Educational Events

Most RIs aim to facilitate easy and efficient transfer of knowledge and sharing of the best practices among the RI service providers and their current and potential user communities. As many RI activities are concurrently taken place in local, national, regional, European and international level, it is important to ensure that the new knowledge is transferred efficiently across boundaries, such as spatial and disciplinary orientated boundaries, to allow maximum level of benefit for all the advancements and improve standardization and harmonization between similar RIs. Organizing a intensive or online course might be useful method for this.

Courses can be effective method for teaching internal to external communities (undergraduate and PhD students, scientist, engineers and technical staff) to use of RIs data, methods and/or instruments. Courses increase participants' level of understanding of the RI and engagement with it. Depending on the courses, its main objectives and target audiences, it can be carried out as intensive summer/winter school, field course, online course or a mixture of these to guarantee the best learning outcomes and value for money. Courses can include lectures, presentations (posters, oral or something else), group works, field or laboratory excursions and hand on works.

Organizing a course requires several different types of resources. First, one need to have a clear idea of the purpose of the course including the main learning objectives and then plan of the best methods to achieve it. Expenses depends on the venue, teaching methods, honorariums, participation fees, sponsorships etc. Advertising the course both to the potential teachers and participant in right level and channels is important and requires resources.

Several platforms exist for organizing online course like Moodle and MOOC (Massive Open Online Course). A MOOC is an online course often aimed for large-scale interactive participation and option of free and open access via the web. In addition to traditional course materials such as reading materials, videos, and problem sets, MOOCs integrate social networking by provide interactive user forums that help building a community for the students, professors, and teaching assistants. With a MOOC course, large number of students can participate at the same time without the need to travel to a course venue (climate friendly). However, planning, coordination and implementation of such massive online courses is challenging and time consuming.

Advantages: Increase the visibility and create a positive impression of the RI and its products. Possibility to widen the community and enhance the use of RI's data and products. Possibility to new scientific publications. Courses, especially online courses, can reach large number of participants and can be aimed for different target audiences. Online courses are often more ecological than intensive courses (no need to travel to the venue).

Challenges: The amount of needed resources can be challenging, money and time wise. Planning a MOOC course can easily take a year and include working hours from several persons. After the course, the maintaining an online course requires resources. It might be challenging to engage and attract experts and teachers to give (online) lectures, hold workshops, be course assistants or otherwise provide material to the course. Communication and control between local and remote co-organizers can be challenging.

Resources: Planning and organizing a course requires several resources and is often time consuming and expensive. A good overview of the logistics is needed to make all the practical arrangements. Experience in organizing events or courses (having the right contacts) might come in use when contacting different venues and local organizations (catering etc.). Capability to attract good prospective teachers is a needed talent and often personal contacts help in this. From the teachers, solid knowledge of the field is needed. Expenses depends on the venue, teaching methods, honorariums, participation fees, sponsorships etc.

Recommendation: Co-organization of a course brings several benefits (saves resources) but can be challenging and final outcome might not be the best for all organizers. Collecting feedback from the participants to further develop the course is highly recommended. Check beforehand the availability and quality of the to-be-used data and materials and that all technical solutions work as they should. Especially in China there might be challenges with internet-based services (Dropbox, Microsoft OneDrive, Skype, Google). Engage companies and establish sponsorships. Consider whether contact teaching is necessary or would distance learning (online course) be an option.

COOP+ project was a co-organizer in the Summer course on multidisciplinary use of cross-RI data. The course was organized within the 4th ICOS Summer School held in June 2017 at Hyytiälä Forestry Field Station, Finland. The course was carried out by the European Research Infrastructure ICOS in collaboration with the related H2020 projects ENVRI+, COOP+ and RINGO.

The summer school was mainly targeted to PhD students. The course gathered altogether 37 students with following gender balance: 18 male and 19 female participants. From the attendees, 8 were from ICOS candidate countries and 4 were from non-ICOS countries. More details of this course can be read from the COOP+ deliverable D4.3.

EISCAT Summer course2018: International course on technical solutions used in the incoherent scatter radar community was held as one part of the second joint space science school "Study Space Weather Effects from the Sun to the Ground" organized between the Asia-Pacific Space Cooperation Organization (APSCO2) and the International Space Science Institute in Beijing (ISSI-BJ3). The nine-day radar school was held in Sanya on the Chinese island of Hainan in October 2018. The co-locating the course with the school ensured opening up possibilities for improved connection between EISCAT users in Europe and in Asia, but also with researchers and groups with specialization not normally involving the use of incoherent scatter radar data. Target audience was Master and PhD students, as well as postdoctoral and early career scientist or engineers. For this course it was a great advantage to organize the course in China, but to be in visa free area. It was a good opportunity to make the local scientists to be aware of that their country is an EISCAT member country.

ENVRI and LifeWatch: International Summer School on"Data Management in Environmental and Earth Science Infrastructures: theory and practice" was organized by the ENVRIplus project in collaboration with LifeWatch e-Infrastructure. The school was mainly addressed at staff working in relevant international research infrastructures but was also open to Ph.D. students and post-doctoral researchers. (max 20 participants). The course se was built as a five-day summer school providing a unique insight into the contemporary debate on Data Management in the environmental and earth sciences. Leading scientists and experienced technical specialists addressed the topic from different perspectives. See the event's flyer.

For more than 10 years, approximately 60 to 70 students per year from Europe and outside Europe have been attending the various ACTRIS (previously EUSAAR or EARLINET) training sessions. ACTRIS advanced courses on "Advanced Analysis of Atmospheric Processes and Feedbacks and Atmosphere-Biosphere Interactions" organized every two years and targeting early-career scientists, or the ACTRIS Summer School on Aerosol Measurements targeting PhD students and engineers are good examples of successful training sessions. The new e-ACTRIS environment will develop advanced, state-of-the-art course materials and webinars, where appropriate in close cooperation with the RI members, make them available on the e-Training Platform, and deepen and extend or adapt already existing materials whenever possible.