

# Roadmap for Implementing Open Science Training Practices in Research Institutions



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FOSTER proposes a [roadmap of six actions to be implemented by research institutions](#) in order to foster a holistic transition towards Open Science practices in the European Research Area.

## Adapt & modernise qualification frameworks for Open Science skills with the following actions:

### 1 Make Open Science content mandatory in researcher training

Research institutions can ensure the transition towards Open Science by embedding training into ongoing educational programmes, such as PhD programmes & professional development, on a regular, standardised & mandatory basis.

### 2 Reward Open Science skills development

Formal and modularised courses should be assessed and awarded formal credits. Topics such as key competencies or good research practices can include Open Science topics and reward early career researchers with ECTS.<sup>1</sup>

### 3 Promote or offer offline & online Open Science trainings

Through various forms of training such as interactive hands-on sessions or online courses for self-learning, institutions can ensure they reach all researchers. If institutions cannot offer trainings, they can promote (online) trainings offered by other initiatives or projects.

### 4 Tailor & deliver Open Science training at all career stages

The young generation of scientists is a major audience for Open Science training.<sup>2</sup> Supervisors and researchers guide their mentees and are therefore a very important target group to recognise the value of Open Science training, too.

### 5 Tailor Open Science training to discipline-specific needs

In some research disciplines Open Science practices are already standard, whereas for others these are relatively new trends. Thus, training must be tailored to each discipline taking into account different research practices & needs.

### 6 Secure quality & relevance of Open Science skills

Trainers and advocates need to be empowered to deliver high quality trainings which improve practical skills. In order to secure the relevant Open Science skills, research institutions can reward efforts by including these competencies in their evaluation processes.

This [roadmap](#) relates to the recently published EC report *Providing researchers with the skills and competencies they need to practise Open Science*, which reveals a strong need for action. The report highlights the need to make researchers aware of the concept of Open Science and existing training options and to step up opportunities for researchers to participate in open access or open data courses.<sup>3</sup>

<sup>1</sup> European Credit Transfer and Accumulation System for higher education across the EU.

<sup>2</sup> Farnham et al. 2017: Early career researchers want Open Science. doi: [10.1186/s13059-017-1351-7](https://doi.org/10.1186/s13059-017-1351-7)

<sup>3</sup> EC Working Group on Education and Skills under Open Science 2017: [Providing researchers with the skills and competencies they need to practise Open Science](#).

The actions of research institutions regarding Open Science training are key in this development and can be summarised in **three steps**.

## 3 steps to implement Open Science practices

1. Enable change  
by providing **skills & knowledge**



2. Allow change  
by providing **support & time**



3. Motivate change  
by providing **incentives & rewards**

FOSTER contributes to the practical implementation of Open Science training by:

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| • Advocacy & awareness raising                                | ▶ Point to needed actions such as mandatory training & incentives  |
| • Collecting, structuring & developing new learning materials | ▶ Allow users to conduct & replicate trainings by reusing materials and to learn on introductory, intermediate & advanced levels     |
| • Extending the training capacity                             | ▶ Train the trainers, support them with resources and create a trainers network & directory  |
| • Providing training activities                               | ▶ Offer online courses, face-to-face workshops & discipline-specific guidance (life sciences, social sciences & arts and humanities) |