Policy Brief

ENABLECARES or "Enabling careers: priming talent for success in biomedicine", a coordination and support action funded by the European Union under the H2020 programme, is a collaborative project that brings together five European institutions – IRB Barcelona (IRB), Radboud University (RU), Radboud University Medical Center (Radboudumc), Scuola Europea di Medicina Molecolare (SEMM) and the Novo Nordisk Foundation Center for Protein Research (CPR) actively involved in training the next generation of researchers in several fields of biomedicine. The goal of the project was to provide high-level training on open science, research data management and entrepreneurship to junior researchers, with the aim of increasing their employability. This goal was achieved through "Train-the-Trainers" and co-creation strategies that made the best use of the in-house expertise while ensuring that all the participating institutes implemented and integrated sustainable and impactful training programmes that benefit young biomedical researchers. To complement these training programmes, the project has further promoted the implementation of personalised career guidance at the participating institutes with a view to maximising the support provided to researchers for them to succeed in a professional career in academia or beyond. This document situates ENABLECARES within the context of European policy and summarises the main findings from the project´s implementation with a view to providing relevant recommendations.

1   ENABLECARES and the Skills Agenda for Europe

Either in academic research or beyond, enhancing the employability of young researchers through a strongfocus on their skillsis top priority. This is especially true in the European context, considering the simultaneous green and digital transitions that are currently underway and the paradigm shift in the nature of skills that future employees will require to face and excel in the new opportunities that will emerge.

In 2020, the European Commission reiterated its commitment towards placing skills at the heart of the EU policy by presenting the "European Skills Agenda", a 12-point action plan aimed at steering investment in people and their skills with sustainable competitiveness, social fairness and resilience as the key motivations[1]. Two of these actions directly address the need for upskilling scientists with a enhanced focus on entrepreneurial and transversal skills, perhaps an indication that these competencies will be given due importance in a European framework for research careers and corresponding ESCO classifications for research profiles.

It is increasingly clear that organisations like universities and research institutes that are involved in training young scientists, must take cognizance of this need and introduce robust and sustainable measures for upskilling researchers in response to these changing demands and policy directions. Integrating training itineraries that focus on transversal skills within a well-structured graduate programme is no longer only a recommendation, but a necessity. By doing so, these organisations

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can further assuage the increasing uncertainty faced by graduate students concerning their career post-PhD.

In a survey conducted among graduate students of different backgrounds by Nature in 2019, when asked about their top-five concerns in their graduate journeys: about 79% of respondents indicated "uncertainty about job or career prospects", while about 70% chose "the availability of faculty research jobs, beyond postdoctoral positions"[2]. About half the respondents indicated, that it was highly difficult to learn what career possibilities existed.

ENABLECARES was conceived to bridge this apparent gap between the policy push for enhanced skills training among scientists and the uncertainty felt among young researchers with regards to their career possibilities within and outside academia. Over two years of implementation, the project has addressed this challenge by strengthening career development tools, developing relevant content and quality in-house training capacity aimed at enhancing the personal strengths of young researchers in key areas including open science and entrepreneurship, and allowing them to progress in their career.

2 Main findings and recommendations from ENABLECARES implementation

The ENABLECARES partners all run recognised doctoral programmes of excellence. Three of the ENABLECARES partners (IRB Barcelona -coordinator – Radboud University and the University of Copenhagen) are holders of the **HRS4R excellence award**. It is also worth mentioning that all partners have broad experience in EU-funded MSCA actions (e.g. ITN, COFUND), showing their proven commitment with the **Innovative Doctoral Training Principles (IDTP)** and the **European Charter and Code for Researchers**.

2.1 Tailored contents and training methodology, a key added value

By design, ENABLECARES is a collaborative initiative of leading biomedical research institutes in Europe – a network mooted and strengthened through a previously successful project called ENABLE. ENABLE was a project funded through the 2016 Science with and for Society work programme of the European Commission and helped to successfully organise several international, interdisciplinary gatherings involving audiences from a range of disciplines, cultures and generations.

ENABLECARES was constituted with a view to deriving the maximum benefit from this already established network of high-calibre institutions towards strengthening their individual doctoral training programmes, thereby serving as a model for similar institutions around Europe.

The overall development strategy of ENABLECARES in relying on the network has allowed all institutions to gain in-house capacity to create and deliver new and/or adapted training courses on Entrepreneurship and Open Science. This was achieved by having internal personnel acquire the

necessary knowledge and skills from experienced experts within the network through two separate and complementary strategies: "Train-the-Trainers" and co-creation. In other words, ENABLECARES built on the complementary expertise of the partner institutions and used this common knowledge to the service of the project through the combined co-creation of content and the implementation of the Train-the-Trainers method.

In particular, ENABLECARES used the Train-the-Trainers model for the development of the Open Science skills courses, led by expert trainers from Radboudumc and RU. In parallel, through the co-creation programme, IRB, RU and SEMM leveraged their knowledge on innovation management, technology transfer and training methodoldy to jointly develop courses devoted to innovation and entrepreneurship skills. This approach allowed the implementation of a combined offer of uniform and vanguard courses on open Science and entrepreneurship skills for young researchers at four of the participating institutions – IRB, Radboudumc, CPR and SEMM.

Although the implementation of the **Train-the-Trainer programme** has been successful in creating sustainable training courses in open science and research data management among the network institutes, the process showed that open science is a relatively difficult topic to cover in any course. This is because not all information is equally relevant for each researcher at every stage of their career, nor are all researchers equally familiar with some of the more basic concepts. The Train-the-Trainers methodology clearly made apparent the **need for tailoring** the course to each institution in terms of content and format based on the specific audience with local/regional/national open science and data management requirements. For networks looking to implement a similar strategy, the recommendation would be to use the guidance from expert trainers and turn the different topics into modules, allowing local trainers to not just pick-and-choose suitable topics, but also make use of the benefits of online study/preparation as relevant. It is also important for local trainers to stay abreast of latest developments and requirements regarding open science and research data management so as to make relevant modifications to the course content as and when necessary.

The co-creation model was instrumental in designing, developing and implementing training courses with content regarding innovation and entrepreneurship that is highly relevant and applicable for life sciences. These courses have allowed life science PhD Students and young researchers to broaden their minds and acquire unique and indispensable tools for the application of their academic research. As a general recommendation based on the project experiences, co-creation methods for developing custom-made content for training programmes can be highly valuable if complemented with local examples that are relatable to the participants of the courses. Furthermore, the inclusion of networking events by inviting local entrepreneurs and professionals from other innovation-forward environments can be highly useful for the course participants to derive the maximum benefit from the training itinerary.

2.2 Sustainability is key

Apart from the consolidation of the new training courses in open science and entrepreneurship in the partner institutions, the second long-term goal of ENABLECARES was to ensure that these

courses are sustainable beyond the end of the project lifetime. The aspect of sustainability was promoted throughout the project thanks to several aspects of its design and implementation:
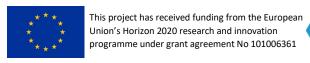
- ENABLECARES has been able to successfully exploit the Train-the-Trainers and co-creation models to generate in-house capacity to deliver content that are always up-to-date and tailor-made to the needs of each research institution. By involving local trainers in every step of the project, ENABLECARES has ensured that the courses themselves and the expertise required to run them successfully, are sustainable.

- Key materials generated throughout the project to support the Train-the-Trainer and co-creation strategies have also been made available through a dedicated online platform. This has ensured continued availability of course content to all the participating institutions.

- In an additional step towards sustainability, a "Train-the-Trainer" guide has been created for both the open science and entrepreneurship courses. These guidelines are expected to come in handy in training new local trainers at the participating institutions in the coming years. The project is also looking forward to using these guides in its exploitation strategy to train local trainers among other institutions that are interested in implementing similar training programmes for their researchers.

- ENABLECARES has also encouraged the participating institutions to secure local external support that will allow in-house trainers to keep abreast of the latest advances in the field, thus guaranteeing not only the sustainability of the courses but also the quality and relevance of their content.

As a result of these concrete steps, both the open science and entrepreneurship course itineraries have been fully integrated into the training programmes that the participating institutes offer to their young researchers. This integration is essential to ensuring that these courses enjoy continued support from the governing structures of the participating institutions – a key consideration for their sustainability.

2.3   Support through guidance

With a view to complementing the training provided on open science and entrepreneurship and addressing the need for adequate career guidance for young researchers, ENABLECARES successfully implemented a two-pronged strategy:

1. **Identification of key complementary skills**: The project examined the catalogue of training courses offered at the four partner institutions andidentified those that complemented the open science and entrepreneurship trainings offered. A training curriculum that will lead young researchers towards the path to become professionals in the increasingly demanded sectors of entrepreneurship and/or data stewardship was thereby promoted throughout the consortia. These skillsets identified may further serve to better define the ESCO profile of these emerging job categories (https://enablecares.eu/career-development/).

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2. **Promoting personalized career guidance:** Throughout the implementation of the project, Enablecares insisted on providing adequate support to the young researchers at the participating institutions through a dedicated and personalized career guidance strategy. This included the introduction of Career Development Plan (CDP) at each institution that serves as a backbone for individualized support provided by career advisors to the young researchers and help them identify those training itineraries that best adapt to their own skills and interests and help them build their individual training curricula. Enablecares has also produced a set of "Best practices" as a guidance for other institutions that are interested in implementing a personalised career guidance for their researchers.

ENABLECARES TAKE-HOME MESSAGES

1. **Transversal skills training is highly essential for researchers** – identify those skills that are essential for equipping researchers with the tools necessary to build a career in academia and beyond.

2. **Consult all stakeholders** – policy makers, prospective employers and the researchers themselves– to identify and corroborate the skillset required for emerging job profiles.

3. **Integrate training itineraries in complementary skills within the graduate program** to foment a comprehensive and sustainable strategy.

4. **Start early** – several skills, including open science and entrepreneurship, are applicable and sometimes even essential for successful completion of a PhD

5. **Provide personalised career guidance** and mental health support to young researchers

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References

1. Communication from the European Commission on "European Skills Agenda for sustainable competitiveness, social fairness and resilience", 2020.

2. Nature PhD Survey 2019: https://media.nature.com/original/magazine-assets/d41586-019-03459-7/d41586-019-03459-7.pdf

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