also known as '**subject repository**').
- **Embargo**: a period imposed by publishers during which works cannot be released in open access.
- **FAIR principles**: guidelines for good data management practice that aim at making data <u>F</u>indable, <u>A</u>ccessible, <u>I</u>nteroperable, and <u>R</u>eusable.
- **Gold Open Access**: the process of achieving open access through publication in an open access journal that involves <u>Article Processing Charges</u> (APCs).
- **Green Open Access**: the process of providing open access through an open access repository (also known as '**self-archiving'**).
- **Hybrid Open Access**: the process of achieving open access through publication in a restricted access journal via payment of <u>Article Processing Charges</u> (APCs).
- **iMarina**: an institutional Current Research Information System (CRIS), meaning a database to store, manage and exchange data from researchers and research activities at IDIBAPS.
- **Metadata**: descriptors used for describing, tracing, use and management of the deposited item (e.g., title of publication, author(s), institutional affiliation, name of journal where the publication has been accepted).
- **Multidisciplinary repository**: online repositories that archive <u>research outputs</u> from different fields and subject areas.
- **Open Educational Resources**: teaching, learning and research materials that make use of tools like open licenses that permit their free reuse, continuous improvement, and repurposing by others for educational purposes.
- **Open Peer Review**: scholarly review mechanism where both the identities of the reviewer and the author are known to one another during the review and publication process, or where reviewer reports are published alongside the articles, or where not only 'experts' can comment, or a variety of combinations of the above or other novel methods.
- **Postprint version**: final version of a peer-reviewed manuscript without any editorial layout (also known as '**Author Accepted Manuscript**').
- **Publication**: peer-reviewed published (or under publication) work of researchers based in the institution. In this policy, it refers to original articles, reviews, editorials, case reports, letters, and consortium publications.
- **Published version**: final version of a peer-reviewed manuscript including the editorial layout (also known as '**Version of Record**').
- **Research data**: data (such as statistics, results of experiments, measurements, observations, interview recordings, images, etc.) used to validate the results presented in scientific publications or any other data collected during a project.

- **Research output**: any outcomes resulting from a research project; in this policy, mostly -but not exclusively- referring to scientific publications, <u>research data</u>, software, and databases.
- **Responsible metrics**: the ethical and appropriate use of citation-based metrics (e.g., citation counts, Journal Impact Factor, H-index) and other quantitative means of evaluating research.
- **Sensitive personal data**: personal data that are subject to specific processing conditions, including health-related data, genetic data, biometric data processed solely to identify a human being, data concerning a person's sex life or sexual orientation, data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs or trade-union membership.
- **Trusted repository**: a repository that meets quality standards and provides reliable long-term access to digital resources. This definition is not limited to Trusted Digital Repository (TDR)-certified repositories (e.g., CoreTrustSeal, ISO 16363, Nestor Seal), but also refers to uncertified internationally recognized repositories validated by agencies, societies and/or renowned institutions in their respective fields.

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https://cerca.cat/wp-content/uploads/2022/08/OpenData-cat.pdf

Coalition for Advancing Research Assessment (CoARA)
https://coara.eu/

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Creative Commons (CC)
https://creativecommons.org/

Dipòsit Digital de la Universitat de Barcelona (DDUB) – Centre de Recursos per a l'Aprenentatge i la Investigació de la Universitat de Barcelona (CRAI UB)
http://diposit.ub.edu/dspace/

European Open Science Cloud (EOSC)
https://eosc-portal.eu/

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For any queries, please contact:
Scientific Coordination Office
IDIBAPS
coordinacio.cientifica@recerca.clinic.cat