UNIGE OPEN SCIENCE ROADMAP 2025-2028

WHY OPEN SCIENCE PLAYS A KEY ROLE AT UNIGE

The University of Geneva (UNIGE) fully supports the vision of open science promoted by LERU since 2018 and by UNESCO since 2021. Far from being reduced to a set of technical tools, open science marks a profound shift in academic practices and affects research, training and innovation : "Open Science represents a culture change in the way stakeholders in the research, education and knowledge exchange communities create, store, share and deliver the outputs of their activity" (LERU, 2018). In particular, it promotes open access to publications, responsible and FAIR (Findable, Accessible, Interoperable, Reusable) data management, open educational resources, the sharing of codes and protocols, the recognition of all contributions and citizen involvement in the construction of knowledge (UNESCO, 2021, pp. 7-16). It is based on the principles of transparent, reproducible, inclusive, collaborative, participatory, responsible, ethical, flexible and sustainable science (UNESCO, 2021, pp. 18-19).

This approach is in line with national initiatives (swissuniversities, 2021, 2024; Swiss Academies of Arts and Sciences, 2019, 2024; Swiss National Science Foundation, 2025) and numerous international initiatives (such as EUA, 2022; EU Commission 2021, 2025; DORA, 2012; CoARA, 2022). It is aligned with UNIGE's fundamental missions and values: integrity, social responsibility, inclusion, and service to the common good.
UNIGE also affirms a broad and multidimensional vision of scientific excellence, which is reflected in particular in open and transparent practices, diversity of approaches, societal impact, reproducibility of results, and an ethical and supportive environment. In an increasingly polarized world, responsible, reliable, and open science is becoming a true duty.

In the current context, this vision is encountering four major developments:
- **Growing economic tension surrounding the current model of scientific publishing.** The cost of Read & Publish agreements is skyrocketing (Brayman et al., 2024), without guaranteeing truly universal access or a sustainable model for public research institutions. Many universities around the world are reviewing these commitments (SPARC, 2025), exploring more balanced strategies between access, dissemination and sustainability.
- **The decisive role of open science in the era of artificial intelligence**. AI models are now trained on massive, sometimes biased or opaque data sets. It is the responsibility of universities to provide reliable, documented and verifiable scientific data to ensure transparent, traceable and ethical AI in the use of data.
- **The generational aspiration for more open science.** The next generation of academics is embracing open science practices (e.g., Farnham et al., 2017, Luedtked, 2022): peer-reviewed preprints, open archives, data sharing and protocols. Institutions have a responsibility to secure this movement by ensuring that these practices are valued and recognized in evaluation, particularly through engagement with CoARA: institutions that sign the ARA agreement commit to reforming the methods and processes used to evaluate research, researchers and research organizations.
- **The expansion of Open Science.** Open Research Data, Knowledge Security, Open Research Information, Open Educational Resources, Citizen Science — these dimensions require new strategies, tools and governance frameworks. UNIGE is committed to this structuring, building on its initiatives with Yareta, data governance, and the promotion of FAIR principles.

Open Science is therefore not just a requirement for rigor: it is a pillar of the future of knowledge.

WHERE ARE WE NOW?

UNIGE has laid solid foundations for open science. Strategically, this commitment is reflected in:

- A Strategic Plan 2024-2034 (2024, p. 5), a Code of Ethics and Professional Conduct (point 3b), and a 2024-2027 Objectives Agreement (COB 5, Objective 4.5) which support open science
- A Directive (Memento 0328) published in 2019 regarding the obligation for researchers to deposit their publications in the UNIGE Open Archive
- A Charter for Open Science at the University of Geneva (2021)
- An Open Access Policy at the University of Geneva
- An Institutional Policy on Research Data Management
- Active participation in national and international initiatives, including DORA, CoARA, COIMBRA, LERU, swissuniversities, SwissRN
- Internal participatory governance, with an Open Science Committee and an Open Science Steering Committee (see appendix *Governance of Open Science at UNIGE*).

At the operational level, UNIGE has several services that support and advise researchers (see appendix *Governance of Open Science at UNIGE*). It also has several tools at its disposal. In addition to a Publication support fund of articles in fully Gold OA journals, it has deployed several infrastructures, including:

- An operational open archive (UNIGE Open Archive) since 2008, including a personal DASHBOARD of OA publications and synchronization with ORCID
- A digital platform for hosting open access journals (Diamond Road) published within UNIGE ("Open Access Publications")
- Yareta, the research data consultation and archiving portal designed in full accordance with FAIR principles
- The Hedera platform, which offers a common environment for digital humanities: standard tools, corpus interoperability, visual resources, semantic data
- A dynamic, lively and accessible research funding information system (research database, research dashboard, etc.) including data related to grants for research projects conducted at UNIGE for all major funders.

CURRENT CHALLENGES

The Open Access economic model: urgent need for reform

Read & Publish (R&P) agreements, which combine access to content with the possibility of publishing in Open Access in commercial publishers' journals, represent a growing budgetary burden for universities. These so-called "transformative" contracts are often neither financially sustainable nor truly transformative in terms of openness. According to a recent review conducted in the United Kingdom (Brayman et al., 2024), R&P costs have increased by an average of 18% over the last three years, while the proportion of truly open publications remains below 45% for some publishers. This is also the case in Switzerland, for example at EPFL (Open Access at EPFL, 2024).

Faced with this dynamic, many institutions around the world are re-evaluating their strategy. The SPARC Big Deal Cancellation Tracker lists more than 50 universities that have renounced global contracts with publishers such as Elsevier, Springer Nature and Wiley. The savings generated by these withdrawals sometimes amount to several million dollars annually—for example, the University of California estimated savings of USD 10 million per year after withdrawing from its contract with Elsevier in 2019 (SPARC, 2025).

In addition to the cost issue, these withdrawals are based on a fundamental criticism: publishers do not offer satisfactory conditions for truly open science (restrictive licenses, embargoes, lack of access to metadata, etc.). Thus, the University of Lorraine did not renew its subscription with Wiley in 2024, not only for cost reasons but also for strategic and practical reasons, choosing alternative roads (Wiley Series 1/3, 25.9.2023). The green road (Green OA) therefore appears to be a credible alternative: it allows researchers to deposit their accepted manuscripts in open archives (institutional or disciplinary) and guarantee free access to them without paying publication fees (APCs), as long as the imposed embargoes (often 6 to 12 months) are respected. Under certain conditions, almost all major publishers (including Springer Nature and AAAS) now allow this type of self-archiving.

A recent study (Fraser et al., 2023) showed that in Germany, the lack of direct access to Elsevier did not significantly penalize researchers' publications or citations over a 24-month period. This confirms that Green OA, when properly supported, can be compatible with active and visible scientific production. This also applies to the diamond road. This model, which provides free access to scientific publications for authors and readers, is currently a rapidly growing alternative ("Diamond Open Access," 2025).

Attractiveness and risks of alternative roads for early-career researchers

Early-career researchers (PhDs, postdocs) are the most committed to Open Science. Their practices often already include peer-reviewed preprints, code or data sharing, the use of open archives, and participation in communities such as ReproducibiliTea or Open Life Science. The green road is therefore familiar and attractive to them, as it allows for:

- Rapid dissemination of results (via peer-reviewed preprints).
- No publication fees (particularly important in underfunded disciplines).
- Increased visibility in search engines and academic networks.

However, this transition also presents specific risks for this more exposed population:

- Some institutions or disciplines have different practices and remain attached to "journal names", which can limit the recognition of peer-reviewed preprints or accepted manuscripts in hiring procedures.
- Embargoes of 6 to 12 months can delay the visibility of work that is crucial for obtaining a position or a grant.
- In some disciplines in the humanities, the practice of peer-reviewed preprints is growing (e.g., in linguistics, philosophy, literature, history, and cultural studies) but is not yet widely adopted because some journals have conservative policies on this subject, particularly in relation to a concern for originality and first publication that is still prevalent in certain disciplinary fields (Curtis, 2025).
- Reviewers do not always consider peer-reviewed preprints to be "valid publications," although this is changing rapidly within academic communities.

To mitigate these risks, several measures are needed: promoting alternative roads such as the diamond road, adopting narrative CVs that highlight the wide variety of research activities and skills, including peer-reviewed preprints in application and evaluation files, supporting systematic deposit in open archives (with DOI and clear license), and offering ad hoc assistance with APC costs when necessary (e.g., for strategic publication in a Gold OA journal without an equivalent green road).

Finally, developments in research evaluation, driven by DORA and CoARA – of which UNIGE is a signatory (Castelltort and Bütschi, 2025) – represent a structuring opportunity: they encourage recognition of the diversity of scientific output and openness of practices, going beyond just bibliometric indicators. This provides a protective and rewarding framework for early-career researchers engaged in Open Science.

The transformative potential of Open Research Data (ORD)

ORD is a strategic pillar. Since the implementation of the Swiss ORD action plan (swissuniversities, 2021), a Data Management Plan (DMP) must be submitted for all projects funded by the SNSF and the EU. In this context, UNIGE has adopted an institutional policy and launched the Yareta platform, a research data network, to raise awareness of data management and long-term archiving in accordance with FAIR principles and with a view to sustainability. The Data Stewardship 2025–2027 project, which aims to optimize the management (GDR) and openness of research data (ORD) within the institution and to consolidate the Research Data support network, will further strengthen this dynamic.

The transformative potential of ORD is significant: improved reproducibility, accelerated collaborative research, enhanced transparency and the promotion of datasets as scientific entities in their own right. Initiatives such as OpenAIRE and EOSC in Europe are laying the foundations for a shared infrastructure. UNIGE's strategy in this area is fully in line with the activities of these networks.

Data security and digital sovereignty

Openness cannot be achieved without caution. The FAIR principles must go hand in hand with the SAFE principles, which guarantee the security, integrity and confidentiality of sensitive data. The Swiss Confederation recently commissioned a national working group (NAG) on Knowledge Security. At the European level, the

Commission promotes an approach that is "as open as possible, as closed as necessary". UNIGE has adopted this same principle by incorporating it into its Charter for Open Science at the University of Geneva, and must integrate the dimensions of sovereignty, compliance and protection into its Open Science strategy, particularly in sensitive areas (health, personal data, international partnerships, dual-use research).

Structuring new fields of open science
Open Science is now expanding into new areas that are still largely unregulated but crucial, such as:
- Open Research Information (ORI)
- Open Education (OE)
- Citizen Science

Following the Barcelona Declaration (DORI, 2024), ORI supports openness and transparency in research information: it covers research information systems (projects, publications, affiliations, funding, research instruments, etc.), which are essential for governance, transparency and responsible evaluation. The gradual integration of freely accessible research information into narrative CVs, the development of an interoperable standard and coordination with Swiss infrastructures are key areas of focus for the coming years.

Open Education and Citizen Science, although less advanced at UNIGE, are powerful levers for the democratization of knowledge and citizen participation. Open Education, particularly Open Educational Resources (OER), supports the free availability of educational resources for use, adaptation and distribution free of charge. Citizen Science promotes citizen participation in all or part of the scientific life cycle, makes the scientific process more inclusive and accessible, and encourages new forms of collaboration and work. UNIGE wishes to develop methodological support tools and actions to promote these practices.

Within the framework of Open Science, other areas are also developing, such as Open Source Software, which promotes the sharing of source code in order to encourage transparency, collaboration and redistribution, and Open Innovation, which encourages the sharing of knowledge to accelerate and enrich innovation processes. This diversity of initiatives, which is by no means exhaustive, is fully recognized and supported by UNIGE.

PRIORITIES AND ACTIONS 2025–2028

In order to establish the objectives and strategic priorities of the roadmap, a consultation with faculty representatives within the COPIL Open Science was conducted between February and March 2025. The results identified the priorities and showed broad support for the proposed strategic orientations and the implementation of actions to support them. In addition, discussions were held with the main departments concerned (DIS, DiSTIC, SSR) between July and August 2025, enabling the Rectorate to define five strategic priorities. Each priority is governed by an objective and translated into several actions. The roadmap thus identifies five strategic priorities: the implementation of a sustainable, fair and responsible Open Access strategy (priority 1); the promotion of Open Research Data through increased visibility, support and deployment of best practices in data management and data sharing (priority 2); the gradual development of new fields of Open Science in line with available resources (priority 3); the implementation of a coherent policy for the security and governance of sensitive data, aligned with scientific sovereignty and knowledge security (priority 4); and finally, the strengthening of skills, communication and culture in the field of Open Science, notably through targeted incentives for early-career researchers (priority 5).

PRIORITY 1 – Open Access (OA)

Objective: To implement a sustainable and fair OA strategy based on principles of restraint in scientific publishing

1.1. Implementation of CoARA: guidelines for appointment committees to promote narrative CVs; consideration of green deposits, peer-reviewed preprints, datasets, open journals, etc. during appointments.
1.2. Strategic management and faculty consultation
- Establishment of an OA task force to define a model and strategies for sustainable OA at UNIGE by 2028 (e.g. based on the MIT Framework for Publisher Agreements model).

- Raising awareness among Professorial Boards ("collèges des professeur-es") about publication models and the costs of Gold OA, consultation of faculties and departments to assess disciplinary needs and priorities.
- Strategic support for alternatives to the Gold OA publishing model through participation in the National Diamond Open Access Consortium and consolidation of the role of the Open Archive.
- Annual publication of R&P costs (based on the OpenAPC model, e.g. https://treemaps.openapc.net/apcdata/openapc/#/ETH%20Zurich/) and increased transparency on the internal distribution of R&P funds.
- Resizing of the Gold OA publication support fund (2026), with a review of eligibility criteria to ensure greater fairness while continuing to support for early-career researchers.
- Exploring ways to promote restraint in scientific publishing, in particular through the adoption of narrative CVs.

1.3. Promotion of alternative roads, in particular through support for diamond journals and books and assistance with depositing publications in the Open Archive, the development of which must continue.

PRIORITY 2 Open Research Data (ORD)

Objective: Raise awareness, provide support, and deploy best practices in data management and ORD

2.1. Continuation of the Data Stewardship project: strengthening the network of research data management specialists by faculty (2025–2027).

2.2. Deployment of ORD events with the participation of researchers (concrete examples of FAIR data by researchers).

2.3. Development of ORD management protocols for the institution, based on the *Programming Protocol and Exit Strategy* of the NCCR Evolving Language: https://evolvinglanguage.ch/wp-content/uploads/Exit-Strategy.pdf

2.4. Continued development of data management platforms.

2.5. Mapping of needs by scientific field to adjust tools (volumes, formats, security).

PRIORITY 3 – New fields of Open Science

Objective: Deployment of new fields of Open Science according to available resources

3.1. Open Research Information (ORI)
- Integration of ORI principles into research evaluation, particularly for indicators used internally and in rankings (see CoARA Action Plan).
- Analysis of ORI integration into UNIGE information systems (BDID, SSR, DIS), in line with the recommendations of the Barcelona Declaration.

3.2. Open Education (OE)
- Integration of Open Educational Resources (OER) into the narrative CVs of teaching and research staff (2025)
- Inventory of OER resources produced at UNIGE (2026–2027). *Not funded at this stage*
- Feasibility analysis for a shared OER platform (2026) or for the use of existing national solutions. *Not funded at this stage*

3.3. Citizen Science
- Inventory and promotion of existing projects. *Not funded at this stage*
- Launch of a training programme, methodological guides and seed funding for new projects (2026–2028). *Not funded at this stage*

More broadly and in a non-restrictive manner, UNIGE is open to emerging areas of Open Science (Open Source Software, Open Innovation, Open Infrastructure, etc.) and welcomes new initiatives.

PRIORITY 4 – Knowledge Security and Scientific Sovereignty

Objective: Ensure a consistent policy for the security and governance of sensitive data

4.1. Implementation of an "Open & Safe" programme
- Development of a FAIR + SAFE best practice guide based on the "Five Safes" ([UK Data Service](#)).
- Training focused on the risks associated with sensitive international partnerships, personal data and misuse.

4.2. Integration into institutional governance
- Link with the national NAG group and the Swiss Knowledge Security (SHK) strategy.
- Integration of security considerations into ethical assessments, DMPs and research agreements (in collaboration with SSR, Legal Service, CUREG).

4.3. Capacity building
- Establishment of a "data security and open science" advisory service

PRIORITY 5 – Cross-cutting themes: training, communication, culture

Objective: Strengthen skills, communication and culture in Open Science, in particular by providing incentives for early-career researchers

5.1. Onboarding and continuing education
- Integration of information on Open Access and ORD into the onboarding programme for new employees (2026–2027).

5.2. Communication and culture

5.3. Development of a targeted communication strategy to promote existing training, services and support

5.4. Continued institutional commitment:
- Active participation in national and international networks (LERU, CoARA, swissuniversities, SwissRN).

Acknowledgements

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APPENDIX

GOVERNANCE OF OPEN SCIENCE AT UNIGE

The University of Geneva's Open Science strategy falls under the responsibility of the department in charge of research. It is based on shared governance, combining institutional leadership, cross-functional coordination of services, and active participation by the faculties.

Strategic management

Two committee assist the Vice-Rectorate in developing and monitoring the Open Science roadmap:

- **Open Science Committee**
  Comprising the Vice-Rectors for Research and Teaching, the Directorate of the Scientific Information Division (DIS), the Directorate of the Research and Grants Office (SSR) and two senior advisors to the Rectorate, it provides support and assistance to the Vice-Rector in developing the roadmap's guidelines, proposes areas of work and ensures their follow-up. The Vice-Rectorate for Digital transformation and AI will be invited to discuss matters falling within its area of competence.

- **Open Science Steering Committee (COPIL)**
  Acting as a consultative, co-creative and advisory body, the Open Science Steering Committee brings together representatives from the Rectorate, central services (DIS, DiSTIC, SSR, etc.) and faculties. It advises the Vice-Rector on the operational implementation of actions, identifies needs and develops concrete projects.

Operational implementation

The practical application of the roadmap relies on several key departments:

DIS (Scientific Information Division)
  - Advice and training in scientific publishing (Open Access, copyright, etc.)
  - Negotiation and management of Read & Publish licenses
  - Administration of the publication support fund
  - Hosting of open access journals (OAP)
  - Support for data management throughout the research lifecycle (DMP, archiving)
  - Coordination of the Data Stewardship network

DISTIC (Division of Information and Communication Systems and Technologies)
  - Technical solutions for storage, archiving (Yareta, Hedera), and publication
  - Development of digital platforms and solutions for researchers
  - Support for big data and innovative projects (including AI)

SSR (Research and Grants Office)
  - Support for research project applications, particularly in ORD calls
  - Legal advice and support for contracting
  - Management of the research funding information system, including the research database

A cross-disciplinary and participatory approach

OS governance at UNIGE values the autonomy and initiative of the faculties. They are both beneficiaries and agents of change, through their participation in the OS Steering Committee, their local representatives (Research Data network, members of the Data Stewardship Steering Committee) and their initiatives and proposals for pilot projects.

The whole approach is based on a strong conviction: making openness a lever for quality, responsibility and impact in research. The 2025–2028 roadmap extends this commitment with a structured framework, clear priorities and a collective dynamic.