

OPEN SCIENCE AT GACR

Open Science, též označovaná jako „otevřená věda“, je přístup k vědeckému procesu, který klade důraz na spolupráci, efektivní sdílení znalostí a zlepšenou dostupnost a opětovnou použitelnost výstupů výzkumu pomocí digitálních technologií a nových nástrojů. Principy Open Science podporují aktivní účast vědecké komunity a snaží se vytvořit otevřenou a transparentní prostředí pro vědecký výzkum.

Open access to reviewed scientific publications (Open Access) and to research data (Open Data) are considered core pillars of Open Science.

OPEN ACCESS TO REVIEWED SCIENTIFIC PUBLICATIONS

Open Access to the outputs of research financed from public resources allows for their wide availability and quick sharing, which contributes to innovation, increased competitiveness, and international cooperation. There is no binding legal framework governing open access to scientific publications or addressing the duty to publish through Open Access. Several initiatives, declarations and recommendations exist in this area (such as Commission Recommendation (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information, which recommends member states define and implement clear strategies relating to Open Access to scientific publications and research data which arise from research financed through public funds, including detailed action plans). Act No 130/2002 on support for research and development from public funds and amending certain related acts (R & D Support Act) does not address the topic of Open Access at all. The stance of the Czech Science Foundation (GACR) to Open Access to scientific publication is built on the following principles:

- **Motivating investigators** to publish through Open Access;
- **Increasing the number of outputs** published through Open Access (excluding outputs where this is by definition impossible, e.g. monographs);
- Increasing the availability of outputs and thereby **increasing the effectivity of resources** used for work on projects;
- Including the costs of Open Access to scientific publications in **the eligible project costs** at GACR;
- Supporting transformative agreements of Czech institutions with the goal of increasing the number of scientific publications with Open Access;
- Supporting **all formats of Open Access: Green Open Access, Gold Open Access and Diamond Open Access**;
- Giving investigators the freedom to choose what form and publication media they wish to publish their outputs in.

The main criterion for choosing projects at GACR is scientific excellence in an international scope. Therefore, GACR supports that the outputs of scientific publications be made available through Open Access if it is customary and beneficent for the given scientific field. It also supports Open Access to scientific publications financially, i.e. by making the costs of publishing in Open Access eligible project costs.

Although GACR is aware of all the positives of publishing through Open Access, it also respects the freedom of scientific research established in Article 15 of the Charter of Fundamental Rights and Freedoms, which includes the free choice of scientific output publication connected with the free choice of every scientist to publish their scientific outputs in their chosen publication medium. It is the responsibility of each scientist to consider what scientific journal is appropriate for their research, taking into account the expected impact of the publication on the scientific community, the quality of the review process etc.

In this way, GACR supports publication through Open Access based on voluntariness – another reason for this is that implementing a blanket requirement to publish through Open Access would mean lowering the competitiveness of scientific fields where this practice is not yet standard (for example medical sciences, humanities etc.). A different situation would arise if Open Access publishment was implemented by all important providers worldwide or if the practice of Open Access was adopted by all major publishers in all fields of science.

Of course, despite its undeniably positive qualities, Open Access to scientific publications also has its pitfalls – for example, several publishers with Open Access have not implemented a review process of adequately high quality. The publishment through “Golden Open Access” is a form of Open Access which significantly increases the costs of scientific publishing” by being connected with the payment of article processing charges (APCs) and could create a financial barrier for some researchers. A mandatory policy of Open Access might also lead to lower-quality scientific publications, since researchers would not be adequately motivated to publish in important journals, simply because they are / would not be publishing through Open Access.

The policy of GACR towards supporting Open Access to scientific publications on a voluntary basis and allowing for related costs to be part of a project’s eligible costs is wholly in compliance with Commission Recommendation (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information, with Act No 130/2002 on support for research and development from public funds and amending certain related acts (R & D Support Act) and with the 2021+ National Research, Development and Innovation Policy of the Czech Republic. While GACR does not require Open Access and simply supports it, the popularity of publishing through Open Access continues to grow. In the past 10 years, the share of publications we have supported published through Open Access has doubled.

MANAGEMENT OF RESEARCH DATA

Research data is legally defined¹ as information (not including scientific publications) in digital form which is collected or created during research or development and is used as proof in the research or development process or is commonly accepted by the scientific community as necessary to validate the findings and outputs of research or development. The management of research data is closely connected with the creation and updating of Data Management Plans (DMPs).

Compared with the non-existent legal status of Open Access to scientific publications, research data management is governed by a clearly and concretely defined legal framework which GACR is required to take into account and adhere to in its activities. The basis of this framework is Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information and its transposition, among others, into the R & D Support Act. An amendment to the R & D Support Act has made it mandatory for a beneficiary supported by public funds through this Act to provide free access to research data to third parties upon requests (including research data that is an annex to scientific publications or a part of them). This requirement must be fulfilled 12 months after provision of support from public finances has concluded. An exception to this requirement is research data under the protection of the outputs of authorial, inventive, or similar creative activity or data protected by the special rights of database procurers of which the beneficiary is the executor. It is also possible to refuse the request for sharing research data if the research or development funded through this Act was not fully financed from public finances or if the provision of research data would lead to an inordinate interference with the rights to privacy, business secrets, state security or other legitimate concerns of the beneficiary.

This amendment also introduced a number of requirements for the provider, including GACR, in relation to the management of research data, such as (i) the obligation of the provider to provide the research data of research organisations supported from its budget chapter to the operators of IS VaVal including information about their publication and information about their protection in accordance with special legal regulations; (ii) to amend the parts of research grant agreements regarding the management of research data and the availability of research data in accordance with the principle that research data is not published only in justified cases; (iii) provide public support only in the case of publication of truthful and timely information about (but not limited to) research data through the information system of R & D etc. Taking into account these legal obligations, GACR has adopted standards in relation to Open Data, compliance with which it also requires from the beneficiaries of its provided targeted support.

To support the effective fulfilment of these obligations, GACR has decided to include research data management in its policy of grant project support. The policy of GACR in relation to research data management and the formulation of DMPs is based on the following principles:

- **Support of the Open Data and FAIR data initiative;**

¹ § 2 paragraph 2 sect. o) of Act No 130/2002 on support for research and development from public funds and amending certain related acts (R & D Support Act)

- **Implementation of a guideline which introduces the obligation to publish Open Data for all projects** supported through public finances;
- The costs of data management being **eligible project costs**;
- **All scientific publications** sent for publication by GACR project investigators should have **traceable Open Data** (with legislative exceptions – cases such as protection of intellectual property, business secrets, state security or justified business concerns of the beneficiary or third;
- The investigators of GACR projects are **required to provide a Data Management Plan** by the date by which they provide the first Interim Report of their project, and to update this plan as needed;
- Data should **not only be open, but also FAIR**, i.e. Findable, Accessible, Interoperable, and Reusable;
- Data Management Plans should be **as simple as possible to create, ideally through an application** which guides investigators through the various aspects of their creation;

In regards to projects currently being worked on, GACR requires a DMP to be provided in the form of a short description of the research data that will be utilized, collected or created during work on the project and of the ways in which it will be handled (mainly information about the availability of research data in adherence to the principle that research outputs and data will not be made available only in justified cases). GACR requires the provision of a DMP by the date by which the first Interim Report is provided. This DMP must be amended, if necessary, in the next Interim Report or in the Final Report.

A DMP should, at the very least, contain information about:

- (i) What research data the beneficiary will create, work with, or collect during work on the project;
- (ii) What methods and principles of data management the beneficiary will utilize;
- (iii) If and how the data will be shared or published and, if necessary, a justification of why the research data cannot be published and shared (the beneficiary must not publish information about research data that would indirectly interfere with the rights to protection of intellectual property, trade secrets, state security or justified business concerns of the beneficiary or a third party);
- (iv) In what way the data will be stored during work on the project and after its completion.

GACR recommends procuring the services of a data management expert (data steward) during a project or a similar expert position which will deal with the creation, coordination, and management of research data. The costs of such a position are considered eligible project costs.

Suitable instruments for the creation and management of DMPs recommended by GACR include, but are not limited to, the following:

- The generic DMP template (which is based on the template for the Horizon Europe programme, which is available in the NTK repository [[Data Management Plan template \(techlib.cz\)](https://techlib.cz)])

- [Data Stewardship Wizard \(ds-wizard.org\)](https://ds-wizard.org) (tool by ELIXIR, it helps research workers to understand what is necessary for research data management built on the principles of FAIR and helps them create their own DMP)
- [DMPonline \(dcc.ac.uk\)](https://dcc.ac.uk) (tool supporting the creation of project DMPs, including saving)
- [Argos \(openaire.eu\)](https://openaire.eu) (online DMP tool)

Both publication costs (Article processing charges / APCs) for Open Access to reviewed scientific publications and the costs of research data management (for example the costs related to processing and saving data and its anonymization) are considered eligible project costs for projects financed by the Czech Science Foundation.