Open Science @ UM

This document outlines current Open Science developments and plans in the Netherlands, and in Europe, and suggestions for how to implement those developments and plans in the UM context. UM believes that Open Science will only grow from here, and formulates its ambitions, as well as concrete actions to take in the near future in this draft document requested by UM rector magnificus Rianne Letschert to be discussed with the Research Platform.

1. Summary of actions (more detail can be found in the text below)

Theme	Ambition	Actions
Awarding and remunerating Open Science behavior	• Open Science is awarded and valued	Define indicators and reward behaviour through several initiatives
Full Open Access to publications	• Awareness about authors' rights • Strive for 100% OA by 2020	Redefine policy, prioritise between disciplines and pilot with third party
Research data optimally suited for reuse	• 100% FAIR data by 2023 • As open as possible, as closed as necessary • Optimal reuse	Define indicators and facilitate FAIRness of data
Support and facilitate Open Science	• One-stop shop for researchers with any kind of Open Science questions	Bundle and communicate expertise via website, ambassadors, and Open Science community

2. Context

Open Science changes the world of publishing and scholarly communication fundamentally. New approaches in scientific processes are explored to open up science and scientific results, and to improve findability, accessibility, interoperability and reusability of all kinds of research data. New ways of distributing knowledge by using digital technologies and new collaborative tools enable people inside and outside of academia to benefit from the latest scientific insights.

Science crosses national borders. The European Commission identified in 2016 5 broad policy action lines: 1) Fostering and creating incentives for open science; 2) Removing barriers for open science; 3) Mainstreaming and further promoting open access policies; 4) Developing an open science cloud; 5) Embedding open science in society to make science more responsive to societal and economic expectations. Based on these action lines, the European Open Science Platform (EOSP) gives priority to work on: * Rewards and Incentives * Research Indicators and Next-Generation Metrics * Future of Scholarly Communication * European Open Science Cloud * FAIR Data * Research Integrity * Skills and Education and * Citizen Science. This was followed by a call for action to formulate national Open Science Agenda's.

The VSNU, together with funding agencies NWO, ZonMW and KNAW, the Ministry of Education, Promovendi Network Netherlands (PNN), SURF a.o. formulated in 2017 its key ambitions[1]:

1. Full open access to publications in 2020: Continue the Dutch approach for all Dutch research organisations and research areas whilst recognising their differences and similarities.
2. To make research data optimally suited for reuse: To set clear and agreed technical and policy-related preconditions to facilitate reuse of research data, including provision of the necessary expertise and support.
3. Recognition and rewards: To examine together how open science can be an element of the evaluation and reward system for researchers, research groups and research proposals.
4. To promote and support: To establish a 'clearing house' for all information regarding all available research support.

Participating in Horizon 2020 projects and having joined international partnership networks, Maastricht University supports YERUN's 2018 Open Science statement. It focusses on working on:

- A joint commitment, e.g. to work on a Living Lab Open Science to pilot, test and monitor Open Science initiatives and practices taking place at its institutions, and formulating an institutional Open Science Agenda which includes to have all publicly funded research output open access by 2020. Note that Plan / cOAlition S aims at speedy transformation towards full Open Access publishing in Europe.
- Embedded values, e.g. YERUN will train its researchers in Open Science via Open Education strategies, activities, and students' exchange, with a special focus on Early Career Researchers. Also, YERUN members will have a (new or renewed) code of conduct for research integrity that makes reference to Open Science practices and values, and YERUN members will work towards ensuring the availability of publically funded research as FAIR data, being as open as possible, as closed as necessary.
- Career development and recognition, e.g. YERUN members will strive to introduce Open Science practices in their assessment mechanisms for rewards, promotion and/or tenure, and YERUN members will encourage their researchers to participate in a "YERUN Open Science Champion" award.
- Open Science with Society and Collaboration at EU level and beyond.

Open Science is here to stay and Maastricht University needs to define its position and draft an agenda based on which directions to take. Below, this draft is presented; feedback of the Research Platform is welcomed.

3. What will Open Science @ UM look like?

CORE - Collaborative Open Research Education - is at the heart of the strategy of Maastricht University. Open stands for broad-minded, innovative, international and inclusive. Also, open as in Open Science and Open Access, committed to opening up research and research outcome, and make research data reusable where possible, aiming to become a "FAIR university" by 2023. Open Science is not a goal in itself, but rather a means to make best use of expertise and resources that are

[1] https://www.openscience.nl/binaries/content/assets/subsites-evenementen/open-science/nationaal_plan_open_science_the_netherlands_february_2017_nl_.pdf

already there, as well as a way to disseminate knowledge as relevant spot-on information for stakeholders outside academia, such as patient associations, governmental bodies and industry.

For Open Science to be successful, it must become embedded in regular research & HR policies, services, infrastructure etc. and not be regarded as an add-on or even competing avenue.

Therefore, we propose actions around 4 central themes, following VSNU's key ambitions:

1. Awarding and remunerating Open Science behaviour
2. Full Open Access to publications
3. Make research data optimally suited for reuse
4. Support and facilitate Open Science

3.1 Awarding and remunerating Open Science behaviour

What is happening already?

- Policymaking in working group Nationaal Platform Open Science (NPOS): recommendations and actions relate to addressing Open Science in research evaluation protocol (SEP), in HR policies and assessment procedures for grant funding.
- Launch of an openscience.nl website (in addition to the openaccess.nl website).
- Promoting awarding team effort instead/parallel to individual research effort.
- Actions on reforming the UFO (positions and job descriptions) by VSNU.

What is the ambition?

A vibrant Open Science research climate at UM, in which Open Science contributions in career paths and awards are valued.

What concrete steps to take?

a. Support a – researcher driven - Open Science Community (OSC, in line with other Dutch universities, connected to the already existing community CDDI) to share views and good practices on Open Science, to act as a sounding board, to advocate Open Science, etc.;
b. Develop – in alliance with CDDI-supporting services an Open Science toolkit and organize an Open Science challenge to encourage Open Science behavior (similar to Green Impact challenge). The award ceremony of this challenge can be held in the Open Access week.
c. Give support (practical, financial) to new ways of communicating research outcome.
d. Stimulate Open Science activities with YERUN members (as if a Living Lab).
e. Endorse the DORA principles by signing the statement by UM officials (as a follow up of VSNU endorsement).
f. Participate in (inter)national subsidy programmes to create open educational resources (e.g. in literacy training, Medicine study programme repository). Include Open Science (awareness) training in (research) master programmes.
g. Communicate regularly internally around Open Science and UM progress towards our goals. Look for occasions that fluently fit in, such as DIES ceremony, Brightland events etc.

3.2 Full Open Access to publications

What is happening already?

- Research funding policies NWO, EC Horizon 2020, Plan / Coalition S are in place
- Open Access contracts and memberships OA only publishers are in place or being negotiated (so called transformative agreements)
- Alternative publishing platforms, such as RechtopOpen, are set up
- Throughout the Netherlands, a pilot regarding copyright (Taverne amendment) is being conducted
- Universities report to VSNU on (open access) publishing

On UM level:

- UM Repository of publications (green OA) is in place
- UM has a basic repository policy regarding dissertations and a green OA policy that needs to be implemented
- Tailored information sessions by scholarly communications officer UL at research institutes
- UM offers researchers support in Open Journal construction
- UM has a membership at BMC, Open Library of the Humanities
- Pilots with making articles behind a publisher's paywall after the embargo period open access available via the UM repository (Taverne amendment)
- (ad hoc) reporting on OA progress (about 50% of UM publications are OA available).

What is the ambition?

- A maximum of UM publications is directly accessible via the repository for all stakeholders by 2020. 100% immediate OA may be difficult for some disciplines, and therefore, in communication around OA the focus will not be on attaining 100%, but on encouraging OA as a principle. We strive to have a 100% awareness among researchers about authors' rights.
- In case of embargo, at least metadata are available in the UM's CRIS and preferably in case of corresponding authorship, the author's peer-reviewed version of the full text of the article.
- Directly after ending of an embargo, the publisher's version of the full text of publications is made available in the repository.
- To enforce the branding / reputation of Maastricht University and make optimal use of research outcome outside academia.

What concrete steps to take?

a. Redefine the repository policy aiming at full coverage of UM research results
b. Provide assistance ('handjes') in filling PURE (and where appropriate change working processes)
c. Identify research domains that have high societal relevancy as well as interested third parties outside of academia who would benefit from access to this content. The current partnership between Springer / Nature (where UM is an active partner) can help to define these domains.
d. Pilot in one of these domains together with one external stakeholder how to enhance usage. An example of such a pilot could be to work with a patient organization to provide access to UM content in a relevant area, and assess how best to provide content for optimal usage.

Access, contributing to theme 1.

3.3 Make research data optimally suited for reuse

What is happening already?

- Introduction of products and services, such as infrastructure, standards, legislation
- Focus meetings with UL's, IT departments and researchers to extend the knowledge about reuse & FAIR data (working group NPOS SURF, universities, LDCRM), and metadata & interoperability
- Reporting on the reuse of data at Dutch Universities (working group NPOS)
- Reporting on data availability policies of journals with high Dutch publication numbers
- Funder policies are in place (EU, NWO)

Within Maastricht University:

- An Institute of Data Sciences (IDS) is established for data-driven discovery and research
- Datahub is in place for supporting researchers in the fields of data support, judiciary support and methodology support, within MUMC+ (intended to cover UM as well)
- A CDDI (Community of Data Driven Insights) is set up by Datahub, IDS, UL and ICTS for research data support (drawing up Data Management Plans, training in the use of facilities and the generic RDM support portal)
- Pilot projects concerning data-intensive research are taking place in all UM faculties
- Long term external storage facilities are present, starting with Dataverse Network including initial training & support
- Research IT infrastructure layers are in place.
  Consisting of:
    - High bandwidth network (MAASNet 4.0)
    - 100 GB per researcher dynamic storage
    - Archiving storage solution, including initial training & support
    - Setting up a general purpose High Performance Computing (HPC) facility

What is the ambition?

Become a FAIR university in 2023. This means that by 2023, 100% of data generated by UM researchers is made available internally for (re)use, and externally where applicable. Obviously, this is only done if desirable and possible, for instance in light of GDPR legislation. In other words, as

What concrete first steps to take?

1. Define KPI's regarding FAIR (on input, throughput and output level, such as number of training / trained students and researchers, quality of infrastructure, number of open datasets)
2. Apply FAIR way of researching according to these criteria.

For this theme, follow the current structure where CDDI with stakeholder involvement of IDS and other units, supervised by the CIO is in the lead. Note: the governance structure of CDDI is subject of discussions (state of affairs July 2019).

3.4 Support and facilitate Open Science

What is happening already?

- Advice, information and support in OA publishing (individuals, research institutes and research groups, library committees, Onderzoeksplatform / deans)
- Inventory of RDM training at Dutch universities (next step: share them as open educational resources), including Maastricht University

What is the ambition?

- One-stop shop for Open Science issues
- Excellent facilities
- An attractive working environment in which researchers feel valued

What concrete first steps to take?

a. Deliver information on Open Science @ UM online in one place (for example in the Research support portal) that includes also basic information about what Open Science encompasses
b. Prioritize the development of facilities and support according to the input of the Open Science Community (OSC).
c. Design a training open access / open science / RDM within the framework of the UM Graduate School (next step can be to work towards a research equivalent of the BKO).
d. Create a competence support team (data stewards, data engineers, etc).
e. Initiate a 'sounding board' of Open Science ambassadors, train these ambassadors to share and multiply information and create awareness within their faculty, department or research group. Incentivise them for taking up this role by providing funding for open science activities such as conferences or workshops. Note: this sounding board of ambassadors can be recruited from the Open Science Community (OSC).