FORTHEM Alliance Universities' Selected Good Practices in R&I

Towards a European University

María Dolores Pitarch-Garrido
Isabel Mendoza-Poudereux (coord.)

FIT forthem.
Fostering Institutional Transformation of R&I Policies in European Universities

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Funded by the Horizon 2020
Framework Programme of the
European Union

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017248.

Publicacions de la Universitat de València
http://puv.uv.es
publicacions@uv.es

Book coordinators: María D. Pitarch-Garrido & Isabel Mendoza-Poudereux

Design and layout: Letras y Píxeles, SL
Cover image: Jardí Botànic de la Universitat de València, Elisa Caballer.

ISBN paper: 978-84-9133-450-7
D.L.: V-499-2022

ISBN digital open access: 978-84-9133-451-4
DOI: 10.7203/PUV-OA-451-4

LIST OF COLLABORATORS:

Mateusz Antczak (UO), Amaia Crespo (UVEG), Jocelyne Gerard (UB), Melanie Groß (JGU), Henna Gustafsson (JYU), Reija Häkkinen (JYU), Liisa Harjula (JYU), Elina Humala (JYU), Arto Ikonen (JYU), Johanna Kinnunen (JYU), Sari Korkia-aho (JYU), Agnieszka Kuraś (UO), Ligita Liepina (LU), Katarzyna Łuczak (UO), Dominika Malchar-Michalska (UO), Juuso Marttila (JYU), Katarzyna Mazur-Kulesza (UO), Saara Minkkinen (JYU), Halina Palmer-Piestrak (UO), Agata Piasecka (UO), Iwona Pisz (UO), Riikka Reitzer (JYU), Agnese Rusakova (LU), Ángeles Sanchis (UVEG), Esteban Sanchis (UVEG), Barbara Stankiewicz (UO), Nina Straub (JGU), Timo Taskinen (JYU), Encarna Torres (UVEG), Maria Värre (JYU), Mira Väyrynen (JYU), Michał Wanke (UO), Dorota Wierzbicka-Próchniak (UO) , Eloisa Zerilli (UNIPA)

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CHAPTER 1

FORTHEM, FIT FORTHEM - AN INTRODUCTION

Nicole Birkle, Johannes Gutenberg University Mainz, fitFORTHEM@uni-mainz.de
Tanja Herrmann, Johannes Gutenberg University Mainz, FORTHEM@uni-mainz.de
All *FIT FORTHEM* partners who participated in the application process

The FORTHEM Alliance[1]

The FORTHEM Alliance (https://www.FORTHEM-alliance.eu/en/) consists of multidisciplinary public research universities that are situated (all but one) outside capital regions. The Alliance includes universities from all four European geographical areas. It has the Weimar Triangle at its core (Dijon, Mainz, and Opole), represents the Scandinavian and Baltic regions (Jyväskylä and Riga), as well as the Iberian Peninsula (Valencia), and extends to the centre of the Mediterranean basin (Palermo). Recently, two new partners, the Universities of Agder (Norway) and Sibiu (Romania) joined the Alliance to foster the cross-border cooperation throughout Europe and to enrich and expand the activities of the Alliance and bring in new points of view and additional expertise. Now, involving more than one quarter of all EU member states, FORTHEM is both still small enough to enable strongly integrated cooperation and large enough to further develop its strategies for higher education and implementation adapted to the regional demand all over Europe.

FORTHEM comprises neither the largest, nor trans-border, nor the most closely linked universities. All universities are state funded, some are relatively young, while others have a long academic tradition. Thereby, FORTHEM is an Alliance potentially representative of around 90% of European universities and for this reason it is a reproducible model. By representing very diverse educational systems and countries, facing different national challenges, economic and political realities, FORTHEM promotes a closer rapprochement at a time of declining confidence in Europe and in democratic systems. All member universities are firmly rooted in the social and economic tissue of their respective European regions, and act as motors of internationalization and innovation. Some are interlinked by political structures such as town twinnings and regional partnerships. The regional anchoring gives our Alliance the capacity to spread the values of a multicultural Europe within the surrounding areas and to “bring Europe home.”

1 The introductory paragraphs describing FORTHEM and FIT FORTHEM are based on the initial chapter of the FIT FORTHEM project application.

The FORTHEM core fields of activities

Since the first funding period of FORTHEM, the Alliance has been mainly working on developing, adopting and implementing a long-term Transnational Higher Education Strategy. In this pilot phase, FORTHEM is building on three core missions (fig. 1):

Fig. 1: FORTHEM Missions

These Missions are steered by Mission Boards, bringing FORTHEM's strategy to life. A joint Steering Committee ensures the transformation process of the seven founding members towards a joint campus and a true European University. Great efforts are made – especially in times of the pandemic – to put innovative tools and exchange formats for virtual mobility in place, and to guarantee that all university stakeholders, such as students, researchers and administrative staff can participate in, contribute to, and benefit from being an Alliance. FORTHEM is enhancing outreach activities; professional support goes to students performing volunteer work in Alliance countries, whereas a network of schools, companies, and public and third-sector organizations provide internship placements for students. A programme to bring Europe into classrooms by providing in-service training opportunities for schoolteachers is also being implemented.

The FORTHEM Labs

At present seven FORTHEM Labs are establishing new types of multidisciplinary expert networks that will serve as innovative interfaces between education, research and innovation. Labs can be understood as a valuable resource and asset in mobilizing knowledge and experience from Alliance member universities and external stakeholders for shared goals. They are built on shared areas of expertise and complementary strengths of the Alliance member universities and seek best practices and research-based solutions to organization-specific, regional or European challenges. Designed as "Living Labs," they are composed of researchers, students and external stakeholders (associated partners) from different fields. Close collaboration with schools and enterprises ensures knowledge circulation between FORTHEM, society and the economy, and enhances the employability of students. The FORTHEM Labs work on answering questions related to crucial societal issues, with each FORTHEM member university coordinating one Lab.[2]

2 https://www.FORTHEM-alliance.eu/objectives/labs/

After a successful implementation of seven labs so far, with the new partners on board starting in 2022, new labs will be established and new forms of co-operation will be tested. Especially in the field of research, FORTHEM will foster its cooperation building on new action plans, research agendas and models, mainly developed within the accompanying Project FIT FORTHEM - Fostering Institutional Transformation of R&I Policies in European Universities. In the future, Labs will still be the testbeds for new forms of innovative cooperation, but the Alliance will additionally develop new concepts for research co-operations, allow for the active involvement of as many actors as possible, and will reflect the richness of expertise that the Alliance has to offer. These new concepts must go far beyond the thematic concepts of the Labs and will allow for responding even better to current societal challenges. Basic research must and will also take its rightful place in the overall concept

The FIT FORTHEM Project

While the FORTHEM Alliance, which started its work in September 2019, is a fully Erasmus+ funded programme that had been focused on student matters and mobility issues, in April 2020, the European Commission launched a call[3] for the so far existing European Universities to also strengthen their research and innovation dimensions. The alliances were asked to think about valuable transformation processes in the following fields to overcome current shortcomings and barriers for collaboration and to better prepare to fully contribute both to the further development of the European Education Area and the European Research Area. Specifically, the following areas of intervention were proposed:

1. Developing a common research and innovation agenda and action **plan**.
2. Strengthening human capital, enabling balanced brain circulation and gender **balance**.
3. Sharing research infrastructures and other **resources**;
4. Reinforcing cooperation with non-academic actors, especially academia-business **cooperation**.
5. Mainstreaming comprehensive Open Science **practices**.
6. Involving citizens, civil society and public/cities authorities in research and **innovation**.
7. Exploring joint structures across the European Universities on technical activities common to all "European Universities," facilitating collaboration in activities, obstacles, and solutions that could be common to all alliances, as well as clustering activities to share best practices on research and innovation.

Within this call the alliances also were encouraged "to propose their institutional transformation agenda

3 H2020-IBA-SwafS-Support-1-2020

and adapt it to the specific needs of the universities involved; where appropriate, concrete research and innovation actions should be implemented in pilots or study cases." FIT FORTHEM decided not to simply convert each of the above-mentioned indicative modules directly into work packages, but to cluster areas of intervention based on a first state-of-performance analysis at the individual institutions. It seems particularly important to emphasize that one of the major concerns of FIT FORTHEM is to pick up each institution at its current state-of-play. Processes that apply equally to all and aim at complete equalization and mainstreaming are neither to be developed nor implemented. FIT FORTHEM wants to develop a portfolio of measures, tools and action plans from which each FORTHEM partner university can draw equally according to its own needs and requirements.

FIT FORTHEM vision and major objectives

FIT FORTHEM will significantly contribute to making FORTHEM a unique and united entity with a strong higher education strategy (further developed from the Erasmus+ pilot period) and tight links to its socio-economic environment. It will promote the well-functioning FORTHEM living Labs that are excellent in teaching and especially in research and will encourage FORTHEM to turn into a breeding place of a solid innovative and entrepreneurial spirit with its own well-defined Research, Innovation and Transfer Mission in the future. In doing so, the specific characteristics of each institution will be thoroughly considered, and each entity will be supported according to its specific needs. Above all, knowledge and structures will be built up in such a way that they can easily be

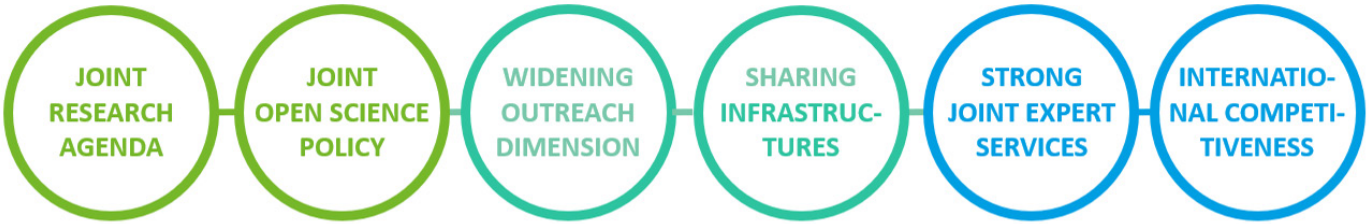

Fig. 2: FIT FORTHEM Objectives

jointly used. Ultimately, this will lead to an efficient pooling of resources – human and technical – rather than a mere accumulation. FORTHEM researchers will benefit from brain and knowledge circulation because of the joint work within the Alliance, and location-related disadvantages will gradually be overcome in the future. FIT FORTHEM will join forces with local and European networks (societal, business related, cultural, political) and especially the current and future alliances to maximize this effect. To achieve this vision, FIT FORTHEM focuses on the following core objectives (fig. 2), which are decisive for our efforts in the various work packages.

1. In line with the FORTHEM Lab and Outreach Missions, modelling a quadruple-helix transformation approach in cooperation between academia, industry, governance and citizens to set the future research agenda of our universities in the framework of each institution's local context. We will also bear in mind the Global Challenges and Missions identified by the future European Framework Programme for Research and Innovation Horizon Europe, and the Sustainable Development Goals defined by the United Nations (from local to global).
2. Based on the FORTHEM Lab Mission and future research activities of the Labs, developing joint Open Science Policies, to be discussed and shared with the other European Universities Networks. We will consider new concepts of a more crosslinked and digitized science, new forms of cooperation and communication, and we will try to overcome current weaknesses in the acceptance of Open Science requirements, the lack of incentives to participate and the development of stand-alone solutions that often hamper rather than promote cooperation.
3. Widening and sharing the FORTHEM networks and their outreach dimension by joining forces with other alliances, stakeholders, stakeholder networks, and policy makers, and thus being an important consultant for the European Commission for the further development of the European University Networks.
4. Eliminating site-specific disadvantages both of institutions and for researchers and students by sharing infrastructures, technologies, knowledge, and services.
5. Developing new models, processes and support structures to strengthen cross-institutional and alliance-wide cooperation on all key issues, building on regional clusters, integrating national initiatives and keeping an overall European perspective, not only in the field of education, but also and mainly in research and innovation activities. Thus, we will significantly contribute to the international competitiveness of FORTHEM in the European Research Area and contribute to the future European research agenda.

6. Despite competing in some European funding programmes, such as the ERC, developing strong joint expert services open to all researchers of the Alliance to boost transnational cooperation and professionalization in research management at all partner institutions, to open new career perspectives for researchers and managers, and to underpin and facilitate excellent research with excellent support services.

To maximize the benefits for each beneficiary and the Alliance as a whole, and to properly address the overarching objectives, FIT FORTHEM is conceptually divided into seven work packages (WP). All WPs are closely interlinked, and all beneficiaries contribute equally to the project.

- WP 1: Project management, LEAD: JGU.
- WP 2: Intercultural sensitization and professionalization in research and innovation management, LEAD: JGU.
- WP 3: Co-creation of common long-term R&I agendas for FORTHEM, LEAD: UVEG.
- WP 4: Connect, access, and share R&I resources, LEAD: UNIPA.
- WP 5: Living Labs for societally embedded co-creation of knowledge, LEAD: JYU.
- WP 6: Establishing a joint virtual research policy and services office, LEAD: UB.
- WP 7: Dissemination and communication, LEAD: UO.

Activities in WP3 are fundamental for this publication. In this work package five topics from the very beginning emerged (fig. 3), which required a fundamental examination, as this would be the basis for all further work steps.

Fig. 3: Core topics examined in WP 3 in FIT FORTHEM

To identify the current state-of-the-art at the different FORTHEM partner universities in the respective fields, a comprehensive analysis of strengths, weaknesses, opportunities, and threats (SWOT) was carried out, as well as focus groups meetings and interviews. The overall methodology is described more in detail in the next chapter. As expected, it became perfectly clear that the partners do not work under the same preconditions, do not follow the same strategies, and therefore start from completely different starting points.

Working on transformation models and/or building on existing best practices

Under these conditions described above, it seemed hardly possible to easily identify best practices in dealing with these issues at each individual site, in order to transfer them directly to other partners; but this was one of the fundamental ideas of the European Commission when launching the call that FIT FORTHEM replied to. Many different national legal, institutional, or simply practical requirements often play a limiting role in transferability. In addition, it turned out to be difficult to identify what exactly was a best practice, how much we know about those best practices and how they could be transferred and developed under different preconditions. Secondly, we needed to identify what the European Commission exactly meant when asking the Alliances to launch the transformation processes, and what exactly is needed in transforming from a single institution approach to an Alliance approach? First of all, an in-depth discussion on relevant topics is needed in order to learn from each other and identify common interests and common future agendas and activities. But does that mean that solutions and approaches developed for supposedly well-performing institutions in a respective field can be easily transferred to others, so that in the end all the partners are on the same level in each field? Most probably that will never be the case. Rather, what FIT FORTHEM wants to do is reduce site specific disadvantages by sharing and by offering a variety of solutions and ideas that can be adapted to the specific needs of each partner. And before launching any kind of transformation processes, as said before, it seemed quite essential to the FIT FORTHEM working team, to identify what exactly is done in the respective fields of everyday practice at the FORTHEM partner universities. The examples compiled and described as good practices are not necessarily based on institutional guidelines or even on strategies, and it is not uncommon for groups or individual players to have developed these out of their work routine.

The collection of good practices

In this book we want to showcase several identified good practices for each of the FORTHEM partner universities. These are examples identified so far, to which a variety of others could be added. They are spotlights on very broad areas that have not yet been explored in their full breadth. Are incidental achievements eligible to be part of the sample? Must a good practice included in the book be reproducible for the partners? These are only few of the questions we often could not answer with full satisfaction. So, we want to showcase what exists at the FORTHEM partner universities, without a claim to completeness. For reasons of time and resources, the new FORTHEM partners, the University of Agder and Lucian Blaga University of Sibiu could not yet be included in this compilation. In the

future, however, they will increasingly participate in the activities of FIT FORTHEM to support and enable the joint steps in the further development of our R&I dimension.

Take-home messages

- ✓ Transformation can't be launched from scratch.
- ✓ What's a good practice for one partner might not be a good practice for other partners, as not fitting to their overall preconditions and institutional settings.
- ✓ Working at all the modules proposed by the European Commission must mean picking up all the partners where they are now.
- ✓ New concepts that are imposed and apply equally to all will sometimes hinder rather than promote the development of individual facilities.
- ✓ Europe must continue to accept and promote diverse concepts and approaches, even within an alliance, otherwise alliances with a very broad geographic scope and very different economic, legislative and cultural prerequisites are more likely to struggle with internal barriers for cooperation in the long run.

Based on concepts of respectful cooperation and coexistence, and aiming at the broadest impact and the maximum European added value, FORTHEM strives to be one of the pioneers in developing future concepts for the European Higher Education and the New European Research Area.

CHAPTER 2

METHODOLOGICAL APPROACH TO THE KNOWLEDGE OF BEST PRACTICES IN THE FORTHEM ALLIANCE

María D. Pitarch-Garrido, University of Valencia
Paz Ruiz, University of Valencia

Scientific policy normally aims at achieving excellence, but often what is needed is not only excellent science but the generation of scientific knowledge that responds to social demands and, above all, that can be understood, used and assumed by society. One fundamental element in the research and innovation processes developed by universities is the dissemination of research results. Universities can be major producers of knowledge and cutting-edge research, but this may not always respond to social demands and, if it does, it may sometimes not reach the right social agents who can convert the research results into applications that improve the quality of the life of citizens. As a matter of fact, universities are the entities where best practice dissemination initiatives have been taking place in the framework of processes for the transfer of scientific results, but this occurs mainly in the field of teaching and the development of didactic models for higher education. However, in addition to financially supporting the creation of new scientific knowledge, universities should also be concerned with improving innovation paths through the transfer of knowledge among other organizations. Certainly, direct cooperation between universities and external stakeholders leads to an increase in innovation, both in terms of products and processes, and this innovation translates into social innovation when universities collaborate closely with their environment.[4,5]

As was mentioned in the Introduction of this book, the Work Package 3 (WP3) of the FIT FORTHEM project is dedicated to creating a joint methodology to develop common protocols towards strategic research and innovation agendas and their corresponding action plans adapted to a variety of geographic and multilevel scales. The protocols towards a common strategic agenda will be co-created all along the project among the FORTHEM Alliance members and within their social and institutional ecosystems through a

4 Smith, H. L. (2007). Universities, innovation, and territorial development: a review of the evidence. *Environment and Planning C: Government and Policy*, 25(1), 98-114.

5 García-Peñalvo, F. J. (2015). Mapa de tendencias en Innovación Educativa. *Education in the knowledge society*, 16(4), 6-23.

participatory methodology, bearing in mind societal responsiveness, sustainability and ethical acceptability.

According to this methodology and to the identified common needs of the Alliance members, five overarching themes for research have been selected: a) internationalization of research; b) open science; c) co-creation of knowledge with local stakeholders; e) human resources in the university; f) science communication. These five key themes set in the framework of the future strategic R&I agenda of FIT FORTHEM universities are considered fundamental to consolidate the transformation processes to achieve greater applicability of science, both basic and applied, both STEM (Science, Technology, Engineering, Mathematics) and Social Sciences and Humanities. These key areas have the ultimate goal of supporting the development of shared R&I activities, both among the universities in the FORTHEM alliance, and also with other universities and with society, companies and administration at all levels.

The universities are key actors in the regional, national and European innovation ecosystems contributing to the generation of useful knowledge. It has been shown that the willingness of universities to collaborate with others determines the degree of linkage with their socio-economic environment and, therefore, also with the capacity to consolidate regional innovation models.[6] Furthermore, the internationalization of universities has a very positive impact on improving the competitiveness of their regions. In this sense, the FORTHEM European Alliance is considered a strategic partnership for the development of its geographical environment, which is based on the exchange of experiences and know-how among the existing universities, as well as the interaction with their closest environments.

Nevertheless, it must be taken into account that not all universities are the same, nor do they have the same capacity to have an impact on their environment. There may be some common aspects shared by the research strategies of universities, but this will vary considerably among different types of universities, and will depend on factors such as which missions they prioritise, their disciplinary focus, etc.[7] However, in the context of this project, the fact that each university has its own idiosyncrasies, far from being a problem, is a good opportunity to learn and consolidate their commitment to innovation and the transfer of scientific knowledge. Working together is an

6 Atta-Owusu, K., Fitjar, R. D. & Rodríguez-Pose, A. (2021). What drives university-industry collaboration? Research excellence or firm collaboration strategy? *Technological Forecasting and Social Change*, 173, 121084.

7 European Commission Policy Report (2020). *Towards a 2030 Vision on the Future of Universities in Europe.*

excellent opportunity for mutual learning by sharing the good practices already implemented and tested in each of the Alliance universities within the five mentioned areas. The good practices that are already being developed in each university and that incorporate one or more of the above-mentioned key themes can show new ways of doing things, new protocols, which could be replicated with the certainty that they will work well, as they have already been tested in other universities; the rest can learn from their experience.[8]

Likewise, the use of examples of good practices as an instrument for innovation in public management[9,10] and as a strategy for transferring public policies has been widely developed in the scientific literature and in the reports of organizations such as the European Union, the World Bank and UNESCO, among others.[11,12]

However, it must be considered that forms of interaction such as collaborative research and other forms of **tacit knowledge** exchange, which arise from day-to-day informal interactions, often remain hidden in the background but can be a vital source of knowledge exchange.[13] Within an organization, tacit knowledge encompasses the habits, ways of doing and behaviours gained by time and experience, which are normally difficult to explain and challenging to document. It can be defined as skills, ideas and experiences that people have but are not written down and may not be captured and shared easily. Individuals as well as organizations are often unaware of this kind of knowledge and how it can be valuable to others, which leads to the fact that, at times, it is simply not shared.

In the case of universities, it appears that they have gone in a much-mechanised direction in recent times with little emphasis on rooting out tacit knowledge. However, successful knowledge transfer comes from the transfer of tacit knowledge,[14] which generally requires regular interaction, and trust and can only be revealed through practice in a particular context.

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8 Corti, L., Van den Eynden, V., Bishop, L. & Woollard, M. (2019). *Managing and sharing research data: a guide to good practice*. Sage.

9 Brannan, T., Durose, C., John, P. & Wolman, H. (2008). Assessing Best Practice as a Means of Innovation, *Local Government Studies*, 34(1), 23-38.

10 Gmelch, W. H. & Buller, J. L. (2015). *Building academic leadership capacity: A guide to best practices*. John Wiley & Sons.

11 Wolman, H. & Page, E. C. (2002). Policy Diffusion among Local Governments: an Information Theory Approach. *Governance*, 15(4), 477-501.

12 UNESCO (2000). *MOST Clearing House Best Practices Databank*. UNESCO.

13 Perkmann, M., Tartari, V., McKelvey, M., Autio, E., Broström, A., D'Este, P., Fini, R., Geuna, A., Grimaldi, R., Hughes, A., Krabel, S. Kitson, M., Llerena, P., Lissoni, F., Salter, A. & Sobrero, M. (2013). Academic engagement and commercialisation: A review of the literature on university–industry relations. *Research Policy*, 42(2), 423-442.

14 Chugh, R. (2015). Do Australian Universities Encourage Tacit Knowledge Transfer? *Proceedings of the 7th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management* (pp. 128-135). DOI: 10.5220/0005585901280135.

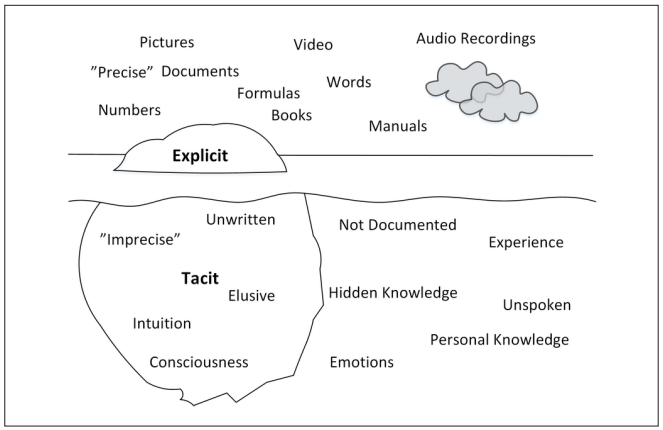


Fig. 4: Explicit vs. Tacit Knowledge[15]

In this regard, this kind of knowledge can be more easily transmitted through the FIT FORTHEM context. In fact, one of the objectives of this project is to share knowledge and learn from others' experiences, so this is why it is important to know about these experiences and to disseminate them effectively. It is important to share ways of doing, experiences and practices that are already successful and innovative, in order to adopt them in other places, always provided that they can be easily adapted to the diverse realities of each university. In this sense, it is relevant to access the tacit knowledge of FORTHEM universities and provide the best tools for disseminating their know-how. In order to fulfil this objective, this book compiled some of the good practices of the FIT FORTHEM partners to serve as examples and inspiration for improving their R&I performance.

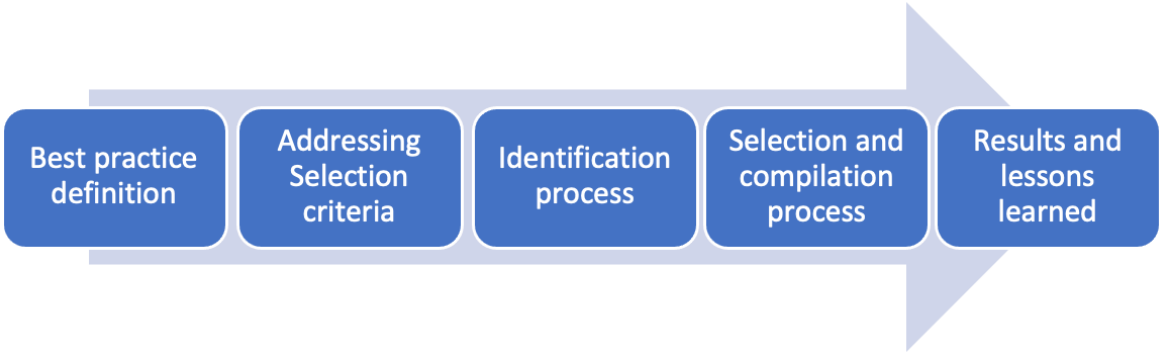
The overarching purpose of the book was initially explorative, first guided by the broad objective of identifying good practices both within universities and those aimed at society (sometimes involving different social agents), showing positive results which are potentially transferable. Subsequently, the purpose was refined as the main themes and issues emerged from the analysis, ending with a classified compilation according to the five overarching themes selected for the future strategic R&I agenda of FIT FORTHEM universities.

The methodological process for the identification and compilation of the best practices included in the book is outlined briefly as follows:

1. What has been considered a best practice for the purpose of the project?

The definition of "good practice" used in this book is based on that proposed by the UN Best Practices and Local Leadership Programme, which defines best practices as "outstanding contributions or success-

15 Wikström, R. (2014). Fuzzy Ontology for Knowledge Mobilisation and Decision Support. (Unpublished Doctoral Thesis). Institute for Advanced Management Systems Research (IAMSR), Born.



ful initiatives that help improve the quality of life of communities and generate sustainable conditions in cities and regions".[16] The adoption of this definition has been deliberately broad to include examples with different objectives and methodologies. However, starting from this first definition, the emphasis has been placed on making the tacit knowledge of FIT FORTHEM universities visible and accessible.

2. What were the criteria followed for the selection of the best practices?

The following four aspects have been determined the best practices search in each university:

1. The need to relate to one of the 5 key overarching themes: internationalization of research, open science, co-creation of knowledge with the social agents of the territory, human resources and science communication.
2. The demonstration of a significant impact in relation to their own objectives, i.e. they have a high degree of transferability.
3. The replicability (real or potential) of these practices, with more or fewer modifications, in other universities.
4. The inclusion of proposals that are innovative (and sometimes disruptive), considered as such by the qualified informants who, in each university, have suggested their inclusion in this study.

16 UN (2014). *Guía de transferencia de prácticas, procesos y/o metodologías*. Programa de las Naciones Unidas para los Asentamientos Humanos. Foro Iberoamericano y del Caribe sobre Mejores Prácticas.

3. How were the best practices identified?

The best practice identification process was designed to be participatory and encourage consortium members to take an active part in the screening process.
During 2021, for the purpose of developing a diagnosis of the R&I situation in the seven FORTHEM universities as the basis to further develop joint R&I strategies, managerial and qualified personnel on the five overarching themes in each university were interviewed. In this sense, interviews were deemed to be important as they would provide an in-depth opportunity to ask a series of open-ended questions, which would reveal the current state of the fields analysed in an unconstrained environment supplying the opportunity to clarify and explain the information provided.

During these interviews, apart from other issues, they were asked to point out the best examples or practices developed in their university under the corresponding theme that, in their opinion, best met the above-mentioned criteria. The idea was to access the tacit knowledge gained through their personal and professional experience learned in their current role. Managers and experts interviewed play an important role in facilitating the transfer of tacit knowledge since, apart from being facilitators, they are themselves in an important position of transferring tacit knowledge. The practices they explained stand out for different aspects and their assessment was left to the experts interviewed. In this sense, the search for best practices was initially framed openly to collect a wide set of initiatives and experiences of possible relevance for the project purposes. The views provided by the respondents paint a picture of the reality "from the ground."

In this process, various questions were asked as part of the interview but, for the purposes of this book, they were also asked for a brief summary of good practices developed under their supervision or the ones they contributed to. Additionally, other issues requested were the details of the contact person in charge of the activities mentioned (in case it was not the respondent), as well as an internet link, if available, to check and revise further information on the activities considered as good practices. To this end, a common factsheet was designed and filled in by the interviewer to standardize the information to be gathered in all the universities, which included the following aspects:

- Name.
- Summary.
- Area of action (or key issue).
- Objectives and their description in more detail than in the abstract.
- Results, both qualitative and quantitative (people reached).
- Possibilities of reproducibility.
- Contact details (person in charge, website...).

4. What was the selection and compilation process?

All the best practices suggested by the experts in the seven universities were very diverse in nature, reflecting the broadly formulated search criteria. A refinement task was subsequently made by the FIT FORTHEM team at each university to select the most relevant practice in the light of the project objectives and the criteria set. When necessary, they also contacted the person responsible already indicated in each best practice, to obtain more detailed information and clarify what was needed to better understand the best practice commented on during the interview. Additionally, a number of dimensions regarding the best practices were examined when reviewing them, including the type of information provided, the prioritization approach, and whether replicability in other different entities could be possible. Accordingly, each university was in charge of reviewing and finally indicating those experiences or best practices that in the five fields were considered most relevant as a possible example to highlight and also to be scaled-up or transferred.

Once all the good practices were selected and compiled, the University of Valencia, as the WP3 leader, classified and reviewed them again to agree on the final selection of those most relevant and appropriate for the purpose of the project.

5. What were the results?

This book is meant to be the channel for communicating the FORTHEM universities' best practices as part of their transfer of tacit knowledge. It features a total number of 86 Good Practices from across the seven universities of the FIT FORTHEM Alliance, developed under WP3, led by the University of Valencia.

These best practices compiled are classified according to the above-mentioned five overarching themes and are included along the five chapters in this book.

The number of good practices included per theme are briefly explained in the following chapters:

- Chapter 3: Best Practices of innovative management of internationalization.
- Chapter 4: Best Practices in Open Science.
- Chapter 5: Best Practices of co-creation of scientific knowledge with social agents.
- Chapter 6: Best Practices in communication of science
- Chapter 7: Best Practices in human capital.

Finally, it should be noted that all the good practices included in this book demonstrate a high innovative component, are representative of each of the key themes analysed and, in most cases, have an active relationship with their university and social environment. Furthermore, all of them are well communicated, mostly through the web or social networks, which is essential to promote their dissemination and possible replicability.

CHAPTER 3

GOOD PRACTICES OF INNOVATIVE MANAGEMENT OF INTERNATIONALIZATION

Justine Biettron, FIT FORTHEM Project Manager, Université Bourgogne Franche-Comté
Frédéric Debeaufort, Professor in Food and Packaging Sciences & Engineering, Université Bourgogne Franche-Comté
Fabrizio D'Avenia, Associate Professor of History of Christianity and Churches, FIT FORTHEM Project Manager, Università degli Studi di Palermo
Silvana Di Bono, EU Project Advisor, Servizio Speciale Ricerca di Ateneo, Università degli Studi di Palermo

Internationalization of research is a reality for many European institutions, as it is necessary for strengthening higher education today. As a matter of fact, over the past few decades, international research collaboration has played a major role in European countries, with an increase in international co-authorships, which has been correlated with an increase in higher quality research production and higher publication rates for European researchers taking part in these international collaborations.

Encouraged by the internationalization of their research, the competition has become permanent for researchers, who can no longer entirely rely on local publications in order to be academically and financially recognized. The relationships between international cooperation and research productivity have been widely discussed in research literature,[17] with a general assumption that collaborative activities in research, including international ones, tend to increase research productivity.

Cross-disciplinary and cross-national differences have been a challenge in the internationalization of research in the past decades, but various studies have shown that internationalization of research plays a powerful role for both individual research productivity as well as for the competitiveness of national research outputs.[18]

If the nature of scientific research has always more or less implied an international approach, various factors have changed in the few past years. Indeed, the intensity and scope of internationalization has increased. This is evidenced by the rise in international collaboration on research collaborative projects (e.g., H2020, Green-Deal, Horizon Europe…) and thus research publications, as well as the attitude of university governance in most countries, by pursuing internationalization strategies to stimulate the mobility and vision of its scientific community. This institutional change in European universities, supported

17 Kwiek, M. (2017). Europe: "Internationalists" and "Locals" in Research: Similar Productivity Patterns Across Europe. In G. Mihut, P. G. Altbach (Ed), *Understanding Higher Education Internationalization - Insights from key Global Publications* (pp. 329-331). Springer. DOI: 10.1007/978-94-6351-161-2_71

18 Kwiek, M. (2020). Internationalists and locals: international research collaboration in a resource-poor system. *Scientometrics*, 124, 57–105, DOI: 10.1007/s11192-020-03460-2

by the different governments, has been progressively influenced by European Union strategies in terms of research, innovation and economic growth. Indeed, the Regional Strategy for Research and Innovation for Smart Specialization also encouraged higher education and research institutions, as well as industries, to go further in their internationalization recognition, promoting and co-funding European research projects and communication tools.[19,20]

The economic and institutional influence of globalization has played a major role in the internationalization of research becoming a key factor in the European higher education system. The internationalization of research has also been influenced by the increase in student exchanges and more generally in the circulation of scientists within Europe. Thus, it is clear that the internationalization of research has been driven by both academic as well as economic factors.

European universities have had to cope with several factors while adjusting to this new reality. It quickly became crucial to develop and strengthen links between different research teams, leading to their mobility and to an increase in co-authorship.[21] Alongside this research mobility, European universities identified an opportunity to expand their funding. As a matter of fact, by increasing the mobility and the internationalization of their research, universities have generated a set of opportunities, benefitting from their regional, national and international funding, mainly at the European and international levels.

Another important issue of the internationalization of research comes from a "knowledge" approach. By enlarging their research environments, European universities are also attempting to make breakthroughs in the different scientific challenges; it has been proven that smaller research countries benefit significantly from internationalization, as they have been able to develop their own capacity while expanding their networks.[22]

From a researcher's point of view, it has been subsequently important to become globally involved in order to obtain the acknowledgement of the scientific community. International publications between re-

19 European Commission (2014). *Regional Strategy for Research and Innovation for Smart Specialisation (RIS3)*. https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/policy-document/regional-strategy-research-and-innovation-smart-specialisation-ris3-0

20 Bourgogne Franche-Comté Région (2020). *Augmenter le nombre de projets collaboratifs dans le cadre de la RIS3*. https://www.europe-bfc.eu/dispositif/augmenter-le-nombre-de-projets-collaboratifs-dans-le-cadre-de-la-ris3/

21 SciencePo (29th June, 2020). *Mobility as a catalyst for resilience and renewal.* https://www.sciencespo.fr/en/news/news/mobility-as-a-catalyst-for-resilience-and-renewal/4995

22 OECD (2016). *Innovating Education and Educating for Innovation: The Power of Digital Technologies and Skills*. OECD Publishing. http://dx.doi.org/10.1787/9789264265097-en

searchers from different countries will bring more attention, and will be cited more, than national publications. Indeed, a researcher who co-authors an international publication will have more chances to access networks, funding and possibilities for future work.[23]

Overall, the internationalization of research has been identified with and connected to positive outcomes for both individual researchers and their universities, as it has been proven that it increases the productivity of research, the amount of funding available, the quality of publications and attractivity for the European research environment.[24]

By creating the FORTHEM Alliance in 2019, the Johannes Gutenberg University, the University of Burgundy, the University of Valencia, the University of Palermo, the University of Latvia, the University of Opole and the University of Jyväskylä have all added the internationalization of research to the heart of their institutional approach, establishing a joint vision for competitive and successful European universities on the global scene.

The chapter that follows highlights some of the FORTHEM Alliance's best practices when it comes to the internationalization of research.

FIT FORTHEM partners, based on the work done in the first year of the project, have identified about 17 good practice cases of internationalization of research to start with.

They provide a comprehensive overview of the efforts of the seven universities to pave the way for a transformation of their structures and their strategies towards an increased internationalization of research and education processes.

This trend is achieved through a twofold perspective:

- Good practice of academic projects (University of Palermo, University of Opole, University of Burgundy).
- Good practice of academic services (University of Jyväskylä, University of Valencia, Johannes-Gutenberg University Mainz).

The first group includes outstanding project initiatives, most of them interdisciplinary and characterized by the involvement of non-academic actors, showing the benefits of internationally upscaling some research lines that traditionally operate at local or regional levels.

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23 Fleming, N. (2021). How to tackle authorship disputes: Team science suffers when junior researchers see their career-defining contributions to a paper downplayed. *Nature*, 594, 459-462. https://media.nature.com/original/magazine-assets/d41586-021-01574-y/d41586-021-01574-y.pdf

24 Smith, A. & Reid, G. (2019). *Changes and choices advice on future frameworks for international collaboration on research and innovation. Ministry of State for Universities, Science, Research and Innovation*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/844488/Changes_and_Choices.pdf

The second group collects the services in force at the partner universities to support students, researchers, and professors in accessing EU funding for their research and innovation projects.

Starting from **the first group**, the good practice cases mapped share some highlights, notably:

- To convey academic know-how *from fundamental research to industrial applications*, in tandem with companies that are started up from research results enhancement or play an active part in a technology transfer process to commercialize a technology.
- To entangle the *co-creation of knowledge* between university and society into a project framework.
- To transfer the outcome *from a project into a process flow*, thus generating a positive impact on the academic structure rather than on single research teams.
- To promote the shift *from knowledge transfer* as a one-way system to knowledge exchange between research providers and end users as an interactive process with a win-win effect (companies and societal actors provide input on actual challenges to the scientific community and co-design innovative solutions; academic people help companies to develop and internationalize their innovations).
- To *increase networking* to make national research relevant internationally and develop an open mindset of university researchers to capitalize the contacts established within a specific framework (i.e., a mobility programme, an interuniversity bilateral or multilateral cooperation), enlarging the cooperation to other fields such as research, innovation, and development.

The development of connections on an ongoing basis among the different actors involved in the implementation of an international project is acknowledged as a core success factor for the FIT FORTHEM universities. An increasing effort has been registered in this direction, which shows its effects horizontally (university-industry cooperation, science with and for society, citizens' engagement, multi-actor partnerships) and vertically (qualified relationships with public agencies, improved collaboration between the university headquarters and the decentralized structures). Internationalization of R&I through the projects makes use of different tools such as: research fieldwork, cross-cultural data exchange, scientific outputs, sharing of expertise between industry and universities, technology transfer actions, internships, students' programmes, joint research results, communication events, co-authored publications. The results measured in terms of increased visibility of the university, attraction of talent, higher scientific reputation as well as fund raising and sowing the seeds for further R&I suggest replicating these project initiatives and multiplying their effects, extending the approach to other groups in the academic community.

This might require researchers' willingness to be more ambitious and bolder in their research and to think out of the box, concerning disciplinary boundaries among different domains and with regard to cultural gaps and mutual understanding among different countries.

The **second group** of good practice examples concerns the offices which, within FIT FORTHEM partner universities, support the researchers in catching funding opportunities and growing up internationally by empowering them to be qualified project coordinators or partners at the EU level.

In this group, the common features which have been identified are the following:

- *Supporting early-stage researchers* in getting on board with EU projects (such as MSCA, ERC) is considered crucial to international development, on the one hand because it facilitates a qualitative leap of their careers, on the other hand because they can act as driving forces for the whole academic community.
- *Supporting less experienced research groups in EU project design* (especially in the SSH and arts domains), encouraging contaminations with other teams from different scientific fields.
- *Reducing the barriers* which prevent many researchers from being committed to proposal writing or project coordination, helping them with the administrative burden that it generates.
- *Covering the whole project life cycle*: all the offices concerned offer their expertise to assist professors and researchers from the scouting phase (targeted dissemination, finding opportunities, partner search) to the pre-award (guidelines on proposal writing and submission, proof reading, budgeting) and finally the post-award phase (negotiation and contracting, financial and administrative management, reporting, internal monitoring, and auditing).
- *Offering personalized assistance*, being aware that different proposal/project management steps require distinctive professional skills from the support staff and that not all proposals/projects are developed in the same way, nor do all research teams fit the same approach to accompany them.
- *Offering premium or additional* services as compared to other academic structures or countries, ranging from an advanced grant writing package (either from staff units or, less frequently, from external consultants recruited), to call filtering tools, mentoring, feasibility checks, organization of restricted training events or networking opportunities, customising the most appropriate service from a list according to needs, resources, and time.
- *Providing incentives to researchers* who devote time to the preparation (and follow-up activities) of a funding proposal at the European or international level, in terms of awards and temporary leave from teaching duties.

- *Providing highly specialised support in managing cross-cutting issues* common to all proposals/projects (ethics and research integrity, dissemination and communication of research, exploitation of results and IPR, gender equality, open access, impact assessment etc…).

These good practice cases have produced tangible results, such as an increased success rate of project proposals submitted as well as a higher number of researchers participating in EU/international calls, better internal organization of the teams preparing the proposals, widespread knowledge of how academic administrative offices are structured and the offer of services to the research staff within the community. A significant result that has been achieved, as well, is more effective cooperation among research and administrative staff units, becoming more respectful of their roles and ready to collaborate toward the common goal of the success of the research. Moreover, the feedback given from the researchers as to the quality, appropriateness and effectiveness of the support received from the administrative offices helps to enhance ongoing improvement.

Finally, the combination of excellent individual research initiatives and strategic long-term priorities fosters the capacity to convey the outcome of single projects to the academic system as a whole, with a cascade effect on other components of the system as well. Indeed, it makes the university more attractive to talented researchers from the outside who feel that they may find the support needed to integrate and grow up together with their host teams in this international scientific exchange.

This chapter emphasizes how European universities have generated a set of opportunities by increasing the mobility and the internationalization of their research. This globalization of research within the FORTHEM Alliance has been highlighted through various good practices that have contributed to the competitiveness and success of these European higher institutions on the European and global scenes. These identified good practices only represent a small insight into the entirety of what has been implemented in the partner universities of the FORTHEM Alliance. Indeed, it is important to keep in mind that the good practices highlighted in this "book of good practices" are based on the interviewee's views on the topic, within the different partner universities, but do not represent the full extent of what has been done in this area by each institution. The seven universities of the FORTHEM Alliance have all, in their own way, pursued and embraced the institutional strategies of internationalization of their research and put this idea into action in 2019 by becoming part of the FORTHEM Alliance, one of the first 17 European University alliances.

Through FORTHEM's latest project, FIT FORTHEM, standing for Fostering Institutional Transformation

of R&I Policies in European Universities, launched in 2021, the Alliance has made clear its willingness to put an even greater emphasis on the internationalization of the research of its members. In FIT FORTHEM, the seven partner organizations aim at making the FORTHEM Alliance a unique and united entity, a European University, not only with a strong higher education strategy, as developed within the Erasmus+ project, but also with a comprehensive research and innovation strategy and tight links to the socio-economic environment, with a view toward increasing competitiveness and the success rate of the Alliance and its partner universities, on the European and global scenes. Consequently, the real and very ambitious challenge is to make sure that all researchers within the FORTHEM alliance develop the awareness of being full members of a European university, at least as much as they feel part of their home university. Almost ten centuries ago the University was founded based on a sacred covenant between students and professors, which was sanctioned by political and religious authorities. It was a covenant for knowledge and research, devoid of borders. The Alliance does not have these borders either.

CHAPTER 4

GOOD PRACTICES IN OPEN SCIENCE

José Manuel Barrueco, University of Valencia

Richard Stallman founded the Free Software Foundation in 1985 to foster a movement intended to distribute software in a manner such that the users received the freedom to use, study, distribute and modify that software. In opposition to commercial software, where access to the code is restricted to the company developers, in the open-source world, any individual, whether an expert or not, is able to access, modify and distribute the code. This allows the whole community to develop projects faster, to quickly identify and fix software bugs, to learn from what talented programmers have done and to share the knowledge in such a way that anyone can build upon it.

The open software philosophy was the ground on which other "open" movements grew up. Such initiatives intended to export the free software model in the way in which the whole scholarly system operates. The circumstances in the scientific and technical areas are similar to those described in the computer industry: the producer goods (i.e., scientific information) are tool gated under subscription-based services that constrain access to those who have the resources to pay for them. This reduces the capacity of society to respond to new challenges, diminishes the rapid validation of findings and increases the duplication of research efforts.

Robert K. Merton already described the notion of common ownership of scientific discoveries by 1942. Since then, many authors have considered that scientific knowledge should be understood as a public good. Everyone could make use of that knowledge at no additional cost once it is made public, in order to generate higher social returns.

Paul David, the author who first introduced the term "open science" in 2003, describes the progress of scientific and technological knowledge as a cumulative process, one that depends in the long run on the rapid and widespread disclosure of new findings, so that they may be rapidly discarded if unreliable, or confirmed and brought into fruitful conjunction with other bodies of reliable knowledge.[25]

25 David, P. (2003). The Economic Logic of "Open Science" and the Balance between Private Property Rights and the Public Domain in Scientific Data and Information: A Primer. In *Proceedings of a Symposium on The Role of Scientific and Technical Data and Information in the Public Domain*. Washington, DC: National Academies Press. https://pubmed.ncbi.nlm.nih.gov/25057675/

It seems clear that, to maximize the dissemination of new findings, research results should be freely available to anyone. Any member of the community should have the right to access the information, check the validity of the results, add new contributions and share the data to be reused for anyone.

Based on these philosophical assumptions was the rise, at the start of the new century, of open access to the research literature movement. It was the first of several movements trying to transform the current scholarly communication system: open research data, open peer review, open education…. The sum of all of them constitutes a new way of conducting science in the 21st century: it is the so-called Open Science.

UNESCO[26] defines Open Science as an inclusive construct that combines various movements and practices aiming to make multilingual scientific knowledge openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community.

In that sense, open science is a new way to carry out the scientific and technological activities following principles like quality and integrity, collective benefits, equity and fairness. Furthermore, it constitutes a new paradigm that tries to improve traditional practices in terms of reproducibility, transparency and collaboration.

The current COVID-19 health crisis has clearly highlighted both the benefits of public sharing of scientific information and research data and the great power of international collaboration in responding to a global emergency for the benefit of society.

The OECD[27] in its report "Making Open Science a Reality" enumerates the following benefits of Open Science: improve efficiency in science, increase transparency and quality, speed the transfer of knowledge, increase knowledge spillovers to the economy, address global challenges more effectively and promote citizens' engagement in science and research.

Open Science is a means and not an end. Open science strategies and policies are a means to support better quality science, increased collaboration and engagement between research and society that can lead to higher social and economic impacts of public research.

Open Science is made up of several components, each one with its own characteristics and different levels of maturation and implementation. What follows

26 UNESCO (2021). *Draft Text of the UNESCO Recommendation on Open Science*. UNESCO. https://en.unesco.org/science-sustainable-future/open-science/recommendation

27 OECD (2015). *Making Open Science a Reality*. OECD Science, Technology and Industry Policy Papers (No. 25). OECD Publishing. http://dx.doi.org/10.1787/5jrs2f963zs1-en

is a list of the elements that are usually included under the umbrella of the Open Science definition:

- *Open access to research literature*, as defined by the BOAI initiative,[28] is free availability on the public internet, allowing any users to read, download, copy, distribute, print, search, or link to the full texts of the articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal or technical barriers other than those inseparable from gaining access to the internet itself. The same BOAI declaration defined two ways to achieve the open access objective: the development of institutional repositories or green road and the publication in open access journals or gold road to open access. In the twenty years since the declaration, both infrastructures have become fundamental elements of the open science ecosystem.
- *Open research data*. This movement goes a step further by promoting the open access not just to publications where the latest research results have been announced, but also to the source data used to reach those conclusions. Free access to such datasets is essential in order to guarantee the reproducibility of the research, and, furthermore, to contribute to improving the transparency of the scientific activities. Secondly, open data enables interoperability because different researchers from different organizations can share and work together on the same datasets. Sharing data increases communication among organizations, while increasing possibilities for further research. The FAIR principles define the requirements any data set should meet in order to be truly open. It must be Findable, Accessible, Interoperable and Reusable. Open Research Data repositories and the widespread usage of data management plans in research projects are also key elements of the open science.
- *Open licenses*. Being able to freely access, at no cost, research results or source research data is not enough to comply with the definition of "openness." Any individual should be able to reuse, share or distribute scientific output. This confronts intellectual property issues that grant exclusive usage rights to the creator of the work. For research outputs and data to be truly reusable, they need to be appropriately licensed. Each scholarly work should be distributed under one of the several open licenses available. Creative Commons are the most commonly used licenses. They are free licences for creators to use when making their work available to the public. These licences help

28 https://www.budapestopenaccessinitiative.org/

the creator to give advanced permissionfor others to use the work under certain conditions.

- *Open peer review*. Peer review is the system that scientific journals are based on when deciding whether to accept or reject the articles they receive as candidates for publication. Usually, articles receive criticism and recommendations from external evaluators that help improve the quality of the final version of published articles. Anonymous peer review is the most frequent type of evaluation carried out by the great majority of scientific journals. Nevertheless, it has its drawbacks. For instance, there can be systematic biases among referees or arbitrary behaviour of referees, without the possibility for authors to reply to unfair comments. Open peer review tries to work out such handicaps by using reviewers and authors who are known to each other. There is still much discussion in the scientific community about the benefits and obstacles of this type of review. The number of journals that have implemented this model is still small. Publishers are introducing it very cautiously.
- *Citizen science*. Scientists are increasingly including citizens in their research projects to carry out activities like digitization of archives or the collection of data on a particular matter. Citizen science is carried out by persons who are not professional researchers affiliated with a research organization. It consists of public practice, participation and collaboration in scientific research in order to advance scientific knowledge. Through citizen science, people share and contribute to data monitoring and collection programmes. Usually, this participation is done as an unpaid volunteer.

There is no authoritative list of open science constituents. In addition to the elements listed previously, other activities that are commonly cited as being part of open science are: open education, next generation metrics for research evaluation or science communication and outreach. For a more complete list, the open science taxonomy[29] developed by FOSTER may be consulted. FOSTER (Facilitate Open Science Training for European Research) was a European funded project aimed to promote the integration of open access principles and practice in the current research workflow by targeting the young researcher training environment.

FOSTER is an example of the interest of organizations and governments around the world to bring up open science. UNESCO, OECD and research funding agencies have published statements if favour of open science and have placed into practice policies to advance the adoption of open procedures and activities.

29 http://oro.open.ac.uk/47806/1/os_taxonomy.png

In particular, the European Union has taken the lead in this advocacy work, with initiatives like the European Open Science Cloud (EOSC), the Open Research Europe platform, the funding of research projects directly related to open science, the adoption of open science practices as a requirement for the research projects funded by the Horizon2020 and Horizon Europe programmes, and so on.

Universities have been engaged in this process as well. In a recent report (From principles to practices: Open Science at Europe's universities)[30] the European Universities Association suggests a set of recommendations to be implemented at the institutional level. The first one of these is to create the conditions for mainstreaming open science. If it is to become the standard way of producing and sharing scientific knowledge, the continued involvement of all stakeholders is crucial. The active involvement of institutional leaders, in addition to national and European guidelines and regulatory frameworks, is also instrumental in creating a favourable context for the transition to Open Science.

In this line of creating the conditions to facilitate the open science, the FIT FORTHEM project includes open science as one of its main areas of interest. Furthermore, all universities in the Alliance have been involved in the development of infrastructures and policies related to open science for a long time.

This chapter is intended to share and disseminate the experience gained during this time for the different institutions in the form of best practices. We have collected 86 best practices from the partner institutions related to the different elements of open science.

OPEN ACCESS

Best practices for the green road to open access:

- One of the main obstacles to self-archiving is the cumbersome process of uploading content onto the repository. To facilitate the task of the authors, gateways have been implemented between the institution's research management system (CRIS) and the repository. In this section we present two of these initiatives by the University of Valencia and the University of Jyväskylä. The first case describes an example of a non-commercial CRIS system developed within the academic sphere. The second one describes Converis, a commercial application for the same purpose.
- Secondly, the University of Burgundy describes the HAL-uB repository. Repositories in France

30 Morais, R., Saenen, B., Garbuglia, F., Berghmans, S. & Gaillard, V. (2021). *From principles to practices: Open Science at Europe's universities 2020-2021.* EUA Open Science Survey results. European Universities Association, Brussels. https://eua.eu/downloads/publications/2021%20os%20survey%20report.pdf

have the particular characteristic of being articulated around a centralized architecture common to the entire country. This architecture is unusual in Europe. For this reason, the Burgundy experience may be of interest for the Alliance universities.

OPEN ACCESS

Best practices for the gold road to open access. Three more best practices are devoted to the publication of open access journals:

- The University of Valencia uses an instance of the OJS (Open Journal System) publishing system to publish more than 50 fully open access electronic journals. This service is especially appreciated by publishers in the Humanities and Social Sciences, where the dissemination and subject coverage of the journals have an important local component.
- One of the open access journals hosted by the OJS at the University of Valencia is REALIA. Research in Education and Learning Innovation Archives is an international open publication scientific journal. It was one of the first journals published entirely in electronic format. The know-how gained by the editors is presented in this document as a best practice.
- The University of Opole journals, previously published in print with limited circulation for the local market, have been moved online to an integrated OJS platform. Thirteen (13) journals have been operating on the platform since it was adopted in 2018.

OPEN DATA

- The University of Jyväskylä introduces its best practice in data management process. Following the objective that "Everything related to data management under the same roof," data management planning is done using software that is integrated into the whole data management infrastructure. It will enable researchers to both plan data management and put it into action from the same place.
- One additional best practice is the Team of Research Data Experts of the University of Mainz. To be able to offer scientists at JGU a wide range of services for research data management, the Team of Research Data Experts was founded in the summer of 2018. For this purpose, the services and competencies of various JGU institutions, the Unit for Research and Technology Transfer (FT), the University Library (UB), the Data Centre (ZDV), and the Mainz Centre for Digitality in the Humanities and Cultural Studies (Mainz) were combined.

CITIZEN SCIENCE AND SCIENCE COMMUNICATION AND OUTREACH

- SHARPER - Sharing Researchers' Passion for Engaging Responsiveness is a project funded by the European Commission aimed at involving citizens in research and sensitizing them to the role of researchers in society.

- SHARPER interprets the Researchers' Night as a social event to share with the public the passions that animate researchers in their work. Since the very beginning, it has been characterized by two main aspects: a) the use of streets, squares and other urban places as outdoor labs to talk about research and experiment it publicly and b) the collaboration between researchers and communicators to find new forms of public involvement and to provide researchers with training opportunities in the field of communication.
- Finally, the Museum of the University of Opole is an institution open to the public free of charge, catering to students of the Humanities and Social Sciences, hosting public events and academic conferences, and exhibiting the most precious paleontological, archaeological, historical and artistic treasures in the possession of the University. A part of these objects has been digitalized and been made available to citizens and tourists online through webpages, social media and a mobile application.

CHAPTER 5

GOOD PRACTICES OF CO-CREATION OF SCIENTIFIC KNOWLEDGE WITH SOCIAL AGENTS

Lola Garzón, University of Valencia
Néstor Vercher, University of Valencia

Introduction

Multidisciplinarity is the norm. The achievement of the most complex challenges to date has been accomplished thanks to the efforts of individuals from diverse areas of knowledge participating in shared processes of co-creation. Diversity is richness and, with this, it is increasingly necessary to address tomorrow's dilemmas with cohesive working groups from different corners of the innovation paradigm.

This chapter addresses the increasingly crucial role of the university in stimulating co-creation, knowledge transfer and the vertebration of active and dynamic innovation networks. To this end, contextualization is articulated around the interaction between universities and social agents, for the sake of economic and social development, who will then revisit a series of milestones by universities in the framework of the co-creation project promoted by FIT FORTHEM.

Contextualization

Universities, beyond their well-known status as providers of higher education services, play a central role in promoting scientific knowledge co-creation and shared innovation, by supporting a network of knowledge generation, advancement and dissemination that clearly has an influence on the activation of a new paradigm of systemic development.

For the identification of co-creation practices that contribute toward rejuvenating the social worldview of tomorrow's goals, the university's interaction with social agents – e.g., companies, non-profit organizations, regional, national and supranational institutions, among others – is both a necessary and challenging task.

The university's positioning on the innovation map is a challenge; not surprisingly, it requires an exhaustive analysis of the social demands both from the university's perspective and from that of its most immediate social environment, i.e., the regional environment and the one to which it most directly belongs – national or supranational – in the case of European institutions.

Among aspects to be debated in the creation of a new action agenda that effectively rebuilds our shared vision of the future, sustainability and the defence of democratic values are two of the most widely addressed issues. With the advent of the Sustainable

Development Goals (SDGs), to which world leaders adhered in 2015 after failing to achieve the targets set by the Millennium Development Goals (MDGs), the achievement of goals such as Quality Education (Goal 4), Gender Equality (Goal 5) or Responsible Consumption and Productivity (Goal 12), all through Partnership (Goal 17), has gained prominence.

Sustainable Development Goals (SDGs) are organized through a set of 17 goals, which are developed around 169 targets.[31,32,33] In this roadmap, education is also part of the puzzle. Thus, Goal 4, i.e., "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all," is specified in a series of targets such as "By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes" (Target 4.1.) or "By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations" (Target 4.5.).

However, even though the targets of Goal 4 develop a series of urgent and ambitious challenges, mostly related to access to education and equal opportunities, one may consider that the pivotal role of the university as an agent of change remains unexplored. The fact is that national agencies, such as ANECA - National Agency for Quality Assessment and Accreditation of Spain, have begun to promote the role of the faculty as agents of knowledge transfer by recognizing their work in this direction.

When it comes to addressing the aforementioned social challenges, whose achievement arising from the interaction between universities and social agents is fundamental, as we have argued, the Quintuple Helix Model emerges as a possible theoretical-practical foundation for such interaction. Two models preceded the Quintuple Helix Model: first, the Triple Helix Model and second, the Quadruple Helix Model. The first, framed by Etzkowitz and Leydesdorff (2000), was limited to exploring the relational interaction between industry, governments and universities. From that paradigm, the Quadruple Helix Model addressed a

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31 World Health Organization (2015). *Health in 2015: from MDGs, Millennium Development Goals to SDGs, Sustainable Development Goals*. World Health Organization. https://apps.who.int/iris/handle/10665/200009

32 Kumar, S., Kumar, N. & Vivekadhish, S. (2016). Millennium development goals (MDGS) to sustainable development goals (SDGS): Addressing unfinished agenda and strengthening sustainable development and partnership. *Indian Journal of Community Medicine*, 41(1), 1-4.

33 Scheyvens, R., Banks, G. & Hughes, E. (2016). The private sector and the SDGs: The need to move beyond 'business as usual'. *Sustainable Development*, 24(6), 371-382.

media- and culture-based public.[34] It is with the Quintuple Helix Model that this framework will consider sustainable development and social ecology.[35]

The triple, quadruple or quintuple helix model explores the interaction between government institutions, industry, society at large, the environment and the university. While the initial model, whose proponents were H. Etzkowitz and L. Leydesdorff,[36] already wisely combined the model of the knowledge society and knowledge economy to amalgamate the interaction between the above economic and social agents, it was with the subsequent versions of the model, i.e., the quadruple and quintuple (which benefited from the intellectual guidance of E. G. Carayannis and D. F. J. Campbell) that the co-creation paradigm was portrayed holistically. In fact, it would already be with the latest version of the model, i.e. the Quintuple Helix Model, that know-how, i.e. how to get something done, and knowledge are created, developed, transformed, and disseminated in the natural environment.

As Carayannis et al. (2012, p. 4)[37] argue:

The Quintuple Helix is a model which grasps and specializes on the sum of the social (societal) interactions and the academic exchanges in a state (nation-state) in order to promote and visualize a cooperation system of knowledge, know-how, and innovation for more sustainable development (see Carayannis and Campbell 2010, p. 62 [for further discussion]).

Thus, the Quintuple Helix is based on multidirectional interaction between different social agents, including academia, to create lasting cooperative ties that result in systemic changes for a better tomorrow. In the words of Carayannis et al. (2012, p. 5), "knowledge" is the pivotal element that transits to "innovation" and "knowhow" through its "circulation (...) between social (societal) subsystems."

The most important constituent element of the Quintuple Helix – apart from the active 'human agents' – is the resource of 'knowledge,' which, through a circulation (i.e., circulation of knowledge) between social (societal)

34 Carayannis, E. G. & Campbell, D. F. (2009). Mode 3 and Quadruple Helix: toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management*, 46(3-4), 201-234.

35 Carayannis, E. G. & Campbell, D. F. (2010). Triple Helix, Quadruple Helix and Quintuple Helix and How Do Knowledge, Innovation and the Environment Relate to Each Other? A proposed framework for a trans-disciplinary analysis of sustainable development and social ecology. *International Journal of Social Ecology and Sustainable Development*, 1(1), 41-69.

36 Etzkowitz, H. & Leydesdorff, L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university–industry–government relations. *Research Policy*, 29(2), 109-123.

37 Carayannis, E. G., Barth, T. D. & Campbell, D. F. (2012). The Quintuple Helix innovation model: global warming as a challenge and driver for innovation. *Journal of Innovation and Entrepreneurship*, 1(1), 1-12.

subsystems, changes to innovation and knowhow in a society and for the economy (see Barth 2011, p. 6 [for further discussion]).

One of the helixes of the Quintuple Helix Model is the education system, i.e., the academy, universities and higher education systems and schools. The formation of a state's human capital, in the words of Carayannis et al. (2012, p. 5), is shaped through "diffusion and research knowledge." Therefore universities, as agents of knowledge generation, change and progress, are central to reshaping the worldview.

The education system, as the first subsystem, defines itself in reference to 'academia,' 'universities,' 'higher education systems,' and schools. In this helix, the necessary 'human capital' (for example: students, teachers, scientists/researchers, academic entrepreneurs, etc.) of a state (nation-state) is being formed by diffusion and research of knowledge.

Figure 5 shows the evolution occurring between the Triple and Quintuple Helix, with the addition of the context of society and the context of natural environments for society thus evolving from the knowledge economy to the socio-ecological transition through the knowledge society and democracy.

In short, with the overcoming of many of the great historical challenges that have plagued humanity, e.g., hunger, wars or a lack of healthcare, its agenda has shifted towards the optimal exploitation of knowledge. It is in this great shared global challenge that the co-creation of scientific knowledge with social agents, having the university as its main liaison, places the university at the service of society, in the pursuit of its social and economic growth.

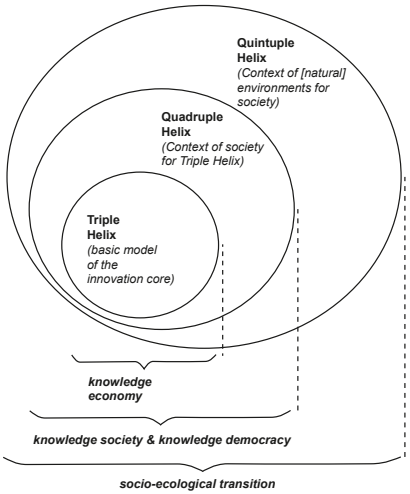

Fig. 5: The Quintuple Helix innovation model by Carayannis et al. (2012). [Adapted from Carayannis and Campbell (2012, p. 18), Etzkowitz and Leydesdorff (2000, p. 112) and Danilda et al. (2009),[38] by Carayannis et al. (2012)].

38 Danilda, I., Lindberg, M. & Torstensson, B. M. (2009). Women resource centres: a quattro helix innovation system on the European agenda. In Tri*ple Helix VII: 7th Biennial International Conference on University, Industry & Government linkages 17/06/2009-19/06/2009*.

In this way, it is essential to have a clear vision, which is as holistic as possible, of the different sub-challenges related to the attainment of the aforementioned co-creation, all this through identifying and mapping the interactions of the university with its environment in order to find inefficiencies that can be corrected.

For this reason, a large part of scientific research has been oriented towards studies with applicability in society, providing solutions to global problems and, ultimately, placing the university and its research at the service of human needs.

All in all, there are a series of reflections of special relevance in the construction of a new knowledge paradigm:

1. Universities cannot be "an island in an ocean" but must be able to relate to the different social agents in an agile and bidirectionally profitable way, for the benefit of a better tomorrow.
2. There are theoretical-practical models that contribute to providing rigor to the co-creation approach between the university and social agents, among which the Quintuple Helix Model stands out.
3. Adequate mapping of a society's needs, and of the actions that the university has taken in this regard, is indispensable for the continuous improvement of the interaction between research and social agents towards knowledge co-creation.

Best practices on co-creation

The co-creation practices identified in the FIT FORTHEM project are heterogeneous by nature and are adapted to the reality (also heterogeneous) of the regions where each university is located. Technological innovation, social innovation, entrepreneurship, technology transfer or culture valorisation are some of the areas in which co-creation between universities and other social, economic and institutional actors show great potential.

Co-creation practices are central for supporting leading economic sectors and fostering business product and process innovations. INNOTRANSFER, an example from the University of Valencia (Spain), is in line with this. INNOSTRANSFER is an attempt to set a regional innovation system based on the triple helix model. It is a multisectoral open innovation initiative promoted by the Network of Valencian Science Parks, whose activity supports its Regional Strategy for Innovation and Smart Specialization, RIS3. It works as a collaborative platform for sharing the challenges posed by the business sector and the solutions that the academic world can develop. This collaboration is flexible and can be materialized in any possible way, such as signing agreements, service contracts or joint submission to public funding programmes and any other forms of collaboration.

INNOTRANSFER is participated in by a wide range of stakeholders from the business sector (business

associations and private investors in the agricultural sector), the knowledge sector (five public universities, CSIC technology centres and technological institutes) and the public sector (the Valencian Innovation Agency funded the project). The organizations involved in INNOTRANSFER have formulated challenges and suggested solutions in different sectors. This is an example of the power that the Valencian universities have in the R&D sector and the ability to generate high-value projects for the Valencian business fabric. More than 1,100 companies and researchers registered for the conference or presented their projects, challenges, or solutions. During 2021, academic participation has been consolidated and the presence of the business sector reinforced through the adhesion of leading business organizations, responding positively to the call of INNOTRANSFER. Replicating a project like this requires a significant commitment of economic resources from the public sector, like the Valencian Innovation Agency made, as well as universities of a certain size and capacity located within the region.

The co-creation approach is also positive when designing new R&D centres. This is the case of the University of Opole (Poland). Since 2015, the University of Opole has been cooperating with business stakeholders, regional authorities and policymakers, sponsors (e.g., The European Regional Development Fund) and contractors to join its academic experts in building a modern multidisciplinary research and development centre in Opole and Prószków. The newly constructed interdisciplinary centre will include new labs and increase the quality of scientific developments to be commercialized and exploited in the region. For example, it will host facilities to develop projects in toxicology, ecology, soil science and precise farming technologies, equipped with experimental farming fields, educational routes and spaces for agribusiness events, such as fairs, exhibitions or conferences. As a result of the involvement of various actors in the design of the centre, it will provide services and facilities dedicated to the needs of stakeholders (e.g., an information system developed at the University of Opole) and 30 % of the infrastructure will be devoted to solving commercially viable problems and developing new technologies.

In the field of entrepreneurship, one of the most interesting examples can be found at the University of Jyväskylä in Finland. Through co-creation practices, they aim at encouraging the creation of new start-ups in the region and, in particular, at promoting an entrepreneurial attitude from an early age. The University has set up an alliance between university-level knowledge centres (the university in question and the Jyväskylä University of Applied Sciences), local governments (the city of Jyväskylä) and a network of secondary schools (Gradia Jyväskylä Educational Consortium). The incubator is called The Startup Factory and offers high-quality, customised training for start-

up entrepreneurs at their initial stages through the incubator and through educational institute coaching intended for business ideas and companies of educational institutes. Some of the specific activities carried out by The Start Up Factory are a digital coaching platform, entrepreneurial coaching for students and scientists and small product development funding. The Startup Factory coaches hundreds of business ideas yearly and provides exclusive long-term training to the twelve best start-ups of the region. Undoubtedly, the formation of partnerships with non-academic educational centres can make a difference in the promotion of an entrepreneurial culture.

Culture and heritage are areas in which universities can also develop great work through co-creation with social agents. The case of the University of Palermo (Italy) and its SiMUA - University Museum System project is a very illustrative example. The University of Palermo preserves a rich and highly valuable heritage, very important from the archaeological, historical, artistic and scientific point of view. In order to improve the valorisation of its cultural heritage, this university established the Service Centre SiMUA, a network of six thematic museums, well-acknowledged and appreciated in the region. Its museums and collections together tell the history of this university as well as the history of the whole of Sicily. SIMUA represents a win-win approach in the eco-systemic relationship among the municipal administration, the University and the local community for the valorisation of cultural and artistic heritage. Its success is also linked to the capacity to use different tools and methodologies for civic engagement, such as exhibitions, virtual tours and guided visits, concerts, the summer campus and educational labs.

When conceiving this type of co-creation initiatives, it is important to find complementarities and synergies with other projects in the field. In this regard, SIMUA is not an isolated example in the context of the University of Palermo, since there are other initiatives that also seek to enhance the role of the university in the cultural activity of the city. We refer to "Le vie dei Tesori," a festival initially organized by the University and then developed autonomously by a spin-off company. It takes place annually and involves a wide range of stakeholders (public and private stakeholders such as research groups, municipalities, non-profit organizations, students, small companies, owners of historical buildings), as well as different geographical areas in Sicily. The festival comprises a rich programme of routes, guided visits and many other cultural activities in the city, in which the local community is strongly engaged. Although the example of the University of Palermo describes a territory with great cultural resources, these initiatives could be replicated on a smaller scale and in cooperation with other universities and cities.

CHAPTER 6

GOOD PRACTICES IN COMMUNICATION OF SCIENCE

Katarzyna Molek-Kozakowska, University of Opole, Institute of Linguistics, molekk@uni.opole.pl
Isabel Mendoza-Poudereux, University of Valencia, Interuniversity Institute for Local Development
Carolina Moreno-Castro, University of Valencia, Research of the Institute on Social Welfare Policy

Science communication ensures that the results of academic work have the desired societal impact. Public understanding of science, the recognition of scientist merits and the transfer of knowledge to society cannot be ensured without translating academic discourses into more accessible popularisation materials and channelling a universities' resources to promote them.[39,40,41,42]

Historically, public research institutions only disseminated their results among the scientific community through conferences and seminars or by publishing papers in academic journals. In fact, in the nineties of the 20th century, the leading scholarly journals such as Science or Nature, among others, decided to start up press offices to send directly to the international newsrooms their more mediatic scientific advances, avoiding the mediatisation of public research institutions or universities. However, the situation changed at the beginning of the 21st century when scientific institutions empowered themselves to communicate to society not only scientific knowledge but also good academic practices like participation in civic organizations, citizen forums, labs, think tanks, public policies and others.[43] In this sense, knowledge transfer is a "voluntary and conscious act between individuals and organizations and results in the joint acquisition of intellectual property between the source and the recipient," as

39 Di Nauta, P., Merola, B., Caputo, F. & Evangelista, F. (2018). Reflections on the role of university to face the challenges of knowledge society for the local economic development. *Journal of the Knowledge Economy*, 9(1), 180-198.

40 De Wit-de Vries, E., Dolfsma, W. A., van der Windt, H. J. & Gerkema, M. P. (2019). Knowledge transfer in university-industry research partnerships: a review. *The Journal of Technology Transfer*, 44(4), 1236-1255.

41 European Commission (2020). Horizon 2020 Work Programme 2018–2020. 16. Science with and for Society. European Commission. https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-swfs_en.pdf

42 Teixeira, S. J., Veiga, P. M. & Fernandes, C. A. (2019). The knowledge transfer and cooperation between universities and enterprises. *Knowledge Management Research & Practice*, 17(4), 449-460.

43 Kupper, F., Moreno-Castro, C. & Fornetti, A. (2021). Rethinking science communication in a changing landscape. *JCOM: Journal of Science Communication*, 20(3), 1-7.

stated by Teixeira. For this to be possible, the role of institutional science communication is essential to transfer and communicate science to society. In addition, the efforts toward visibility and transparency help build an institution's reputation and, with it, their wider impact by attracting the attention of other researchers, the media, as well as industry and policy-makers. This is especially important in the case of universities, as visibility and reputation translate into a higher quality ranking and the extensive enrolment of new students at all levels thereafter.[44] Over the last decades, mainstream media companies have appropriated the field of science communication for their own benefit. Science publishing and popular science have become lucrative businesses and researchers' work as communicators has been subjected to market logics in many countries. Given today's negative perception of mainstream media covering some important scientific developments (e.g., COVID-19) by breeding uncertainty and sensationalism on the topics for their profit, efforts need to be taken to ensure that science communication is not left to conventional media. The relevant role that academic institutions play as a generator of quality science information and knowledge is crucial.

As science communication partly overlaps with both science journalism and popular science, scientists can benefit from best training and practical know-how in these neighbouring areas. For example, resources and skills for practical science communication training have already been aggregated.[45] Some of them include: (1) identifying and understanding the needs of target audiences, (2) using the appropriate content and formal devices, from stylistic and visual aids to rhetorical strategies, as well as (3) delimiting the purpose and intended outcome of the conversation, from simple information flow to engagement building or the uptake of certain behavioural patterns.

However, the expertise in science communication is not limited to tricks of expression only, be they narrative or visual. The key factor is how to select and frame science-related information in a way that is compatible with the target audiences' prior knowledge, the experience of media usage and its sense of relevance. In fact, science communicators should consider the social, political and cultural context of the reception of science information and be able to adjust their strategies accordingly.

Science communication, as all communication, has been negatively affected by how mainstream media

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44 Johnes, J. (2018). University rankings: What do they really show? *Scientometrics*, 115(1), 585-606. https://doi.org/10.1007/s11192-018-2666-1

45 Mercer-Mapstone, L. & Kuchel, L. (2017). Core skills for effective science communication: a teaching resource for undergraduate science education'. *International Journal of Science Education*, 7(2), 181–201. https://doi.org/10.1080/21548455.2015.1113573.

channels are losing audiences due to new technologies. Citizens have moved to new online platforms, where they have greater control over the content they want to consume and even produce. While the media companies are updating their strategies of reaching their audiences, the established players of science communication need to do so as well.

Also, successful communicators have concluded that by simply bombarding audiences with more information and using all possible dissemination channels is not the solution to increase the public understanding of science. In fact, this often comes only with intense outreach and relationship building. That is why more attention is now put into the quality (not quantity) of science communication and to recommendations and best practices, such as the ones collected in the present volume.

According to Olesk et al. (2021),[46] the quality of science communication can be evaluated along three dimensions: (1) trustworthiness and academic rigour, (2) presentation and style and (3) connection with society. The first dimension encompasses the sourcing of science news from peer-reviewed journals, with appropriate referencing and expert credentials. It also includes a focus on factuality and objectivity, avoiding exaggerated claims, oversimplifications or biased illustrations. Ideally, the presentation should be balanced and reflect a variety of views and stakeholder interests. Like science, science communication should also be transparent about any institutional support, funding source, authors' background and interest behind a scientific discovery.

Regarding presentation and style – the second dimension of quality science communication – recommendations include providing scientific news in straightforward language, with clearly explained key concepts and visualizations, if possible. Contextualizing and explaining the relevance of a scientific advancement often proves useful for the audience to build a gradual understanding of scientific progress. Last but not least, resorting to emotional cues or storytelling, interesting or experimental formats and dialogic communication often gives the best results.

Thirdly, the connection between science and society can be maintained by providing more information and purposeful selection and targeting of that information. It should enable the target audience to be interested in acting on that information in order to bring about an individual or societal change. In the longer perspective, such communication contributes to increased science literacy and makes societies both responsive and responsible for the uptake of

46 Olesk, A., Renser, B., Bell, L., Fornetti, A., Franks, S., Mannino, I., Roche, J., Schmidt, A. L., Schofield, B., Villa, R. & Zollo, F. (2021). Quality indicators for science communication: results from a collaborative concept mapping exercise. *JCOM* 20(03), A06. https://doi.org/10.22323/2.20030206.

beneficial technologies and the avoidance of harmful effects.

One of the FORTHEM Alliance's mottos is "Sharing knowledge in Europe to shape the future of Europe." To reach that goal, the partner universities have started mapping and integrating their communication and dissemination resources of the Alliance-level project results and adapting their institutional strategies of communication to the concept of a joint "European University."

We also constantly learn from one another by sharing best practices and exchanging ideas that help overcome the existing barriers of science communication in the EU and that embrace European scientific and educational integration. Some of those best practices are as follows:

The University of Valencia has a relatively centralized and coordinated approach to science communication with a special unit known as the Science Culture of Innovation Unit Chair (UCC, in Spanish) for Scientific Dissemination. The UCC website offers information on all activities, awards, publications and projects in three languages (English, Spanish and Valencian), making it easy for local and international audiences to monitor their work. The University prides itself on an efficient press release system that includes science news related to UVEG research results, as well as institutional outreach activities. The press releases and science information are published in different sections of the UVEG website, are sent to the media and are also disseminated through institutional social networks and Telegram channels.

Meanwhile, the University of Jyväskylä's communication office makes sure that its researchers and experts are within the reach of the media, responding to inquiries and commenting on current scientific developments when asked.

The Johannes Gutenberg University's Institute for Theoretical Physics offers interactive public lectures on anything from fundamental physics to cosmology to building engagement and promoting science. These events take place several times a year at the State Theatre of Mainz, which offers seats to several hundred interested guests. Such regular lectures, and their recordings shared online, have become a part of the cultural and entertainment life of the city and region. In a likewise manner, the University of Valencia works closely with academic associations and local partners. For example, it organizes the annual Mathematical Routes event in the city of Valencia, giving a chance for some 7,000 secondary school students to develop positive attitudes towards maths and achieve more meaningful learning in an urban setting. It also offers schoolteachers a periodic upgrading of science knowledge through online "morning sessions" (Matinales) that reflect new advances in various disciplines and are available on the YouTube platform.

The University of Palermo also keeps its campus open for teachers and pupils, especially during regular science events called "Esperienza inSegna". It holds popularizing conferences on many topics, theatrical performances, guided tour visits, and has an open astronomical observation site. The high point of the festival is for pupils of every school and grade to showcase interactive exhibits they built with their own teachers before Esperienza inSegna. During the event, they can explain the shows to peers and science fans. This event attracts dozens of schools, hundreds of student/teacher presenters and thousands of visitors to the UNIPA campus by bridging fun and promoting STEM. A similar open-days Science Festival is regularly staged at the University of Opole, which targets secondary school pupils especially and offers a sneak peek of university resources, labs and study facilities for prospective candidates. With the evolving academic landscape and the need to keep incoming students aware of its potential, this University of Opole event was recently converted into a virtual tour, complete with an online user-driven interface, video libraries, streaming of interviews and a live Q&A forum.

In complementary fashion, the Johannes Gutenberg University reaches out to citizens by participating in public open-air fairs (recently with their virtual equivalents) to engage Mainz inhabitants and visitors in experimental science and hands-on involvement with scientists. Together with its partners from Mainz Science Alliance (Mainzer Wissenschaftsallianz), it brings its top scientists closer to the public by arranging public talks and demonstrations during regular Science Markets (Wissenschaftsmarkt).

Meanwhile, the University of Latvia has been reaching out to its alumni through various opportunities for graduates and students to participate in common cultural events, talks and networking events in the Alumni Club. The objective is to call on the expertise of professional and personal contacts to valorise the University diploma and promote research activities to external stakeholders.

To ensure that science communication is coherent and properly contextualized, the University of Jyväskylä's communication unit regularly organizes theme weeks related to the university's core research. During a theme week, a specific problem and research related to it are in focus. An important function of such weeks is to correct misconceptions and promote evidence-based recommendations, as well as to tackle taboo or controversial topics. Having overarching topical issues, such as "travelling" in 2021, also helps dozens of University of Burgundy researchers to integrate their scholarly outputs into a common European Researchers' Night event. Via installations, games, onsite visits and interactions, interested visitors could smoothly move from one scientific aspect (of "travel") to another, exploring the latest research done locally in the larger context of European-level events. Re-

searchers' nights – annual festivals, science fairs and shows – are also popular with the University of Latvia, which takes the opportunity to promote its scholars' academic achievements on such occasions.

The University of Jyväskylä publishes JYUnity – a multi-stakeholder magazine presenting the latest research, staff and faculty news. Given its online format, English-language editing and regular publications, which is an upgrade to the previous print magazine, the science-related information is now available to internal Finnish audiences and outsiders. The University of Jyväskylä is not the only university to publish a magazine, as the University of Opole's Indeks is its flagship popularization and internal news outlet. With a history spanning over three decades, this richly-illustrated Polish-language magazine has evolved into a bi-monthly "must-read" for research managers, established and early-career scholars and the university community. It integrates the faculty and offers a way to follow decisions and trends in academia.

An essential aspect of transdisciplinary science communication is related to cross-institutional and inter-sectoral networking, which the University of Burgundy has been developing and promoting through its Open Labs days and Experimentarium. The former is the occasion for the university community to visit selected labs and to inspect their resources and best practices. At the same time, the latter is a space provided for early-career researchers to establish new contacts and find partners who share similar interests in the region through workshops and conferencing with academic and non-academic institutions. Since 2009, the University of Valencia has also allowed citizens to visit its Science Park during special, and when necessary virtual, open days – Expociencia.

The above overview of best practices by the FORTHEM Alliance demonstrates a degree of coincidence in what the partner universities tend to do within science communication (open days, science fairs, researcher nights, publications), but there is a variety of specific ways they implement their best practices locally. All FORTHEM partners can efficiently interpellate various target audiences and stakeholders via tailor-made opportunities for interacting with local researchers and scientific outputs. They are also aware of their public mission to increase science literacy through transparent, credible and, at the same time, clear and exciting communication of academic achievements.

All universities are increasingly using the newest mediation technologies and virtual and online tools for dissemination. As a result, they have not been prevented by the COVID pandemic from making their local, regional, national, and sometimes even international stakeholders aware of ongoing academic achievements and their possible societal impacts.

CHAPTER 7

GOOD PRACTICES IN HUMAN CAPITAL

Néstor Vercher, University of Valencia
María D. Pitarch-Garrido, University of Valencia

The role of human capital management in higher education organizations

Human capital is central in a knowledge-based economy.[47] This concept refers to the social and economic role of education. However, it is important to adopt a holistic approach that sees education as part of people's personal development and well-being. Indeed, since the end of the 20th century, the theories of organizational management of human capital have shifted from a view toward the economic contribution of staff to a philosophy-based perspective of lifelong learning and development.[48]

Human capital literature mostly focuses on business environments. Nevertheless, universities are social institutions and organizational entities that mobilize a human capital of great importance to the whole society.[49] Discussions dealing with the strategic good use of the human capital existing in universities are growing. At the same time, an increasing number of innovative practices are being identified across the world.

The management of human capital becomes extremely important for higher education organizations as education and knowledge are both their main input and output.[50] Through improved human capital management, universities can better address the different challenges they face, such as competition at an international level between public and private universities, the need for internationalization and transferability, and the need to adapt national systems to European-level systems. These changes are also necessary to adapt to the exponential development of science and technology, with new fields and new tools that can solve important societal challenges.

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47 De la Fuente, A. & Ciccone, A. (2002). *Human capital in a global and knowledge-based economy*. European Commission Directorate-General for Employment and Social Affairs Unit A.1. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.125.842&rep=rep1&type=pdf

48 Dolan, S., Valle, R., Jackson, S. & Schuler, R. (2007). *La gestión de los recursos humanos: Cómo atraer, retener y desarrollar con éxito el capital humano en tiempos de transformación* (3rd Ed.). McGRAW-HILL/Interamericana de España.

49 Menegat, J. & Colossi, N. (2009). Management of human capital in higher education institutions, *Diálogo*, 15, 73-88.

50 Minică, M. (2020). Knowledge and intellectual capital management in higher education. In D. Flau, S.Hosková-Mayerová, C. Ispas, F. Maturo & C. Flaut (Eds.), *Decision Making in Social Sciences: Between Traditions and Innovations* (1st Edition, p. 67-78). Springer.

Gander and Girardi[51] conducted an analysis of the factors that may affect the development of a university career, based on the scientific literature on the subject, and grouped these factors into two groups: enablers and barriers. In both cases, the factors may be institutional or personal. Focusing on the former, in the case of the enablers, it is worth highlighting transparent practices in hiring and promotion processes, support for the improvement of qualifications, inclusive culture, etc. In the case of barriers, these authors point to the lack of opportunities, lack of transparency, lack of support for young people, outsourcing of certain services or research processes, etc. In addition to these factors, there are those that depend on the individual and on the self-management of professional life. However, the existence of an adequate university environment is fundamental for developing university human capital capable of generating positive synergies both in the university and in the socioeconomic environment. In such environments the rules of the game should be known from the beginning and equity for all workers, as well as physical and mental health, should be guaranteed.

Aspects such as sharing research infrastructures; research integrity; promotion of equality, diversity, and inclusion; recognition of methodological rigour; transparency; reproducibility of scientific results (open science); and research evaluation processes are some of the basic issues that Science Europe (2021)[52] identifies as key to improving research conditions in Europe. All of them have to do with university careers and ways of doing science, i.e., with people, researchers and university staff.

The aim of the good practices in human capital collected in this book is to contribute toward generating ideas that will help to improve working conditions in all FORTHEM European universities. Quantifying working conditions is complex, since there are phenomena that are not quantifiable: those related to intangible research results. A high qualification in complex problem solving for both students and researchers depends on many relationships and activities carried out by administrative staff, academics, researchers and students that do not involve a quantifiable process. Therefore, the detection of good practices is an appropriate strategy to promote mutual learning and the possibility of improving the already positive actions that are being developed in European universities to improve the quality of their working environment.

As we will see below, the good practices in human capital detected in the FORTHEM Alliance refer to services offered by universities that help staff and

51 Arthur, M. (2014). The boundaryless career at 20: where do we stand, and where can we go? *Career Development International*, 19(6), 627-640.

52 Science Europe (2021). *Strategy Plan 2021-2026*. https://www.scienceeurope.org/our-resources/strategy-2021-2026/

students to carry out their work in the best possible way. In all FORTHEM universities there are already adequate basic conditions, such as transparency in the hiring and promotion of researchers and academics (with public and known criteria), adequate material conditions (equipment, computer networks, etc.), etc. Having pointed this out, two aspects should be noted: firstly, the good practices detected in other areas, such as open science or internationalization, also have a human capital aspect, i.e., university personnel benefit in their work from the existence of good practices in other fields or key areas. Secondly, many of these good practices are oriented to the entire university community. Therefore, they also benefit researchers, who are the most relevant human group for the FIT FORTHEM project, particularly those who are starting their careers. As all EU studies and reports point out, researchers have the greatest capacity to generate a very positive impact on human development, representing a fundamental element of the staff in European universities, and this has been understood since the time of Humboldt.

FORTHEM universities follow the model of a university with responsibilities in teaching and research, including the third mission, which is the relationship between university and society. Therefore, the management of human capital is more complex, having to attend to very diverse aspects: planning and organization of teaching-learning programmes, availability of support structures for continuous training, improvement of available technology and equipment, academic, personal and psychosocial support and guidance services, support for innovation processes in all university areas, etc. In other words, good practices in university human resources are interwoven into all the issues that contribute to a higher quality university offer. However, in this book we want to highlight those that are most closely related to the key themes of FIT FORTHEM, particularly internationalization, open science and co-creation of knowledge with stakeholders outside the university.[53]

In a good number of universities, human resource management includes all university groups, both employees at different levels and services, as well as students. One of the most important elements, common to all of them, is mobility. The main objective of promoting mobility in universities is to improve their ability to collaborate with foreign universities and to expand their network of contacts. The idea is that all members of the university community (students, professors, researchers and administrative and service staff) should acquire, update and develop the

53 European Commission (2020). *Towards a 2030 Vision on the Future of Universities in Europe*. European Commission Directorate-General for Research and Innovation Directorate G – Research & Innovation Outreach. Luxembourg: Publications Office of the European Union.

necessary skills to develop international cooperation, in particular language skills. University mobility programmes are widespread in Europe and have the clear support of European institutions, especially the Erasmus Program. This could be the first step towards greater internationalization of R&I in European universities to help promote bilateral and multilateral collaboration.

The recruitment process for research staff in European universities needs to change in order to integrate open science practices. There is also a need to encourage greater intersectoral mobility, which will require some changes in the way researchers are evaluated. Current metrics primarily measure the impact of results through publication in journals, but this may contradict European open science policy, as well as undervalue the transfer of research results to society, education and leadership, among others.[54]

On the other hand, an EU concern has been to create an egalitarian society, with opportunities for all citizens regardless of race, gender, place of residence and so on. It is also important for universities to avoid bias. Science Europe (2019)[55] has carried out a study on the factors that do not really measure the quality of teaching. Rather it draws up a list of recommendations from which it emerges that soon there will be important positive changes in the way university education is measured and funded. One of the key aspects of change is the greater professionalisation of university workers and another is the consolidation of non-discriminatory procedures for measuring the impact of research.

Thirdly, it is clear that societal changes are also challenges for universities. The R&D policy of many countries encourages the inclusion of these challenges as research objectives. This is also related to the human capital of universities, as not all researchers trained in European universities will be able to pursue an academic career, so they need to be prepared for a wide range of skills to enhance their employability in non-academic sectors. The contribution they can make to the business sector is very important, but they do not always have the necessary competences ready for it. Lifelong learning helps to ensure a career path commensurate with the high qualifications of these researchers.

Finally, it is worth stressing once again that human resource management is key to achieving an innovative ecosystem in Europe. This is pointed out by Science Europe (2021) in its strategic plan. This plan

54 Van de Wall, R. (2019). *The Ghent Model: new career and evaluation model for professorial staff. Ghent University*. https://www.universiteitenvannederland.nl/recognitionandrewards/wp-content/uploads/2019/11/Rik-van-de-Wall-Keynote-Rotterdam-2019.pdf

55 Science Europe (2019). *Study on Research Assessment Practices*, Technopolis. http://www.scienceeurope.org/media/fmdihoqy/se-study-on-research-assessment-practices-report.pdf

insists on the need for building the strongest possible research ecosystem for the benefit of science, researchers and society.

The following are the main good practices in human capital developed by FORTHEM universities.

Best practices in human capital management

In the FIT FORTHEM project we collected a broad spectrum of good practices in the management of human capital at universities. They comprise a great number of fields and activities, ranging from goal-oriented practices, well-being services, personal development for women, leadership, education projects between universities, international exchange programmes, advanced centres for practical training, industrial PhD programmes, mutual mentorship projects and actions for vulnerable groups.

Well-being is an area of growing interest in public organizations, also at universities. The Wellbeing Development Project 2019-2021 is a fascinating example from the University of Jyväskylä (Finland) that illustrates how these organizations can provide improved services to support the well-being of their employees. More diverse well-being services are being developed to be provided to the whole university community (including grant researchers, unpaid trainees) as pilot experiments. The project offers a broad toolbox of services for promoting well-being, with particular focus on mental well-being and the development of one's own well-being skills. More in detail, some of the provided services include i) an inhouse-produced online programme based on self-study in the development of well-being skills and complementary coach-led group coaching; ii) collaboration with The Finnish Institute of Occupational Health on self-studying focusing on the themes of self-management, time and work management and recovery; iii) physical well-being-oriented sports coaching led by a personal trainer; and iv) well-being webinars available for the JYU work community. Efforts have also been made to develop the well-being skills of supervisors, which will help to ensure that well-being concerns are addressed and ways of solving potential challenges are considered together between supervisor and employees. Projects like this can be adapted to other universities, according to their specificities and needs. However, even small actions for well-being can have a significant positive impact on universities' human capital and on the institution overall.

The qualification of faculty teaching competences in higher education is another important aim pursued by academic institutions in order to innovate teaching and learning. The University of Palermo has developed great work in this field by implementing the Mentorship Project. It is a voluntary training programme delivered by professors, who become mentors of other colleagues, with the aim of helping to increase the quality of their courses. The project is based on three

activities: mentoring, training/workshops, and formation of a community. Each teacher who adheres to the programme is assigned two mentors who have the role of helping him/her to improve the quality of her/his teaching. Mentors, for instance, are responsible for attending other teachers' lessons, meeting students to gather their opinions and proposing and sharing joint improvement actions. Also, several events are organized with the aim of lending insight into many topics related to academic teaching, among them a three-day residential workshop with foreign experts. Overall, the project encourages building a community of academics that work together to improve the quality of their teaching. This formula is easily reproducible in any learning context. Mutual collaboration is crucial to upgrade faculty professional action in teaching, organizational socialization and human capital as a whole.

The management of human capital in universities should also address the needs of specific groups. Women are one of the groups that require particular attention and action from universities. More activities aimed at reducing gender inequalities are central for achieving universities that offer equal opportunities to their members and that are committed to dealing with one of the most important social challenges today. The University of Mainz (Germany) has partially addressed this problem by implementing the Ada Lovelace Talent Development project. This project aims at attracting girls and young women to careers in science, technology, engineering and mathematics (STEM) fields. It wants to break down traditional role models and strengthen the positive image of STEM professions. The Ada Lovelace project is supported by the Rhineland-Palatinate Competence Centre for Women in STEM, funded by the European Social Fund, as well as the Rhineland-Palatinate Ministry of Women's Affairs and the Ministry of Science. Ada Lovelace Talent Development offers mentoring programmes for female PhDs and Junior Postdocs, and for female Senior Postdocs and Junior Principal Investigators. The 1-to-1 mentoring is embedded in a mentee group coaching process to boost self-reflection as well as team building. In addition, these programmes offer individual coaching, workshops, networking, excursions, individual profiling and support for conflicts. The potential of building a strong and active network of female scientists is one of the key lessons learned at the University of Mainz. This practice is highly replicable in other universities, where there is surely room for improvement in women's equality and leadership.

People with functional diversity represent another group requiring special attention in our universities. Their jobs are often not adapted to their needs, this being a serious constraint on their professional activity. The University of Valencia is a good example of how to improve the situation of this group. The University of Valencia was the first in Spain to regulate

measures to promote the inclusion of teaching and research staff. Since 2007, it has been developing actions to encourage the inclusion of teaching and research staff with disabilities (to a degree equal to or greater than 33%) through different financial and teaching aids. This project provides funding for the acquisition of specific products necessary for the performance of their functions in an optimal way. It also covers justified expenses for transport, catering and accommodation of support staff hired by teachers with disabilities, to carry out accompanying and assistance tasks during trips to carry out research tasks outside the University of Valencia. Further, staff affected by a disability that limits their teaching function may request a reduction in their teaching dedication, ranging from 10 to 60 hours per academic year. The measures provided in the project are preferably aimed at teachers with a full-time dedication regime, with some exceptions. This could be extended and adapted to other university community members. Indeed, this practice is easily replicable in other organizations and shows great impact on universities' human capital.

Finally, there are many other actions to be concerned about beyond the fields of welfare, teaching excellence or attention to vulnerable groups. One of these concerns is that *the management of the human capital of universities should be adapted to the particular conditions of each region and should involve the needs of other neighbouring regions*. This is well reflected in the case of the University of Palermo and their project "University Corridors for Refugees UNICORE 3.0." This is a programme aimed at increasing opportunities for refugees to continue their higher education in Italy. The selected students are exempt from paying tuition fees and receive financial support for plane tickets and visa-related expenses, as well as a study grant to help them during their stay in the country. Through this project, the University of Palermo contributes to improving the human capital of the organization and that of other countries, while addressing one of the most serious social problems of the moment.

The University of Opole is also developing educational projects in collaboration with other regions. Two main projects have been carried out placing emphasis on strengthening professional competencies in the labour market among students of natural and technical studies. The first one is a joint cooperation of the University of Opole and the Hradec Králové University (Czech Republic) with the goal of increasing opportunities for graduates in the cross-border labour market. There was the necessity to adjust academic study programmes to the modern requirements of the labour market. Within this programme, students had the opportunity to take part in joint lectures, workshops and professional internships in Poland and the Czech Republic. The second project deals with educational innovations for increasing the employability of graduates in ecotourism. By strengthening practical

competencies in communication, knowledge or skills, these innovations aim to exploit the untapped potential of protected natural areas in economically weaker border regions in Poland and Czechia.

Conclusions

The good practices in human resources developed by the universities of the FORTHEM Alliance point to some aspects to be highlighted:

- The importance of continuous training.
- Promoting international mobility.
- Supporting workers' health.
- Responding to the needs of the socio-economic environment.
- Promoting opportunities for all, equity in access and in the development of academic and research careers.

In short, human resources are a key element in universities; without staff (in all fields) they could not exist or achieve excellence. The quality of teaching, research and transfer lies in those people who make up the university community. It is necessary to continue striving to improve their working conditions, promote innovation, mobility, equal opportunities, support young researchers and encourage interconnection between people and between territories

CHAPTER 8

INTRODUCTION TO THE 86 CASES OF GOOD PRACTICES IN THE FORTHEM ALLIANCE

Félix Fajardo Magraner, University of Valencia
J. Javier Serrano-Lara, University of Valencia

The detection and knowledge of the good practices that are being carried out by the different universities that are part of the FORTHEM Alliance can contribute significantly to improving international relations between the universities, strengthening the ties between the members of the Alliance and removing barriers to facilitate collaboration and mobility within the Alliance.

The seven universities that are part of the FORTHEM consortium carry out a considerable number of good practices that can serve as an example for the universities of the Alliance themselves, as well as for other institutions dedicated to the academic and/or research fields. In the present work, a total of 86 good practices are compiled that are grouped around 5 key themes: the internationalization of research, open science, the co-creation of knowledge between academia, the business sector and civil society, human resources within the university and the communication of scientific results to society (fig. 6).

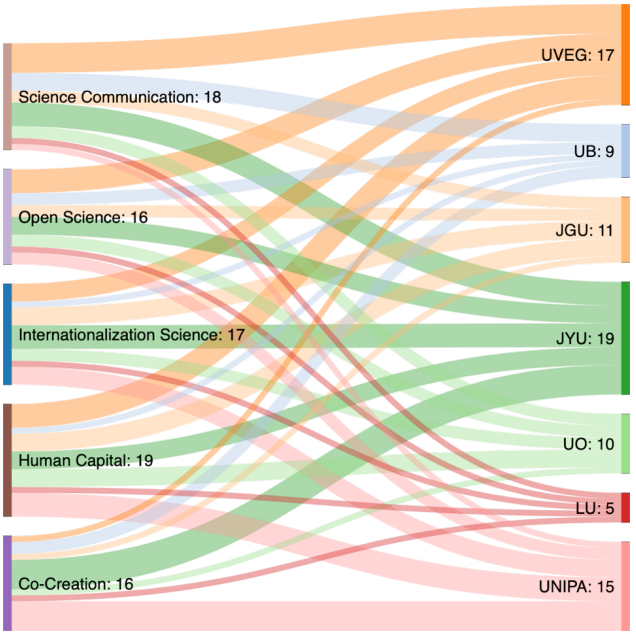


Fig. 6: Number of initiatives according to key theme ad university. Own elaboration

FORTHEM universities pay special attention to the internationalization of science, due to its strategic importance for the advances of scientific and academic work and for the international positioning of the consortium partners. Proof of this are the 17 good practices included in this document. The actions carried out in this area are diverse in nature, although the spirit of all of them consists in reducing obstacles and

encouraging participation in international projects and events, as well as facilitating the mobility of students and researchers. Proof of good practice in this matter are the results of the good practices included in this book, since through the implementation of these initiatives results have been achieved, such as doubling ERC grants in the H2020 framework compared to previous calls, obtaining funding for hundreds of international projects, increasing the number of foreign doctoral students, carrying out training courses on internationalization for hundreds of researchers and periodically holding international events with the participation of a large number of renowned academics.

Another key element in the FORTHEM Alliance is the promotion of Open Science. In this book, 16 good practices have been compiled, the objectives of which are to improve scientific data repositories and/or to promote the publication of academic papers in open access platforms and journals. The training and support provided in the field of open science to students and researchers through the actions carried out by the different universities have allowed the creation of open repositories with hundreds of thousands of documents and the launch of more than 70 scientific journals from open access. In addition, the concept and importance of open science has also been disseminated to broad spectra of society.

The co-creation of knowledge between FORTHEM universities and non-academic partners (business sector and civil society) is another strategic issue addressed by the members of the Alliance. In this text, 16 good knowledge co-creation practices have been compiled that have been implemented in the seven universities of the consortium. The fundamental objective of these practices is to establish collaboration agreements between the academic sector and the business and/or civil sector to respond to the problems and demands presented by society. The actions recorded in this document have succeeded in establishing collaboration mechanisms that have materialized in the creation of multiple start-ups and spin outs, as well as in the establishment of numerous agreements with public and private companies. In addition, some of the actions have provided support, help and training to hundreds of citizens and small and medium-sized companies.

The communication of science and the transmission of scientific results to society is an essential part of the functions attributed to public universities, so that their empowerment is one of the strategic objectives of the FORTHEM Alliance. The general objectives of the 18 practices carried out in the 7 universities of the consortium consist of the dissemination of scientific results, the promotion of citizen science and scientific literacy and, ultimately, the increase in visibility of the university and the researchers in society. Thus, the good practices presented here have made it possible to achieve remarkable results such as the holding of

different events to disseminate science with a consolidated track record, which have the participation of hundreds of scientists and thousands of citizens where they are held and present multiple activities of various kinds suitable for all audiences. Similarly, some of the actions have also made it possible to increase the presence of universities and researchers in the media and on social networks.

Finally, human capital is the most important element of the FORTHEM Alliance. Proof of this is that the best practices for this strategic issue are the most numerous, registering a total of 19 actions. The main objectives of these internships consist in attracting talent, stabilizing research staff and the permanent training of research and administrative staff. The results obtained from these actions have made it possible, among other things, to increase the international mobility of doctoral students and university workers, increase the hiring of foreign researchers, consolidate the permanent hiring of excellent doctors and teach multiple training courses aimed at improving the working capacities of the university's human resources. In addition, other actions have also been carried out aimed at promoting equality, non-discrimination and the inclusion of research personnel with functional diversity.

INTERNATIONALIZATION OF RESEARCH GOOD PRACTICES

Building a research group with international R&D&I capabilities and aligning it with the Research support services at the departmental and central administration levels

SUMMARY: The research group led by prof. Giorgio Micale started 15 years ago building an international network focused on writing and implementing EU projects. The team developed their activities following four key actions that led them to achieve successful results.

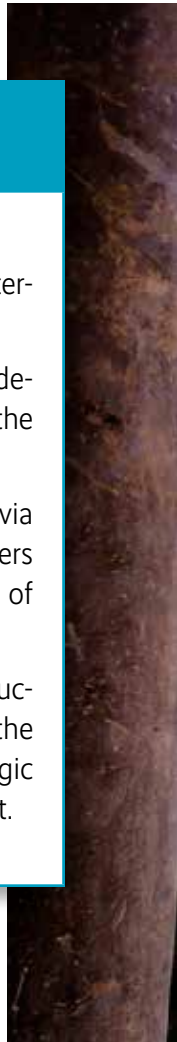
AREA OF ACTION: Internationalization of science

dipartimento di ingegneria unipa

DESCRIPTION

The core of the team's "good practices" can be summarized into four key actions:

1. Identify how your expertise can be appreciated and useful within a new consortium proposing an interesting concept, even if such concept concerns topics not covered by your R&D activities so far.
2. Respect roles and duties assigned by the GA, trying to overtake problems with flexibility and never denying support when needed by the consortium, even if that may be out of the strict description of the work you have to carry out according to the GA.
3. Keep a high level of interaction with all consortium members, also promoting "human connections" via the exchange of students with other R&D institutions or supporting R&D activities of industrial partners by sending junior staff for short internships under your own supervision (this can boost the activities of the industrial partner and, in some cases, of the whole project, if those activities are crucial).
4. Maintain continuous interaction with key offices of your institution, supporting preparation and conduction of EU projects (at departmental and university levels), share with key offices all actions related to the project's administration and management, budget preparation, spending control, as well as any strategic decisions which concern the possible roles of your team within the consortium and within the project.



RESULTS

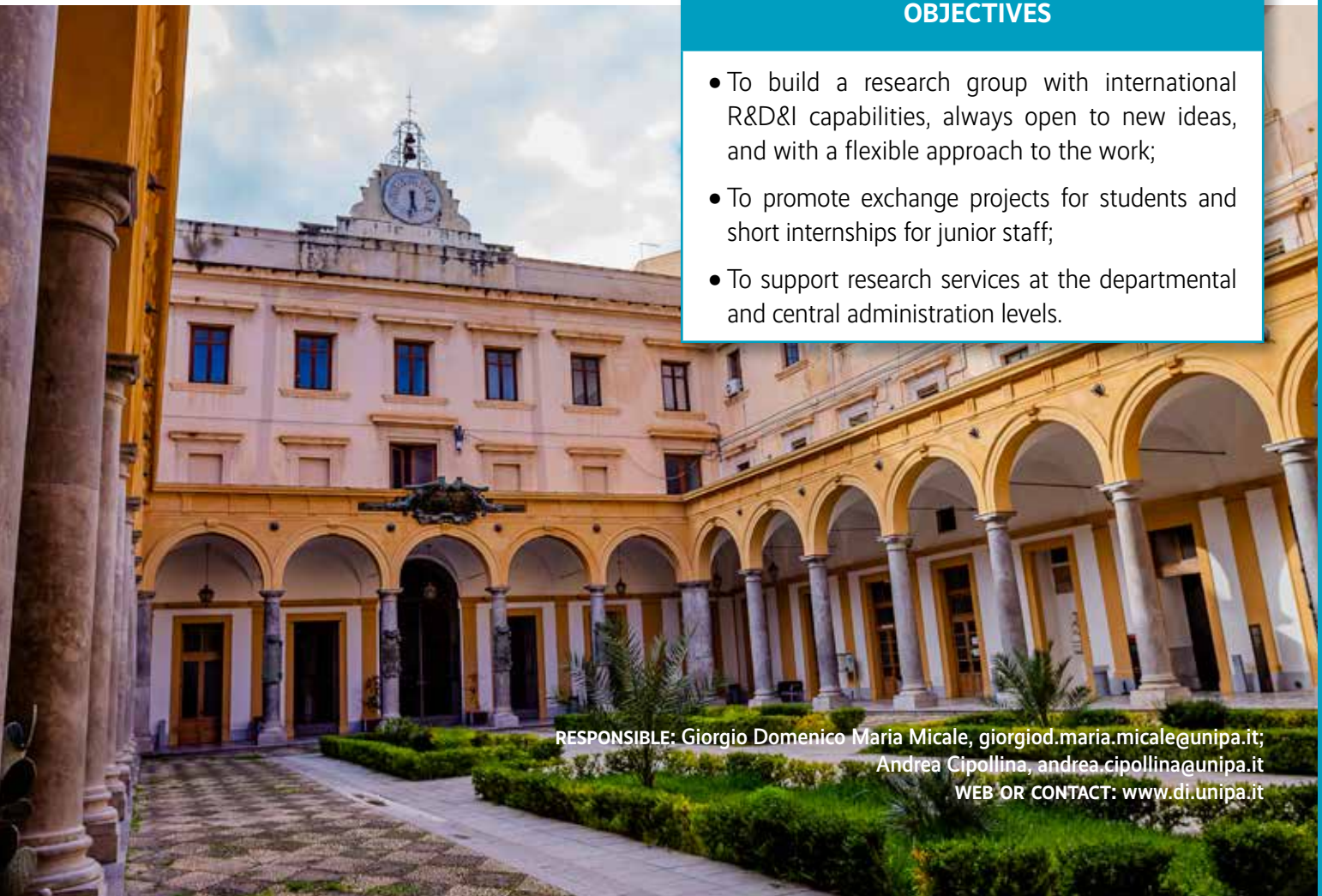
More than 10 EU-funded projects as partner (among them: RED Heat-to-Power, REvivED water, ReWaCEM, ZERO BRINE, BAoBaB, WATER-MINING, REWAISE) and 1 EU-H2020 project (SEArcularMINE) coordinated by UNIPA.

REPRODUCTIBILITY

The method developed by the team can be seen as a transferable list of good practices for boosting the involvement of research teams within EU cooperative research projects.

OBJECTIVES

- To build a research group with international R&D&I capabilities, always open to new ideas, and with a flexible approach to the work;
- To promote exchange projects for students and short internships for junior staff;
- To support research services at the departmental and central administration levels.



RESPONSIBLE: Giorgio Domenico Maria Micale, giorgiod.maria.micale@unipa.it;
Andrea Cipollina, andrea.cipollina@unipa.it
WEB OR CONTACT: www.di.unipa.it

CASTES. Establish and develop the Bachelor's Degree in Earth Sciences with an emphasis on Geology at the University of El Salvador

SUMMARY: CASTES is a project carried out by UNIPA together with the University of Chieti-Pescara, which are among the most relevant Italian specialized centres in geological studies, to transfer their know-how to the University of El Salvador (UES). As a result of the project, a Bachelor's Degree in Earth Sciences at UES will be established, funded by the Italian Agency for Development Cooperation.

AREA OF ACTION: Internationalization of science

OBJECTIVES

The main objective of CASTES is strengthening the skills and experiences of the Salvadorian human resources committed to research in Earth Sciences, specifically identified by the professors at the University of El Salvador (UES) and students attending the degree courses locally.

DESCRIPTION

Starting as an exchange programme of students and professors over a decade ago, prompting an awareness-raising process, CASTES is going beyond that point, equipping the partner areas in Central America with the right skills, capabilities and instruments needed to internally manage geological risks, reduce exposure to natural hazards and help the population be prepared to act with due precaution, in order to achieve this scope. UES professors and local technicians must be made autonomous in geological risk management and CASTES aims for this end. The more local people are trained and skilled in geological risk mitigation and management (thanks to hazard maps development and the ability to use software and models to predict hazardous geological phenomena), the more El Salvador will be able to effectively manage these events and prevent victims, damage to infrastructures and land degradation.

The Salvadorian people involved in CASTES will be trained by a mix of Italian and Central American high ranked scientists and, at the end of this phase, they will become new professors of different earth sciences disciplines, ready to train Salvadorian students and provide assistance to National Ministries and Local Agencies needing their expertise.

RESULTS

The fruitful decennial collaboration between Italy and El Salvador ensured a real mindset change, which was supported by the ability of the University of Palermo to excellently manage and make this change feasible. This is proven by the conscious awareness of the UES to become a first-line actor in the protection of the Salvadorian population and its land from geological disasters.

The first course in Geological Engineering at the University of El Salvador (UES) and a Master's degree in Geology for the training of teachers of the UES have already been launched.

REPRODUCTIBILITY

From CASTES' experience, a practical framework can be derived. It suggests a first collaboration period based on mobilities and staff exchange between the university lacking this expertise and the university that has it, in order to better evaluate the status quo of both parties. This period culminates in the choice of the university in need to internally acquire such competencies and strengthen them, thanks to initial support from the other universities more expert in these subjects. CASTES' experience enhanced and implemented a cooperation framework, which, starting from an initial collaboration consisting of student mobility and staff exchange between universities with a consolidated background and others with a lower level of expertise and lack of resources, assessed the state of the art and supported the partner university in Central America to internally acquire such competencies.

RESPONSIBLE: Christian Conoscenti, christian.conoscenti@unipa.it; Livan Fratin, livan.fratini@unipa.it
WEB OR CONTACT: https://castes.agronomia.ues.edu.sv/

DAPY. Drug Abuse Prevention for Youth

SUMMARY: National and regional applied research projects by UO sociologists working in the field of psychoactive substance use and users, combined with openness to networking in day-to-day academic practice, prompted a significant international project (DAPY – Drug Abuse Prevention for Youth) that yielded both applied and basic results, including high quality publications.

AREA OF ACTION: Internationalization of science (Human capital)

OBJECTIVES	DESCRIPTION
To make local, regional and national research relevant internationally. To exchange cross-cultural data to inform applied work, that is, design a prevention programme based on evidence. To use connections to excel and learn from more experienced researchers. To produce high quality, relevant scientific output when working on applied problems.	Sociologists at the UO engaged in a range of applied research projects regarding drug user cultures and youth risk behaviours (National Bureau of Drug Prevention grants, commissioned research by the regional self-government). A drug researcher from Turkey, acting as Erasmus+ exchange coordinator, noticed an elective course on drugs at the UO and started a collaboration. She visited the UO for qualitative analysis training and did a study afterwards. Next, she invited the UO to join an Erasmus+ Strategic Partnership project on drug prevention for youth with Oslo University and a Portuguese youth NGO. The project resulted in further fieldwork in Turkey and Poland, a joint programme for Turkish youth, but also in collaborative papers and a Special Issue of one of the leading journals in the field.

RESULTS	REPRODUCTIBILITY
Intellectual results of the Strategic Partnership project include a drug prevention programme for Turkish youth, an academic paper based on the research conducted while developing the course and a special issue in the journal Drugs: Education, Prevention and Policy. There were 32 papers submitted and 12 made it to the reviews. The issue, entitled "Cannabis Cultures and Cannabis Markets in Global Perspective," is due to be published in 2022. Several conference papers presented at the European Sociological Association annual conference and the European Society for Social Drug Research were developed, and seminars were organized (e.g., Polish Sociological Association seminar with a Norwegian colleague, Criminology Seminar at State University of Applied Sciences in Piła, by Polish colleagues).	A long-term investment in professional relationships and the use of Erasmus+ opportunities resulted in an invitation to participate in a more significant project that was used with an open mindset and the correct partners to make national research relevant internationally.

RESPONSIBLE: Michał Wanke, michal.wanke@uni.opole.pl

Digital networks, education, and social inclusion: research at the service of building active and responsible citizenship

SUMMARY: The research team led by prof. Gianna Cappello is involved in projects in the fields of Social Sciences and the Humanities (SSH) focused on building active and responsible citizenship. To improve their impacts, research projects always combine the theoretical dimension with the applicative one.

AREA OF ACTION: Internationalization of science

DESCRIPTION

In the research projects led by Gianna Cappello's team the theoretical dimension is always combined with the applicative one, developing an action research framework through which, on the one hand, empirical evidence is collected "in the field" so as to test and further enrich the conceptual apparatus starting point and, on the other hand, a network of alliances with stakeholders and beneficiaries at local, national and international levels (local authorities, civil society organizations, school networks, cultural institutions, etc.) is forged. Thanks to this research-action framework, they become fully qualified co-researchers (and not mere "experimental subjects"), thus consolidating the partnership for possible future projects.

This approach has been successfully tested in several EU funded projects:

- SMOOTH-Educational Common Spaces. Passing through enclosures and reversing inequalities (Programme Horizon 2020 - Call: H2020-SC6-TRANSFORMATIONS-2018-2019-2020). The project, started in 2021, intends to introduce the emergent paradigm of the "commons" as an alternative value proposition and action system in the field of education for children and young people. Various case studies will be conducted at educational premises to reverse the existing inequalities and achieve an active social inclusion for vulnerable children and youth.
- eMerge. e-Media Education about Representations and Gender (Programme Erasmus+, Key Action 2). The project aims to empower teachers' skills in media literacy to deconstruct with students the gender representations and stereotypes rooted in their media practices and in pop cultures.
- COMMIT-COMMunicatIon campaigns against exTremism and radicalization. (Programme: ISFP, DG/Agency: HOME-Call: ISFP-2018-AG-CT-CSEP). The project aims to prevent and dissuade vulnerable young people (13-25) of 4 partner countries from extremism, radicalism and terrorism, providing them with relevant skills to co-create counter-narratives challenging extremist online propaganda as well as alternative narratives promoting democratic values, tolerance and cooperation.

RESULTS

This research team proved to be greatly adept at catching the funding opportunities coming from different EU sources to support research activities with high interdisciplinary potential and experienced a significant success rate in the SSH domain, traditionally underrepresented in projects funded under the R&D framework programmes.

REPRODUCTIBILITY

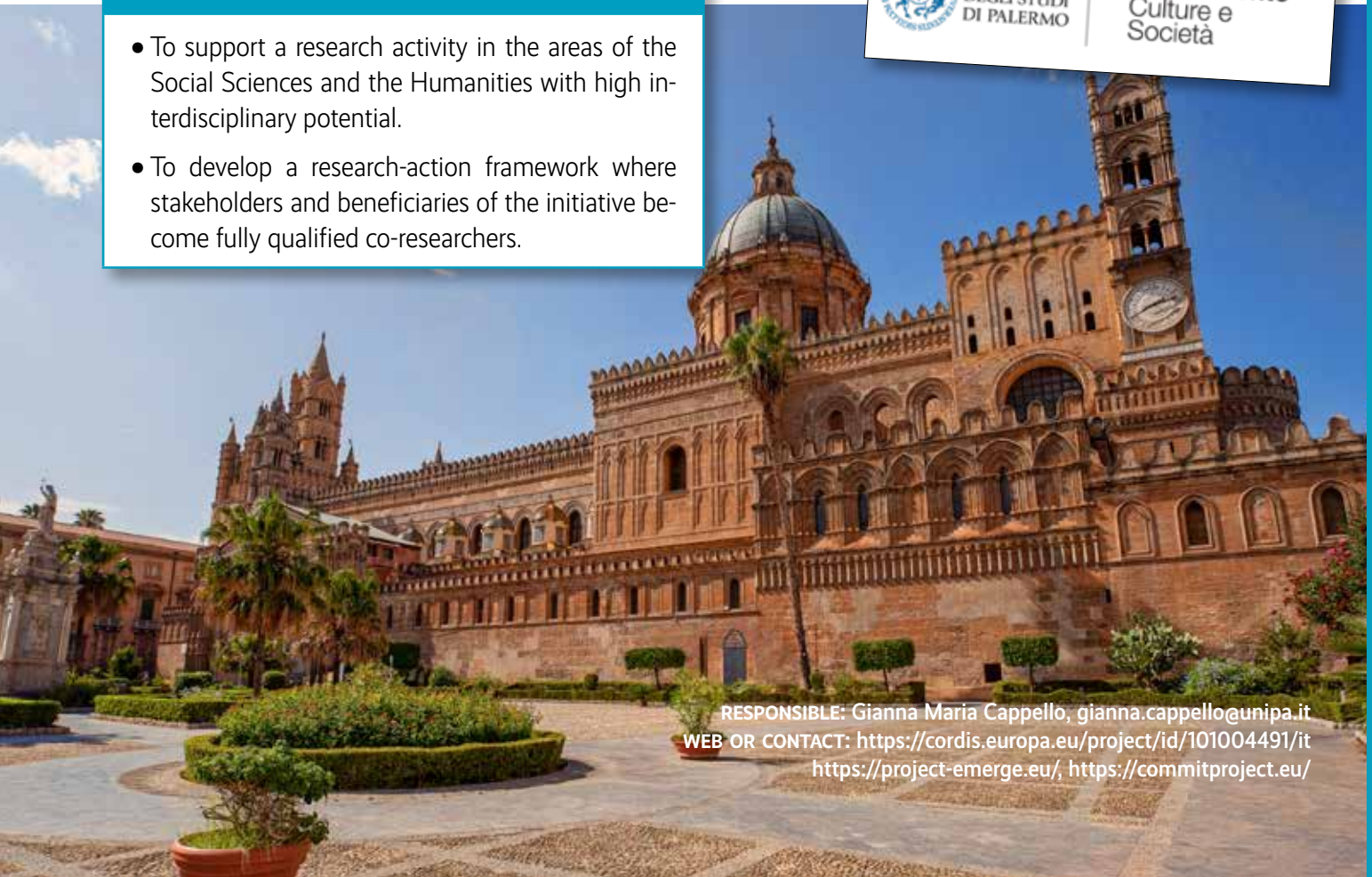
The team's modus operandi can be considered an academic research model inserted organically in the broader context of the "educating community" in which research-action processes intrinsically connected to the territory with a view to welfare and community governance, generative and symmetrical are activated.

OBJECTIVES

- To support a research activity in the areas of the Social Sciences and the Humanities with high interdisciplinary potential.
- To develop a research-action framework where stakeholders and beneficiaries of the initiative become fully qualified co-researchers.

UNIVERSITÀ DEGLI STUDI DI PALERMO

Dipartimento Culture e Società



RESPONSIBLE: Gianna Maria Cappello, gianna.cappello@unipa.it
WEB OR CONTACT: https://cordis.europa.eu/project/id/101004491/it
https://project-emerge.eu/, https://commitproject.eu/

End-to-end European project management support

SUMMARY: The International Research, Development and Innovation Unit of the Innovation & Transfer Service, as a professional dedicated support structure for the promotion and management of European and international research programmes, provides end-to-end project management support to researchers willing to participate in European research programmes.

AREA OF ACTION: Internationalization of Research

OBJECTIVES

To improve the European research funding of the University of Valencia, the International R&D&I Unit puts at all researchers' disposal a large variety of management support activities covering the whole "grant lifecycle," from the initial phase (where to find the European financing opportunities for "my research," how to submit a proposal, etc.) to the implementation phase (managing and monitoring the project funds) and final phase (reporting on how funding was spent). Each phase of the grant lifecycle has its own set of specific requirements and involves different kinds of professional management skills that are offered by the staff working at the International R&D&I Unit.

DESCRIPTION

The support provided comprises a variety of tasks that can be classified as pre-award and post-award activities:

- Pre-award activities encompass a wide variety of promotion activities ranging from collective and personalised targeted dissemination regarding calls, events, funding opportunities, etc.; professional advice to research groups in order to set up their funding strategies and working with them on grant applications (proposal writing, budgeting, impact and IPR revision, proof reading, search for partners, etc.); stimulation of participation through the organization of tailor-made training courses in developing EU R&I proposals; promotion of interdisciplinary collaboration of research groups working in different fields in order to submit common EU proposals.
- Post-award activities: After the proposal approval, the Unit offers technical support assisting during the negotiation phase and contract signing (Consortium Agreement and Grant Agreement preparation) and administrative and financial support for the reporting and monitoring of the project till the end of the grant lifecycle.

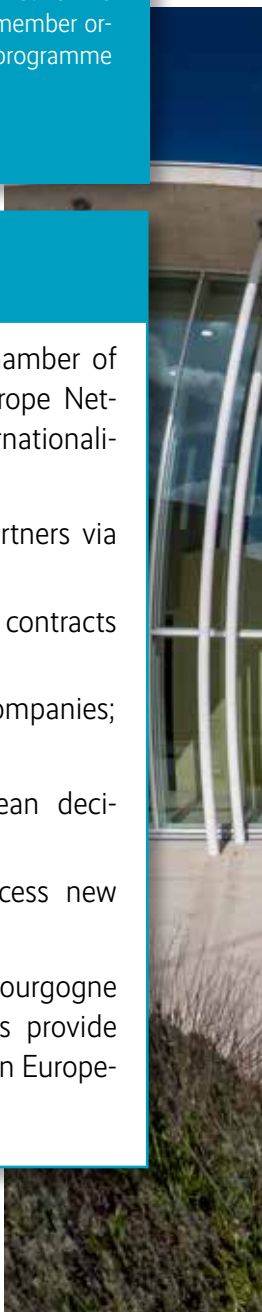
RESULTS	REPRODUCTIBILITY
Results in the EU Framework Programme with more than 100 projects financed during H2020 and more than 50M€ total funding. Additionally, for the same period (2014-2020), in EU programmes other than H2020 (INTERREG, LIFE, COST, ERA-NETs, CEF, REC, JUSTICE, AMIF, etc.) UVEG has signed more than 120 projects receiving more than 11M€.	The working processes can be scaled up in other similar institutions.

WEB OR CONTACT: https://www.uv.es/uvweb/servicio-investigacion/es/presentacion-servicios/servicio-transferencia-innovacion/presentacion-del-servicio-1286207776293.html

Enterprise Europe Network Bourgogne Franche-Comté

SUMMARY: Enterprise Europe Network is in close contact with the region's companies and supports them in their development, particularly in terms of access to the main European funding dedicated to them. Created in 2008, the network is co-financed by the European Commission and the member organizations, within the framework of the COSME programme for the competitiveness of enterprises and SMEs.

AREA OF ACTION: Internationalization of science



OBJECTIVES

The objectives of Enterprise Europe Network are 1) to help SMEs to continue their growth by offering European and international added value to their projects and 2) to support SMEs to internationalize.

A representative of the University of Burgundy (UB) regularly organizes together with the Chamber of Commerce and Enterprise Europe Network (CCI-EEN) thematic information days on European programmes that bring together researchers and companies in Burgundy Franche-Comté. This UB representative also plays a major role in this network: when the CCI-EEN receives partnership offers from European companies looking for partners to set up a European project, they communicate these offers to the representative at the University, who distributes them to the laboratories likely to be interested.

DESCRIPTION

In the Bourgogne Franche-Comté region, the Chamber of Commerce works closely with the Enterprise Europe Network to assist the SMEs of the region in their internationalization. Their actions include:

- to find commercial, technological, and R&D partners via business opportunities and BtoB conventions
- to advise on European legislation, international contracts and intellectual property;
- to accompany the innovation management of companies;
- to make known the concerns of SMEs;
- to enable them to participate in the European decision-making process; and
- to help ambitious SMEs to innovate and access new markets.

In eastern France, and more specifically in the Bourgogne Franche-Comté region, approximately 20 experts provide daily support to companies in their development on European markets and their innovation projects.

RESULTS

The network combines international technological and business expertise with local economic knowledge to help SMEs develop their innovations towards new markets. In the 10 years between 2008 and 2018, the French network welcomed nearly 145,000 SMEs at information meetings and other technical workshops, supported more than 37,000 companies with regulations, different types of financing and alignment with European standards, and accompanied more than 19,000 companies into successful meetings at business shows/events.

REPRODUCTIBILITY

This Enterprise Europe Network is a good example and good practice to enhance, encourage and support SMEs to internationalize their innovations.

RESPONSIBLE: Raphaël Bretin, Raphael.Bretin@u-bourgogne.fr
WEB OR CONTACT: https://estdefrance.een-france.fr/enterprise-europe-network-est-de-france

European Centre of Palaeontology

SUMMARY: The Opole Region, as well as the nearby town of Krasiejów, is relatively rich in mineral deposits and, in the local quarries, UO scientists have found many specimens of palaeobiological and palaeontological value. To study the finds and to explore, date and describe them, the University partnered with various local entities to found the European Centre of Palaeontology. Since 2016 the Centre has initiated international research projects, disseminated research through international publications and conferences, popularized palaeontology through events, summer schools and festivals, and offered a study programme aimed at international students and PhD candidates.

AREA OF ACTION: Internationalization of science

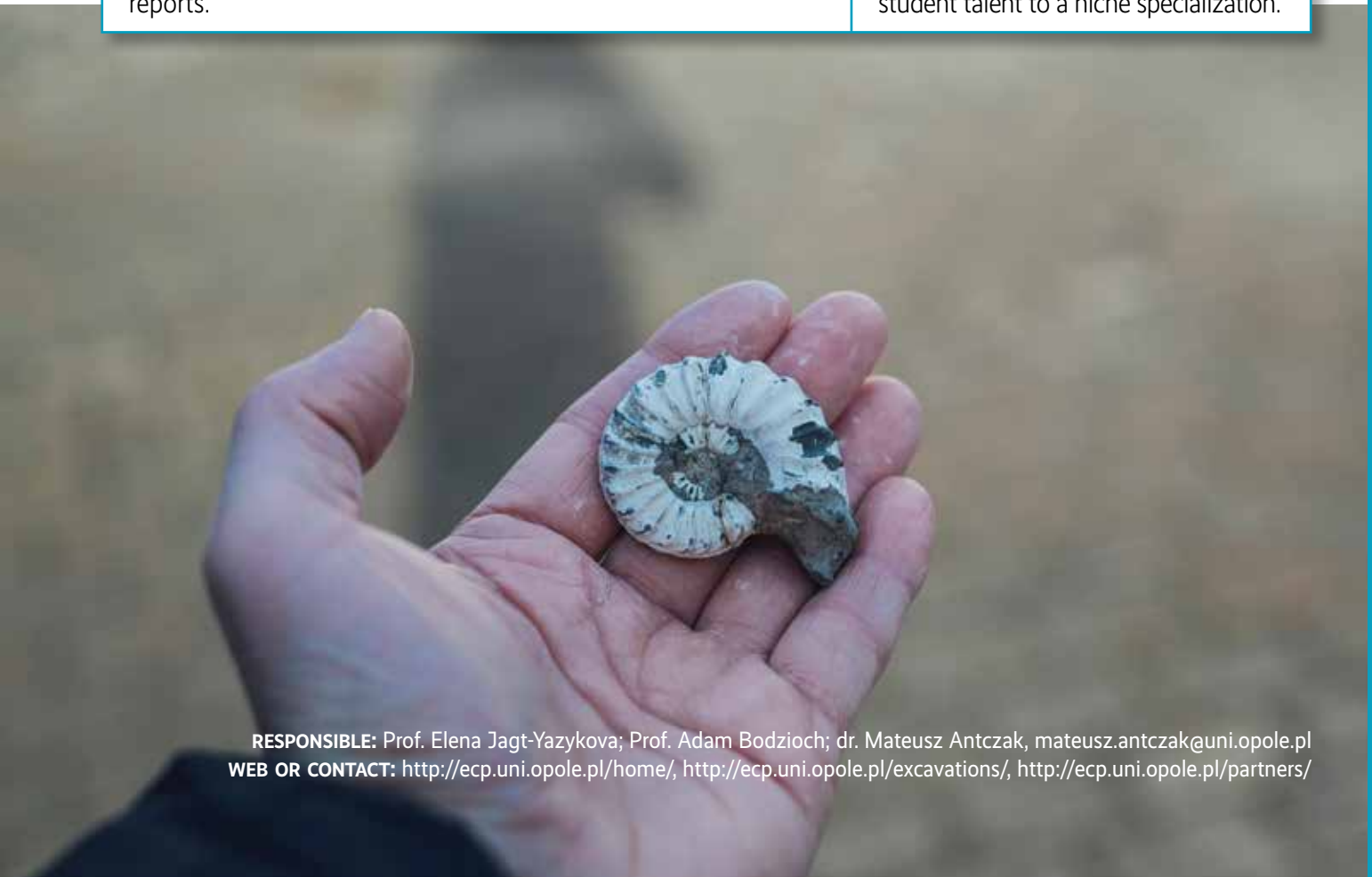
OBJECTIVES	DESCRIPTION
The European Centre of Palaeontology is an official research outpost of the Department of Palaeobiology of UO's Faculty of Natural Sciences and Technology. It is responsible for the Krasiejów exploration site and other local sites, as well as being home to the Cretaceous Fossils Collection and the Triassic Fossils Collection (of which some specimens are also available in the Museum of the University of Opole). It is also the principal site for students of the UO's international study programme in Palaeobiology to conduct high-quality research.	The Centre has established close collaboration with, among others, Belgian, Portuguese, Russian, German, Dutch and American universities and associations. Researchers organize study visits, summer school for students and PhD candidates, and field trips for hobbyists from all around the world, including FORTHEM short-term mobilities. The Opole collections have been catalogued, digitalized, and made available to international communities while publications have been authored to promote them. "Bringing Palaeontology to People" (2017) and "International Meeting of Early-stage Researchers in Palaeontology" (2019) were only some of the recent events. The Centre cooperates with local authorities in the region and municipality to aid in the promotion to international tourists (e.g., "When this city was a sea: The geological history of Opole region" popular science publication), with the operator of the Krasiejów Dinosaur Theme Park, with the Wild Prehistory portal and Wild Areas Network. It also sends researchers abroad to enhance international collaboration on palaeontological and palaeobiological explorations (in Russia) and on new museum exhibitions (in Portugal).

RESULTS

Over the course of the five years of its ECP-affiliated operation, researchers have co-authored publications with partners from at least 20 foreign institutions. They have secured funding from three foreign agencies. They have conducted study visits in 9 museums and research centres abroad and hosted numerous international guests and PhD candidates. Every year the ECP summer school (Palaeontologische Field School) attracts between 11 and 20 participants. So far, 21 students have completed their MA projects and went on to publish over 10 co-authored research reports.

REPRODUCTIBILITY

The Centre is an exemplary case of research internationalization that enabled an obscure find and a local research project to be globalized through networking and collaboration and to exert impact on an expanding range of partner institutions in research, education and popularization. It has also been exceedingly successful in attracting world-level student talent to a niche specialization.



RESPONSIBLE: Prof. Elena Jagt-Yazykova; Prof. Adam Bodzioch; dr. Mateusz Antczak, mateusz.antczak@uni.opole.pl
WEB OR CONTACT: http://ecp.uni.opole.pl/home/, http://ecp.uni.opole.pl/excavations/, http://ecp.uni.opole.pl/partners/

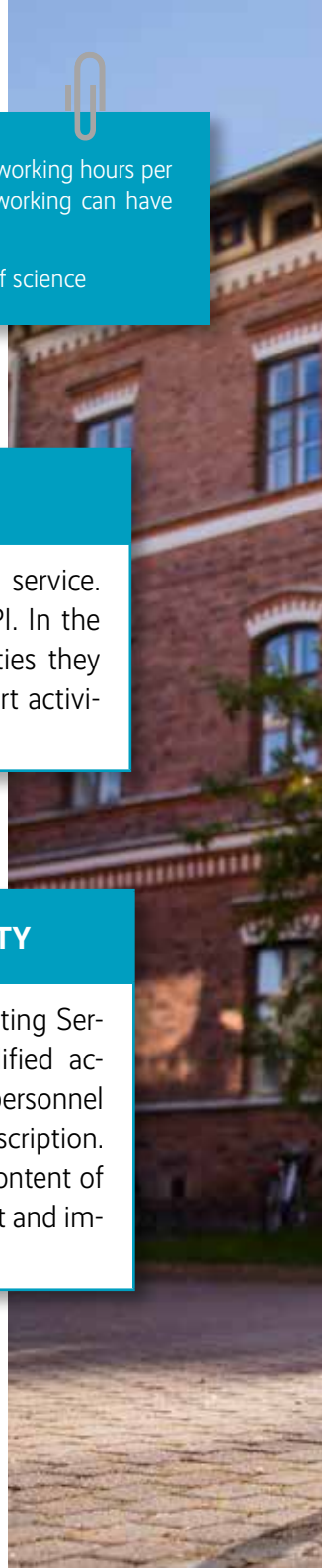
Grant Writing Service Pilot

SUMMARY: GWS is offered for a max. 30 working hours per proposal to support proposal writing. Co-working can have various forms.

AREA OF ACTION: Internationalization of science

OBJECTIVES	DESCRIPTION
Provide project preparation tools and support to improve the success rate of consortium proposals.	Each PI proposal is offered 30 hours of Grant Writing service. The service is designed and timed together with the PI. In the first meeting, PI selects from a list the support activities they find the most suitable, and the schedule for the support activities and proposal preparation is set

RESULTS	REPRODUCTIBILITY
Improved awareness of the services available. Tailored service to meet the needs of the PI and consortium. Better scheduling of the proposal preparation and therefore improved time management of both researchers and administrative personnel involved. Results can be measured e.g., quantified based on success rate.	The content that Grant Writing Service includes can be modified according to administrative personnel skills, resources and job description. This approach makes the content of the service more transparent and improves time allocation.



RESPONSIBLE: Leena Sivula, Research, and Innovation Services
WEB OR CONTACT: Research and Innovation Services is piloting new Grant Writing Service — Jyväskylän yliopisto (jyu.fi)

Gutenberg Research College (GRC)

SUMMARY: The Gutenberg Research College (GRC), established in 2007, serves as an expert body to promote cutting-edge research at Johannes Gutenberg University Mainz (JGU). Its executive committee is made up of outstanding researchers from JGU and its partner research institutions.

AREA OF ACTION: Internationalization of Research

OBJECTIVES	DESCRIPTION
The Gutenberg Research College (GRC) intends to raise the academic profile of Johannes Gutenberg University. Its main objectives are to: • support excellent research and arts at JGU, • advise the Executive University Board regarding the development of the research profile of JGU, and • promote and support interdisciplinary research at JGU, particularly by organizing networking opportunities for GRC fellows from different fields of research. Internationalization of research is not explicitly named as one of GRC's core tasks, but the support of excellence inherently comprises a global perspective on the scientific community and the support of both researchers from abroad and the international collaboration of JGU's researchers.	The GRC has two main functions. It advises the Executive University Board and the Senate in strategic matters concerning research, and it furthers individual excellence by awarding fellowships to excellent researchers and artists. GRC fellows may be exempted from their teaching and administrative duties, giving them more time for research and providing better research conditions. This support helps JGU to attract researchers from abroad and to compete with foreign institutions that may be able to offer a higher budget and fewer teaching and administrative obligations in comparison to an average German professorship. Moreover, the GRC supports fellowship arrangements where researchers and artists from abroad collaborate intensely with their hosts at JGU, thus strengthening transnational cooperation. Essential to the support activities is the entanglement of the funding of individual researchers with strategic considerations regarding JGU's research profile and the long-term development of the supported research fields at JGU. Furthermore, the GRC annually awards the Gutenberg Research Award to outstanding international researchers in order to foster international exchange and visibility of JGU.

RESULTS

Since 2007, 26 fellows (more than one third of all GRC fellows) have come from abroad. Since 2012, 11 outstanding researchers from several disciplines have come to Mainz to celebrate the award and to engage in exchange with their hosts at JGU.

REPRODUCTIBILITY

The combination of the recruitment of personnel with strategic long-term considerations may be used to sharpen the research profile and to support interdisciplinary and international collaborations, especially if the university is able to offer a specific budget or other incentives, such as temporary exemptions from obligations, or to obtain external grants for these measures.

The bestowal of research awards to outstanding researchers may strengthen the international visibility of a university and the transnational collaborations of its researchers.

WEB OR CONTACT: https://www.grc.uni-mainz.de/office-of-the-grc/

Internal University Research Funding (Stufe I)

SUMMARY: Johannes Gutenberg University Mainz (JGU) funds a large range of internal research projects and initiatives. Amongst others, these include activities to attract foreign scholars and the organization and visits of international scientific events

AREA OF ACTION: Internationalization of Research

OBJECTIVES

The central aims of basic funding taken from university budgetary resources are to:

- strengthen key profile areas and identify new future-oriented research fields at JGU;
- increase third-party funding;
- enhance the appeal of the university for young academic researchers;
- increase the percentage of female academic staff;
- improve international networking and the visibility of JGU.

DESCRIPTION

Most relevant for the FORTHEM network is that the concept of internal university research funding includes, amongst others, specific measures for promoting international scientific exchange and visibility. These measures particularly aim at raising the number of foreign visiting scholars. Special attention is paid to attracting Humboldt prize winners and scholarship holders. Furthermore, resources are provided for supporting the organization and visits of international scientific events.

RESULTS

In the context of internationalization, each year Stufe I financially supports the organization of around 30 international scientific events (conferences, workshops) in Mainz and around 250 trips to such events abroad. JGU hosted 14 Humboldt scholarship holders between 2018 and 2020.

REPRODUCTIBILITY

Given the financial resources, the promotion of international scientific exchange (incoming and outgoing) and visibility is possible everywhere.

WEB OR CONTACT: https://research.uni-mainz.de/contact/internal-university-research-funding/

International Staff Guide

SUMMARY: JYU's International Staff Services (ISS) assists international staff with official paperwork and arrangements necessary for their move: information on social services in Finland, settling into their local community in Jyväskylä, as well as on-going guidance for them and their families during their stay in Finland. ISS provides this information on the JYU external website, with a view toward preparing people for their arrival.

AREA OF ACTION: Human Capital

OBJECTIVES	DESCRIPTION
The International Staff Guide is designed as both a pre-information package for those moving to and from Finland, as well as an on-going reference guide for current international staff.	The Universities Act changed in Finland in 2010. Back then, the criteria for university funding also changed and, as a result, Finnish universities were in need of developing their support services for international recruitment. At the end of 2011, the Finnish Academic Mobility Network (FAMO) was established for experts in international human resource management at Finnish universities and VTT. The network considered ways to support international recruitment at Finnish universities and visited the University of Copenhagen in Denmark and Lund University in Sweden in 2012. Especially in Denmark, the universities already had highly developed support services for international recruitment, and several universities in Finland, including Jyväskylä, took inspiration when developing their International Staff Guide from there. The International Staff Guide was published at the University of Jyväskylä in 2013 and updated in 2021

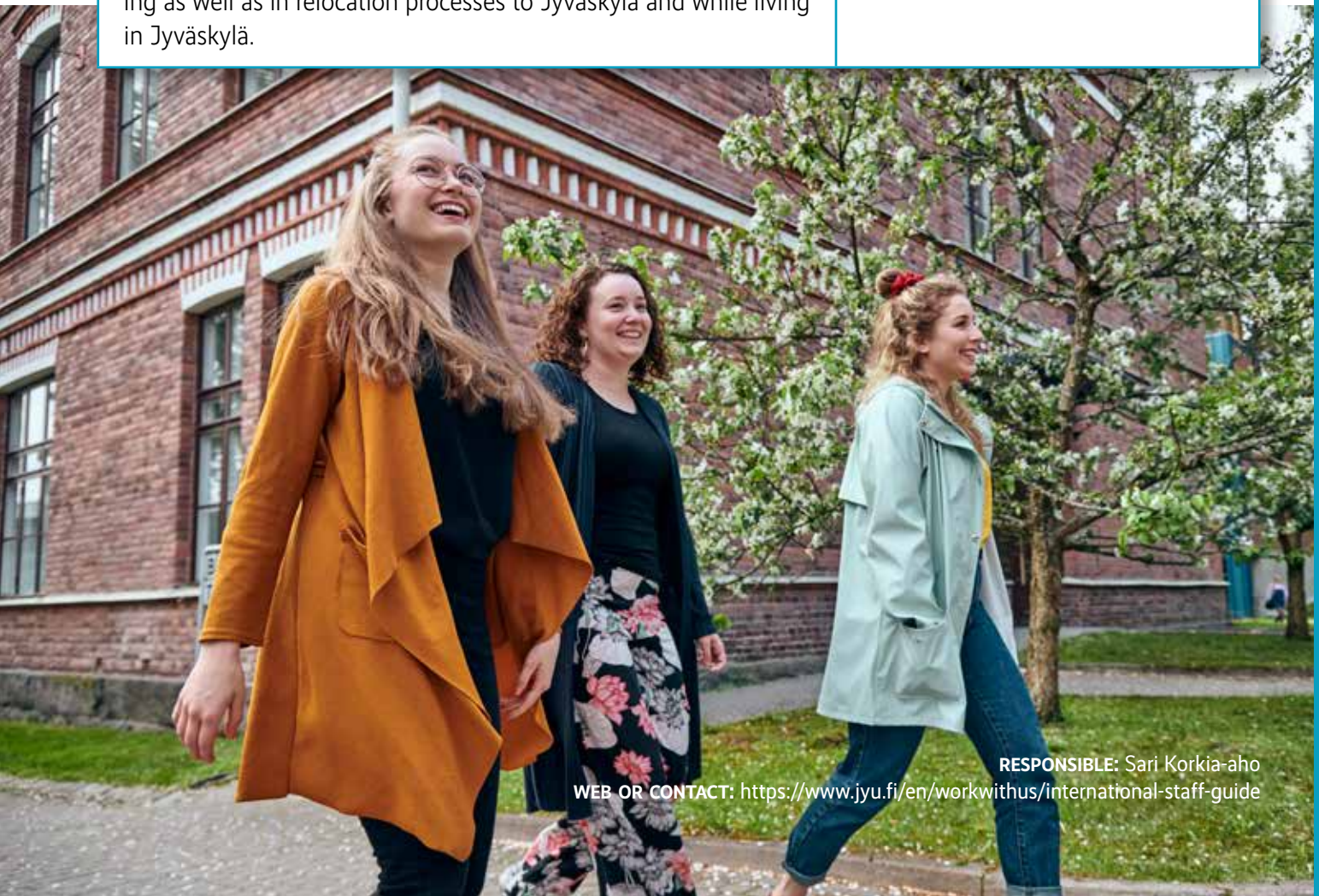
RESULTS

The International Staff Guide has received extremely positive feedback from the university international staff and supervisors. We have also received positive feedback from other companies and service providers in Jyväskylä.

The International Staff Guide supports the work of the University International Staff Services – team and most importantly creates a platform that can be used in the University's International marketing as well as in relocation processes to Jyväskylä and while living in Jyväskylä.

REPRODUCTIBILITY

This is a good practice to support international staff, as we aim to increase the mobility between partner universities in European University Networks.



RESPONSIBLE: Sari Korkia-aho
WEB OR CONTACT: https://www.jyu.fi/en/workwithus/international-staff-guide

JYU ERC Support Process

SUMMARY: JYU's ERC Support Process has features from which the ERC applicants can choose the services that are suitable for them:

- One-month ERC application preparation leave;
- Peer support events;
- Mentoring support for the ERC applicant;
- Workshop for writing successful ERC applications;
- Pre-Review of draft applications by experienced consultant;
- Workshop on preparing the ethics self-assessment, help for budgeting;
- Language review for either the B1 or B2;
- Overall help application and comments/pre-review from the support staff in Research and Innovation Services.

Additionally, HI Letter and project announcement in Converis are mandatory for all applicants

AREA OF ACTION: Internationalization of science

OBJECTIVES	DESCRIPTION
Support researchers to receive more ERC Funding.	The support service was designed in 2015 by the Research and Innovation Services and the Research Council based on 62 answers received from researchers to a questionnaire. The service was then tailored to match these researchers' needs and available resources. Since 2015 there have been 2-3 specific support processes annually.

RESULTS	REPRODUCTIBILITY
JYU has received twice as many ERC grants under H2020 as compared to FP7. The support process receives lots of positive feedback in different questionnaires.	It is important to tailor the services based on the actual needs of the researchers. To take the researcher feedback seriously into account in the service design is highly relevant and important for all the universities.

RESPONSIBLE: Research and Innovation Services, University of Jyväskylä
WEB OR CONTACT: ris@jyu.fi

PostDoc Latvia

SUMMARY: The post-doctoral research support project PostDoc Latvia is an important financial instrument of the European Regional Development Fund focusing on the development of research capacity and careers of post-doctoral scientists.

AREA OF ACTION: Science internationalisation

OBJECTIVES

The organisation unites graduates of the University of Latvia (LU) who have gained studies at the University to:

- Create and develop an environment for personal development and education, through exchange of information and experience, and personal contacts.
- Enrich LU with graduates' knowledge, experience, and resources.
- Promote the development of the LU and promote its progress towards excellence, increasing the value of the university diploma and promoting the national growth.

DESCRIPTION

A Latvian or foreign young scientist who acquired a doctorate not earlier than 10 years before the deadline will be employed in full-time research for a maximum of 3 years. Support is intended for research into the achievement of the objectives of the Smart Specialisation Strategy, the implementation of growth priorities or the development of areas of specialisation. The maximum amount of one research application shall be EUR 133 806, providing aid for:

- Basic or industrial research.
- The preparation of other research or innovation projects.
- The management and review of the work of a bachelor, master, or doctorate.
- Knowledge and technology transfer.
- Technology transfer and the protection of technology rights.
- International mobility.
- The development of post-doctoral competences.

RESULTS

More than 104 students received grants.

REPRODUCTIBILITY

Depends on the launch of tenders for the programme.

RESPONSIBLE: Emilia Zarina, elmira.zarina@lu.lv
WEB OR CONTACT: zd@lu.lv

Promotion of European Research Council (ERCs) programme for young researchers

SUMMARY: Young scientists must focus on developing their careers and often the effort they need to put into this discourages them from looking for European funding opportunities, such as participation in the ERC programme (Excellence Science -Pillar I of Horizon Europe). The International Research, Development and Innovation Unit of the Innovation & Transfer Service provides specific support to early-career researchers in applying for ERC proposals.

AREA OF ACTION: Internationalization of Research

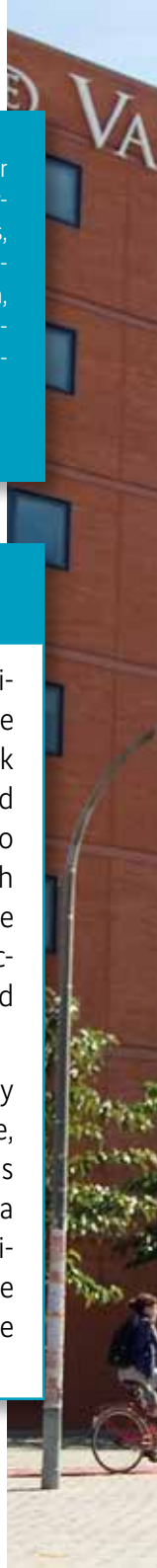
OBJECTIVES

Young investigators are still learning an onslaught of professional skills — budgeting, grant-writing, managing personnel. They are less likely than their senior colleagues to have support staff and more likely to still have family responsibilities such as small children. They have less time than ever to do research or ponder big ideas. Therefore, bearing in mind that early-career researchers need fewer burdens and more support to commit themselves to participating in European funding applications, the International R&D&I Unit puts the focus on this sector of the research community providing specific support for applying for ERC grants in the early stages of their research and facilitating a qualitative leap in their international research careers.

DESCRIPTION

The International R&D&I Unit, within the research community of the Universitat de València, seeks out and selects those young researchers with a relatively excellent research track record and keeps them informed about the requirements and conditions for applying for ERC grants, encouraging them to apply. During the application phase, it provides them with information and specific training and advises them in the preparation of their applications, making the necessary recommendations to improve the quality of the proposal and increasing the chances of future success.

The target sector is "young researchers" who have already been awarded for their excellent curriculum. For example, it targets those awarded with national or regional awards ("Ramon y Cajal" grants, "CIDEGENT" grants) who enjoy a stable position for a maximum of 5 years at the University and also those with an extraordinary award to recognise their research activity, such as the extraordinary Doctorate awards.



RESULTS	REPRODUCTIBILITY
Results in the EU Framework Programme include 16 ERC projects financed during H2020.	The working processes can be scaled up in other similar institutions.

WEB OR CONTACT: https://www.uv.es/uvweb/servicio-investigacion/es/presentacion-servicios/servicio-transferencia-innovacion/presentacion-del-servicio-1286207776293.html

Proposal support for Marie Skłodowska-Curie actions and ERC applicants

SUMMARY: The promotion of young researchers is one of the main objectives of European research policy. The topic also became more and more virulent on the national level in Germany during the last decade, e.g., in the discussions about tenure-track procedures, fixed-term contracts and the formal and social integration of foreign students and researchers into the German academic system. To respond to this, the Johannes Gutenberg University Mainz (JGU) has explicitly placed the support of young researchers into the hands of one of its two vice-presidents. To significantly contribute to the university's efforts in this field, the EU-office at JGU has a special focus on supporting big joint research projects as well as activities like the Marie-Skłodowska-Curie (MSC) Doctoral Networks (former Innovative Training Networks) and Postdoctoral Fellowships (former Individual Fellowships) or ERC Starting Grant Initiatives.

AREA OF ACTION: Internationalization of Research

OBJECTIVES

- To increase the attractivity of JGU for young researchers from abroad to further develop their international career perspectives.
- To bridge talented Postdocs to JGU to enrich their research working groups with their expertise and to introduce them to the German academic and non-academic job markets.
- To facilitate, together with JGU International (the Welcome Centre and Human Resources Development), access to the German academic system and institutional practices and customs.
- To tailor training measures especially when it comes to transferrable skills in MSC Actions as customer oriented as possible.
- To increase JGU's success rate in the ERC Starting Grant and MSC funding schemes for young researchers over the years.
- To especially encourage Social Sciences and Humanities, to participate in these funding schemes and to coordinate, for example, MSC Doctoral Networks.
- To contribute to a rich and helpful welcoming culture at JGU.

DESCRIPTION

What are we doing to achieve these objectives? JGU increased their support staff at the end of the 7th Framework Programme for Research and Innovation (2008-2014) and thus boosted the EU-Office to conduct the following support measures:

- Proactive information and advice
  - ↳ Customer oriented information to young researchers in courses developed for the HE department (in-coming and out-going).
  - ↳ Organization of information events related to funding for postdocs (in-coming and out-going) or MSC Actions in general.
  - ↳ Intensive individual advice on EU funding lines, such as ERC Starting Grand or MSC Postdoctoral Fellowships and other comparable funding schemes provided by national funders.
- Providing intensive support during the application process including
  - ↳ Budget calculations and allocation to tasks and measures.
  - ↳ Feedback to proposals in manifold feedback loops, if necessary.
  - ↳ Provision of small text modules and annotated proposal templates especially for the MSC Postdoctoral fellowships.
  - ↳ Collection of the best practices from former applications as a pool of inspiring ideas for future applicants.
  - ↳ The matching of new applicants with successful previous applicants for peer advice.
- Retrospective measures and/or accompanying measures
  - ↳ Evaluation of assessments together with the applicants.
  - ↳ Identification of alternative options when projects are not funded.
  - ↳ Provision of written guidelines on project implementation and management at JGU for all MSCA and ERC projects and a general guide for EU project management in general.

↳ Advice on project management and the guiding of young researchers implementing their projects.

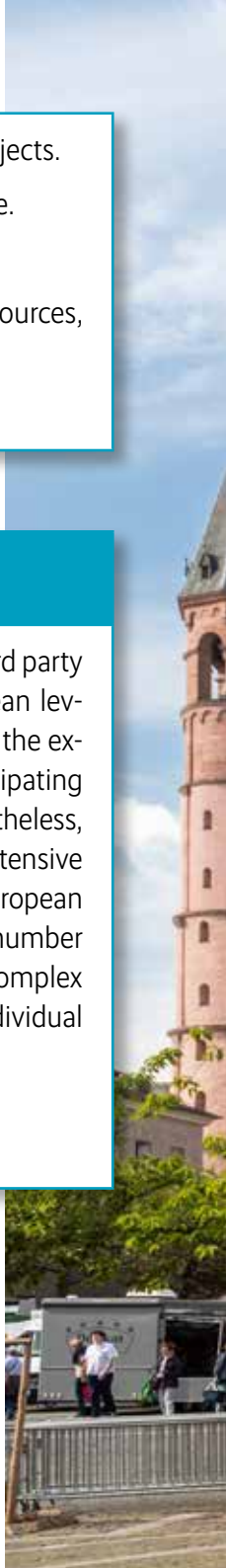
↳ Preparation of consortium agreements tailored to the needs of doctoral networks, for example.

↳ Close cooperation with decentralized administrative units to provide hand-on information.

↳ Acting as an interface for young researchers to other administrative units, such as human resources, human resources development, legal affairs, international office, finance office, etc.

↳ Acting as an interface to national contact points and other external support structures.

RESULTS	REPRODUCTIBILITY
• The number of staff members directly involved in the support of researchers seeking funding from EU programmes was increased significantly. • Barriers to apply for funding were reduced. • The welcome culture for young researchers at JGU was reinforced. • MSC Fellows acting as multipliers, communicators and ambassadors for the programmes inspired their workgroups and peers to engage in these programmes. • As the overarching result, the EU contribution obtained from MSC grants as well as the participation in MSC Actions were doubled from FP7 to Horizon 2020.	Being successful in obtaining third party funding on national and European levels of course depends mainly on the excellence of the researchers participating in the competitive calls. Nevertheless, good support structures and intensive advice is mandatory. In the European context, the requirements and number of funding opportunities are complex and cannot be overlooked by individual actors.



WEB OR CONTACT: Research Services at JGU, eu-office@uni-mainz.de

Reading Sessions on European winning proposals

SUMMARY: The R&D& Innovation Unit plans reading sessions to share the previous experience of selected winning proposals among those researchers willing to participate in future Horizon Europe calls under the Pilar I "Excellence Science" (European research Council-ERC and Marie S. Curie proposals-MSC), while maintaining all security and confidentiality safeguards.

AREA OF ACTION: Internationalization of Research

VNIVERSITAT DE VALÈNCIA

OBJECTIVES	DESCRIPTION
The objective of this best practice is to inspire future participants in new Horizon Europe proposals under the Pilar I "Excellence Science." By organizing these reading sessions, we are providing the opportunity to show how winning proposals are written, how practical doubts about preparation of the applications can be resolved, helping to increase the quality of applications and, in turn, ensuring the possibility of brilliant ideas to be awarded.	The International R&D&I Unit has taken the methodology of this practice from the reading sessions organized by the Spanish national agency for ERC applications and transfers this practice to the Marie Skłodowska-Curie (MSC) Actions as well. The first step is getting the agreement and authorisation from researchers who have winning proposals to allow these to be shown and displayed among future applicants who will be invited to participate in a reading session. There, they will be able to read, in a limited time, the winning proposals that will be distributed on paper and openly commented on. This is done after all participating researchers have signed a non-disclosure agreement with strict clauses to avoid any type of further dissemination of the proposals shown during the session.

RESULTS	REPRODUCTIBILITY
Results in the EU Framework Programme with 16 ERC projects, 13 ITN (MSC) projects and 16 IF (MSC) projects financed during H2020.	The working processes can be scaled up in other similar institutions.

WEB OR CONTACT: https://www.uv.es/uvweb/servicio-investigacion/es/presentacion-servicios/servicio-transferencia-innovacion/presentacion-del-servicio-1286207776293.html

Research Funding Communication

SUMMARY: Information and training with regard to Research Funding opportunities for researchers.

AREA OF ACTION: Internationalization of science

OBJECTIVES

To provide the best up-to-date information about different research funding opportunities available nationally and internationally for researchers' ideas.

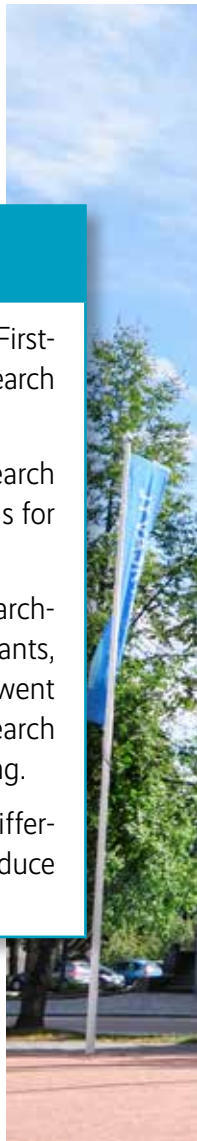
DESCRIPTION

The University of Jyväskylä has several ways to raise awareness of funding opportunities for researchers. Firstly, our web pages and Help Centre provide information on research funding. In addition, we publish a Research Funding and Innovation News newsletter monthly, which is delivered to all JYU personnel via email.

Secondly, Research Funding Calls is a web-based tool that helps a researcher to find a suitable research funding call by him/herself. With this tool, a researcher can find all main funders and their relevant calls for a JYU researcher and can filter the calls by career phase, fund usage or funder.

Thirdly, for many years now, we have arranged a Research Funding Roadshow where we contact researchers personally. In the early years, we had "a mobile research funding office" in front of the lunch restaurants, where we offered coffee and information about research funding opportunities. In the next phase, we went to knock on researchers' doors with a cup of coffee and asked if they wanted to have a chat about research funding opportunities. Recently, we have gathered virtually with researchers to discuss research funding.

Finally, we also arrange a lot of trainings and information sessions yearly on research funding calls of different funders. When a new professor starts to work at JYU, we contact him/her immediately and introduce our research funding services.

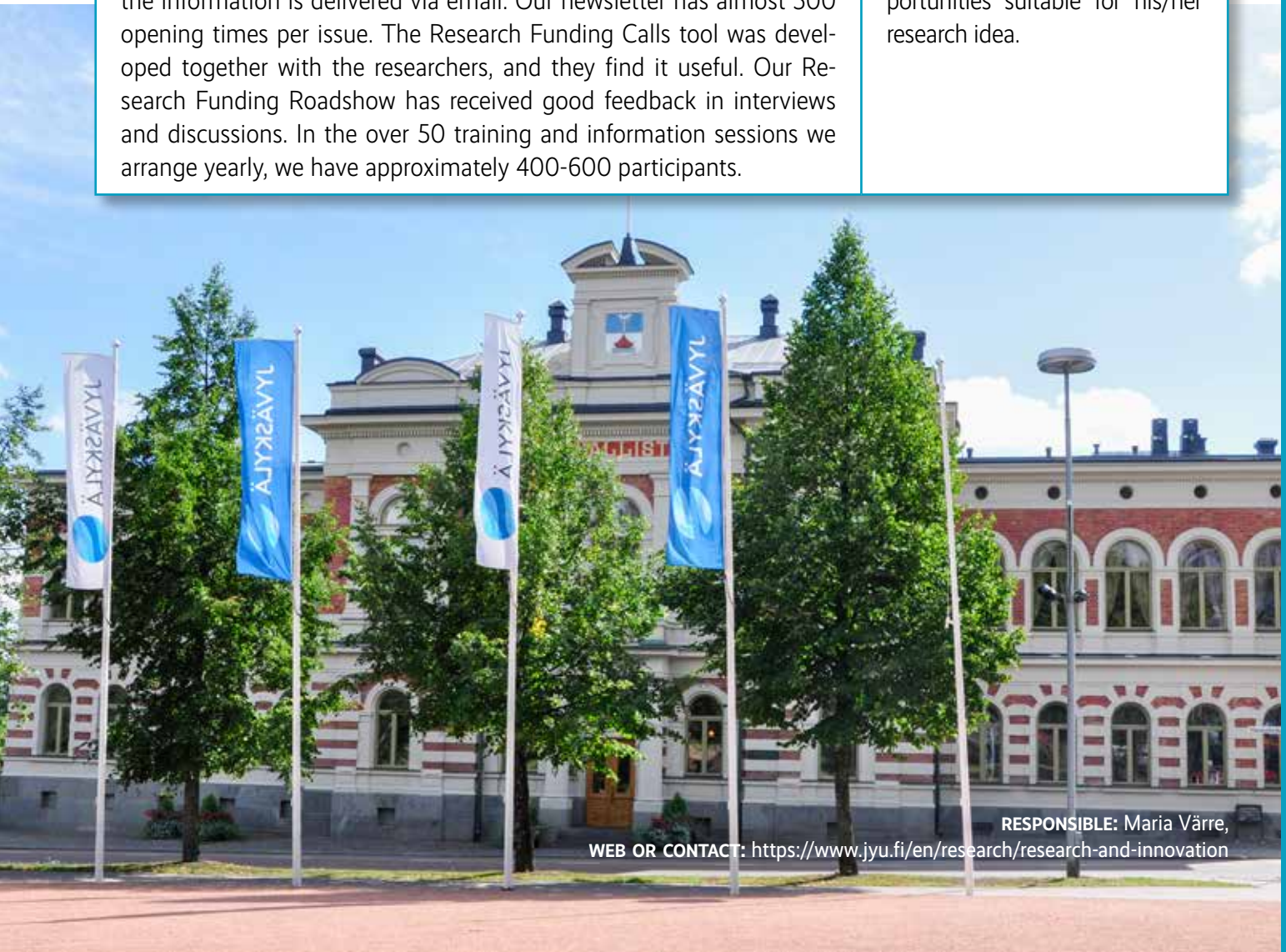


RESULTS

According to a recent evaluation, our webpage and Help Centre are highly appreciated among researchers. The study results also showed that instructions and guidelines are well written from a researcher's point of view. Our monthly newsletter is considered as a good source of information on research funding, and many researchers prefer that the information is delivered via email. Our newsletter has almost 500 opening times per issue. The Research Funding Calls tool was developed together with the researchers, and they find it useful. Our Research Funding Roadshow has received good feedback in interviews and discussions. In the over 50 training and information sessions we arrange yearly, we have approximately 400-600 participants.

REPRODUCTIBILITY

Research funding is highly competitive in every field of research internationally and therefore it is very important for a researcher to find all possible funding opportunities suitable for his/her research idea.



RESPONSIBLE: Maria Värre,
WEB OR CONTACT: https://www.jyu.fi/en/research/research-and-innovation

CO-CREATION GOOD PRACTICES

ARCA. Hackathons and other initiatives

SUMMARY: ARCA is a consortium for the application of research and the creation of innovative enterprises, which has been active since 2003 and counts on a partnership among the University of Palermo and the University Consortia of Agrigento, Trapani and Caltanissetta. In 2005, the Consortium started up the University Business Incubator to promote and assist the generation of innovative business initiatives. Among its initiatives, the hackathons gather junior IT experts to take up the challenges set by companies and design a solution working in teams within a defined time limit.

AREA OF ACTION: Co-creation

OBJECTIVES

- To support entrepreneurship, technological and social innovation through sensitization, and empowerment actions.
- To develop students' and researchers' entrepreneurial potential.
- To foster innovation processes in small- and medium-sized enterprises.
- To promote the Sicilian entrepreneurial ecosystem.

DESCRIPTION

ARCA incubator is located within the University of Palermo campus, covering a total area of about 1,500 square meters and is built around a system of common spaces (coworking areas, a kitchen, a lounge area, printing facilities), units for businesses, offices, staff and meeting rooms, training classrooms and technological laboratories. In a complementary way and integrated with the activities of the incubator, ARCA promotes industrial research and technological transfer programmes customised to the needs of small and medium-sized enterprises, networks and industrial districts.

ARCA is strongly committed to transnational cooperation programmes. For example, it carries out social innovation initiatives in collaboration with other local development actors. The technological areas in which ARCA operates are related to scientific production and specific expertise in the region: renewable energy and sustainable building, mechatronics, environmental monitoring, GIS systems and remote sensing, digital technologies, management and enhancement of cultural heritage, biotechnology and human health, technologies addressed to the marine environment and sea industry.

ARCA adopts an open innovation approach, with a shift of paradigm oriented to sharing knowledge and skills with the aim of making innovative technologies available to society, contributing to the determination of a strong social impact.

Three specific activities developed by ARCA should be underlined:

- "EasyRights Palermo Hackathon" (February 2021) brought together co-creation and Artificial Intelligence technologies to devise a solution meant to facilitate immigrants in understanding and accessing public services.
- "AI & ROBOTICS FOR CLIMATE CHANGE" (January 2020) aimed at stimulating young talents to propose robotic solutions and business ideas that could provide insights into the field of climate change.
- "#HacktheSun Marathon" (September 2016) encouraged IT experts, designers and software developers to submit new proposals for the optimization of solar plants.

RESULTS	REPRODUCTIBILITY
ARCA has supported more than 500 business ideas and has helped the creation of more than 70 successful business ventures. It hosts two acknowledged Living Labs, is a member of five networks (EEN, EBN, ENOLL, EIT Health, EIT Mobility) and has managed 18 EU-funded projects.	ARCA manages territorial innovation scenarios linked to the promotion of entrepreneurial culture, through an open innovation approach and thanks to its connections with local stakeholders. The Living Labs give impulse to ARCA daily practice in the field of co-design, awareness-raising, citizen engagement, testing and experimentation of innovative products and business models.

RESPONSIBLE: Vincenzo Nigrelli, vincenzo.nigrelli@unipa.it
WEB OR CONTACT: http://www.consorzioarca.it/index.php/en/

CheMatech company (originated from the UB lab ICMUB)

SUMMARY: Since 2005, CheMatech strongly collaborates with the Institute of Chemistry of the Université de Bourgogne (ICMUB) in the field of syntheses and application of macrocyclic chelating agents, fluorescent probes and bioconjugation technologies. Joint research programmes are ongoing, especially in the development of new synthetic tools for the synthesis of bifunctional chelating agents and multimodal probes.

AREA OF ACTION: Co-creation with non-academic agents

OBJECTIVES	DESCRIPTION
CheMatech's mission is to serve the academic community as well as private research and development laboratories by providing high quality and innovative chelating agents and sharing its expertise in the chelator's chemistry. CheMatech and the ICMUB collaborate to provide innovative technologies that contribute to ensuring that chemistry is not a lock for the development of applications.	CheMatech is a unique company in Europe specialising in the design and synthesis of macrocyclic polyamines such as DOTA and NOTA derivatives. It was founded in 2005 by Dr. Frédéric Boschetti and Pr. Franck Denat. The company was built up around the know-how acquired in the field of chelating agents and fluorescent probes, radiochemistry and bioconjugation technologies for over three decades at the Institute of Molecular Chemistry at the University of Burgundy, Dijon, France.

RESULTS	REPRODUCTIBILITY
CheMatech, with 30 years of experience, now offers a catalog of more than 100 products and offers custom synthesis of molecules from the gram to the kilogram scale following good manufacturing practices.	The CheMatech company is a good example and good practice to illustrate the valorisation of research and the co-creation of knowledge between university and society.

WEB OR CONTACT: https://www.chematech-mdt.com/

EduFutura Jyväskylä

SUMMARY: EduFutura Jyväskylä is a teaching and learning research and development community formed by two higher education institutions, the University of Jyväskylä and the Jyväskylä University of Applied Sciences, and a secondary institution, the Jyväskylä Educational Consortium Gradia. EduFutura involves cross-study between the three educational establishments, providing flexible study paths for students. Cross-study is free of charge.

AREA OF ACTION: Co-creation with non-academic agents

OBJECTIVES

EduFutura aims to search for learning solutions of the future and to create diverse opportunities for students to pursue flexible and individual study paths. EduFutura strengthens the appeal of Jyväskylä together with the network's staff, students' and associate partners.

DESCRIPTION

Collaboration between these three organizations has been carried out for decades. The EduFutura co-operation agreement was established in 2016. This reflects a broader strategic and structural change in the Finnish higher education policy. The Ministry of Education has encouraged research universities and universities of applied sciences to find new ways for co-operation structures, alliances and even mergers. There are currently 11 processes ongoing in Finland, EduFutura being one of them.

RESULTS

In the academic year 2020-2021 the cross-study involved 11 study fields, a shared online course catalogue (over 200 courses), 2000 study registrations and over 3000 ECTS completed credits. Organizational processes for course applications and registrations, as well as recognition of achievements have been developed. There are continuous working groups on curriculum development, transition from secondary to higher education, guidance development and subject specific working groups.

REPRODUCTIBILITY

The European Commission supports lifelong learning and the development of key competences and basic skills for all. EduFutura enables cross institutional studies from vocational schools to universities and throughout the work life. This model is reproducible in other regions too.

RESPONSIBLE: Terhi Skaniakos, Senior Advisor, edufutura@jyu.fi
WEB OR CONTACT: https://edufutura.fi/edufutura/edufutura-briefly-in-english/

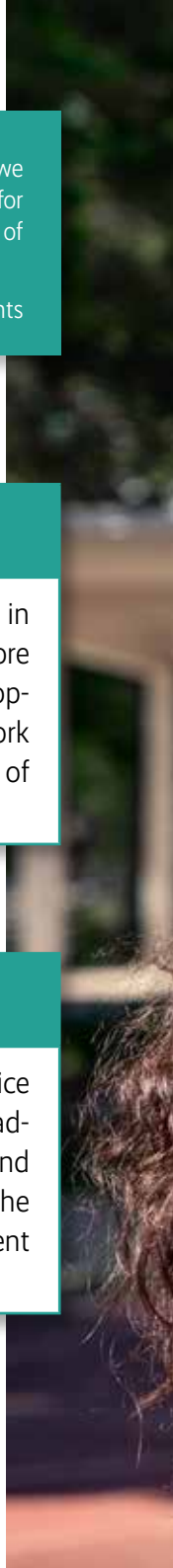
JYU & non-academia co-financed academic chairs

SUMMARY: Joint academic chair. As a case example, we highlight Mihaly Szerovay, the joint professor of practice for the University of Jyväskylä and the Football Association of Finland.

AREA OF ACTION: : Co-creation with non-academic agents

OBJECTIVES	DESCRIPTION
The objective of the "football professor" is to promote research in football and develop coaching and education activities.	The academic position of the football professorship and research in collaboration with the University creates an opportunity to get more academic people to participate in football. In addition to the development of top football, the professorship promotes research-based work in Finnish football clubs, thus increasing physical activity in the lives of children and adolescents.

RESULTS	REPRODUCTIBILITY
Improved awareness of the services available. Tailored service to meet the needs of the PI and consortium. Better scheduling of the proposal preparation and therefore improved time management of both researchers and administrative personnel involved. Results can be measured e.g., quantified based on success rate.	The content that Grant Writing Service includes can be modified according to administrative personnel skills, resources and job description. This approach makes the content of the service more transparent and improves time allocation.



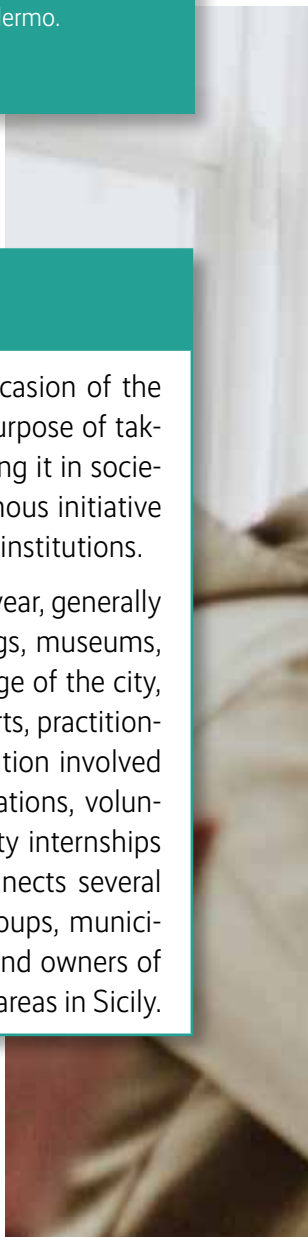
RESPONSIBLE: Mihaly Szerovay, mihaly.m.szerovay@jyu.fi

WEB OR CONTACT: https://www.jyu.fi/en/current/archive/2020/05/mihaly-szerovay-is-finland2019s-first-201cfootball-professor201d

Le Vie dei Tesori

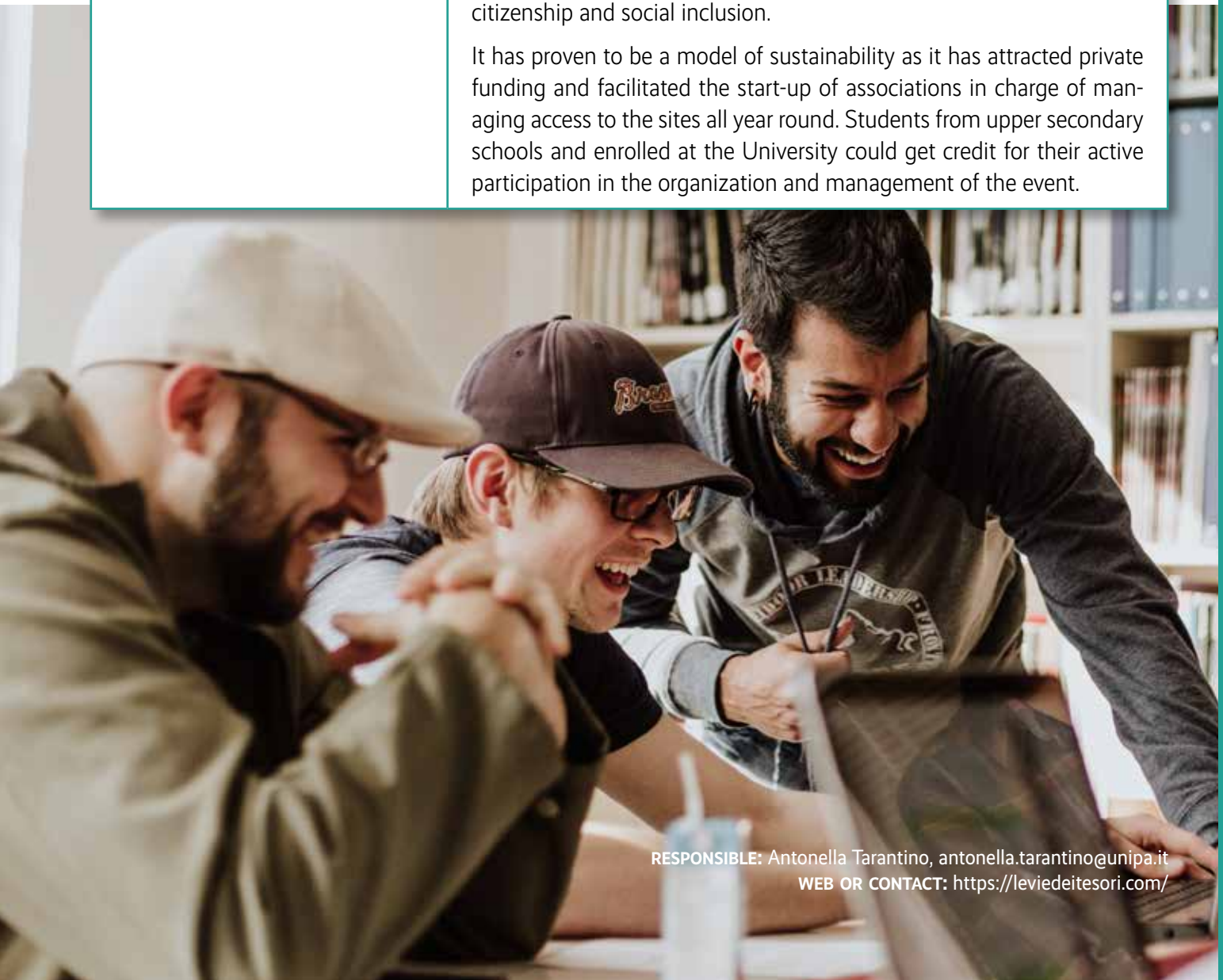
SUMMARY: "Le Vie dei Tesori" is a festival, born in 2006, designed to involve the city and to promote the University as a "cultural agency." From 2006 to 2012 it was organized by the University and then became an academic spin-off, the association "Le vie dei tesori." Two years later, it became a non-profit organization. Currently, it is about to become a foundation. "Le vie dei tesori" involves more than one hundred private and institutional stakeholders in Palermo.

AREA OF ACTION: Co-creation



OBJECTIVES	DESCRIPTION
• To make communities grow starting from their tangible and intangible heritage. • To promote the cultural inheritance of the city, facilitating access also to sites which are not always open to visitors. • To engage citizens in the preservation and enhancement of historical and cultural sites. • To involve schools and students as ambassadors of the cultural heritage of the city.	Le Vie dei Tesori was conceived in 2006 on the occasion of the bicentenary of the University of Palermo with the purpose of taking knowledge out of the university and disseminating it in society. The event has subsequently become an autonomous initiative that embraces the places of all the city and regional institutions. The festival takes place from one to two months per year, generally on weekends, welcoming visitors to historic buildings, museums, libraries, and the whole historical and cultural heritage of the city, University sites included. Visitors are guided by experts, practitioners, or enthusiasts, including students. The 2019 edition involved about 1500 young Sicilians in professional collaborations, volunteer paths and training courses in the field (university internships and school-work alternation). Le Vie dei Tesori connects several public and private stakeholders such as research groups, municipalities, non-profit organizations, small companies and owners of historical buildings, as well as different geographical areas in Sicily.

RESULTS	REPRODUCTIBILITY
5.246 visitors to the University sites during the festival in 2019.	Le Vie dei Tesori has served as a powerful tool for the third stream of the University of Palermo, especially through the close connection with the schools involved in the cultural routes and has encouraged active citizenship and social inclusion. It has proven to be a model of sustainability as it has attracted private funding and facilitated the start-up of associations in charge of managing access to the sites all year round. Students from upper secondary schools and enrolled at the University could get credit for their active participation in the organization and management of the event.



RESPONSIBLE: Antonella Tarantino, antonella.tarantino@unipa.it
WEB OR CONTACT: https://leviedeitesori.com/

Microsoft centre (LUMIC)

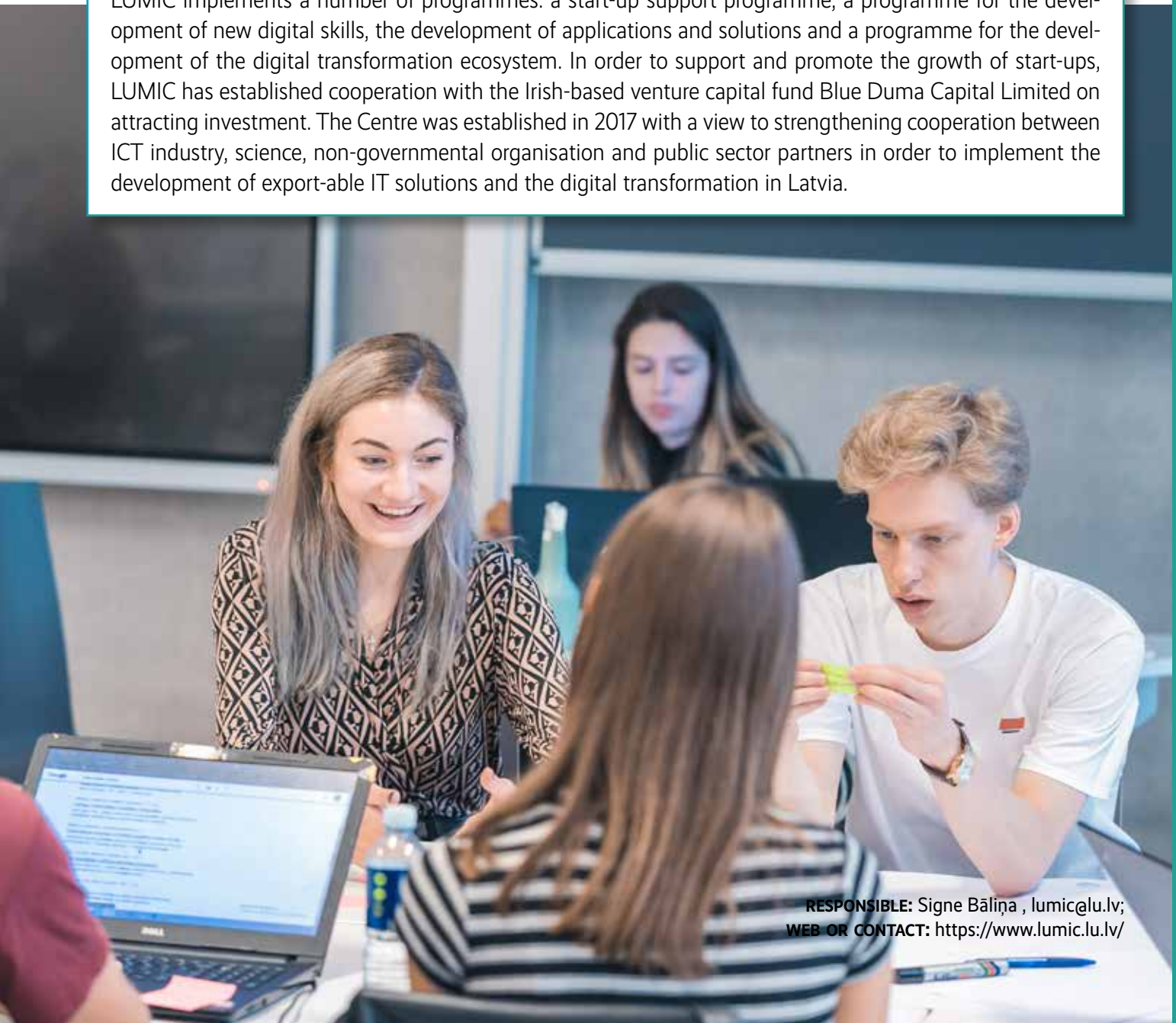
SUMMARY: A cooperation initiative between the University of Latvia (UL) and the Microsoft Innovation Center (MIC) to promote innovative research projects and novel technological solutions.

AREA OF ACTION: Co-creation with non-academic agents

OBJECTIVES	DESCRIPTION
The aim of the University of Latvia (UL) and Microsoft Innovation Center (MIC) is to strengthen cooperation between industry professionals, the public sector, government, scientists, students, entrepreneurs and Microsoft experts. The purpose of the joint activity is to develop projects for development of cloud-based solutions and services and to further digital transformation in different sectors.	The Innovation Center operates in two main directions: the implementation of innovative interdisciplinary IT projects focusing on solutions of cloud computing, the internet of things and artificial intelligence, as well as promotion of IT education and support to education of young professionals. This cooperation project between UL and Microsoft Innovation Center at present is the only one in the Baltics and Eastern Europe. The Innovation Centre's (LUMIC) mission is to promote digital transformation and develop innovative solutions in Latvia. Several experts are working together to create new ideas for Latvian innovation projects. The centre provides an opportunity for all stakeholders to participate and promote the development of the local ICT market to the extent that it will have a significant impact on the overall Latvian economy. This means increasing employment, developing interdisciplinary cooperation, creating new solutions, services and promoting investment opportunities in the following areas: artificial intelligence, machine learning, data analytics, internet of things.

RESULTS

LUMIC implements a number of programmes: a start-up support programme, a programme for the development of new digital skills, the development of applications and solutions and a programme for the development of the digital transformation ecosystem. In order to support and promote the growth of start-ups, LUMIC has established cooperation with the Irish-based venture capital fund Blue Duma Capital Limited on attracting investment. The Centre was established in 2017 with a view to strengthening cooperation between ICT industry, science, non-governmental organisation and public sector partners in order to implement the development of export-able IT solutions and the digital transformation in Latvia.



RESPONSIBLE: Signe Bāliņa , lumic@lu.lv;
WEB OR CONTACT: https://www.lumic.lu.lv/

New Digital Frontiers

SUMMARY: New Digital Frontiers is an innovative start-up that promotes book culture using technology as a dissemination tool.

AREA OF ACTION: Co-creation

OBJECTIVES

- To design and implement a digital platform for the establishment of a web library containing high-quality digital works that can be purchased or downloaded in "Open Access".
- To activate a training laboratory in which students and recent graduates in the humanities and IT disciplines can carry out internships and training courses in humanistic computer science.
- To design and implement Smart Heritage products, through the following digital tools:
  - ↳ Immersive and absorptive experiences as Virtual Reality and Augmented Reality in museums, exhibits and large events.
  - ↳ Mobile apps with innovative navigation systems (i.e., geolocation).
  - ↳ E-books to relive the precious contents of ancient books through a high level of interaction and involvement.

DESCRIPTION

New Digital Frontiers is a UNIPA spin-off, born as an innovative start-up incubated at Arca - the University consortium for the application of research and the creation of innovative enterprises. The project aims to explore the new frontiers of human sciences-related information technology and Smart Heritage and to create new job opportunities.

RESULTS

The spin-off has created new job opportunities fostering the set-up of two cooperative companies (Edity and Paragraphics) by young graduates who have successfully entered not only the publishing job market but also the digitization and graphics domains.

REPRODUCTIBILITY

New Digital Frontiers has boosted the open access publishing processes and has supported contamination between digital skills and a social and human science background. NDF's innovative experience in the field of digitization can be considered a best practice for the enhancement of the cultural heritage of other universities.

RESPONSIBLE: Antonio Giuffrida, antonino.giuffrida@unipa.it
WEB OR CONTACT: https://www.newdigitalfrontiers.com/it/

Patent development for antifungal biological product

SUMMARY: Cooperation of the IBWF (Institute of Biotechnology and Drug Research , Mainz) with the BASF SE for the development of a procedure for the use of *Paenibacillus* strains as antifungal biological agents, and the discovery of new compounds produced by these species.

AREA OF ACTION: Co-creation with non-academic agents

OBJECTIVES	DESCRIPTION
The invention relates to *Paenibacillus* strains, originally isolated from soil, showing antagonistic activity against a broad range of pathogens and being capable of producing antimicrobial metabolites. The invention also relates to a method of controlling or suppressing plant pathogens or preventing plant pathogen infections by applying such composition. Novel fusaricidin-type compounds, which are metabolites produced by the strains, are being developed.	In close collaboration between the IBWF and BASF the application of a biological control agent for plant protection was assessed. IBWF developed inexpensive and efficient methods of cultivation of the strains for subsequent formulation and investigated the molecular basis of biological activity. BASF was responsible, among other things, for product formulation, green house assays, field trials, etc.

RESULTS	REPRODUCTIBILITY
The collaboration resulted in the registration of a patent, which may soon be on the market.	Such collaborations show the potential for knowledge exchange between academia and industry resulting, in this case, in a product that can be beneficial to society and the environment. These collaborations could be reproduced in other countries and regions.

RESPONSIBLE: thines@ibwf.de; info@ibwf.de
WEB OR CONTACT: http://www.ibwf.de/

Platform INNOTRANSFER

SUMMARY: INNOTRANSFER is a multisectoral open innovation initiative promoted by the Network of Valencian Science Parks. The programme aims to promote innovation in key economic sectors for the Valencian Community, supporting its Regional Strategy for Innovation and Smart Specialization. INNOTRANSFER has the participation of the main business associations, Public Universities and the Network of Technological Institutes REDIT, and is financed by the Valencian Innovation Agency. They are committed to promoting collaboration between researchers and companies through the catalytic action of the intermediate structures of the public-private research ecosystem and the Valencian business ecosystem. The Scientific Park of the University of Valencia has coordinated activities in the Agri-Food and Food and Hospital Diet sectors.

AREA OF ACTION: Co-creation with non-academic agents

OBJECTIVES

INNOTRANSFER is a platform for sharing the challenges posed by the private business sector and the solutions that the academic world can develop, with the main objective of establishing collaboration between them. Said collaboration can be materialized in any possible way, such as signing agreements, service contracts, joint submission to public funding programmes and any other form of collaboration.

The platform does not present quantifiable objectives to be achieved, but it does register indicators of the evolution of the initiative. In 2020, 235 projects (challenges and solutions) were registered, the vast majority (about 85%) being projects formulated by the academic world.

The objectives in 2021 were to disseminate the initiative to the business sector (represented by business associations from various areas of the Valencian Community), encourage them to pose their challenges, offer them the collaboration of the academic sector (Universities, Research Groups, Technology Centres, Technological Institutes) and guide them, where appropriate, toward the possibilities of public and private financing.

DESCRIPTION

In 2020, each Science Park of the Valencian Science Parks network carried out a dissemination campaign from September to December for each priority sector selected from those mentioned in the SUMMARY mentioned above.

The Science Park of the University of Valencia coordinated the activities in the agricultural food sector. The actions carried out were as follows:

- Sector research and selection of relevant members within the agri-food sector.
  - ↳ Private sector: business associations (FEDACOVA, QUIMACOVA, FECOAV. CEV), private investors in the agro sector (Startup Valencia, Big Ban Angels).
  - ↳ Research sector: Universities of the Valencian Community (UV, UPV, UJI, UA, UMH) and their research transferring offices (OTRI) as elements of communication between Research Groups and the research sector; CSIC technology centres (IATA-CSIC); Technological Institutes (ainia).
- Contact with associations and research organizations to invite them to participate in the initiative by formulating challenges and proposing solutions.
- Online kick-off seminar of INNOTRANSFER (05 Nov 2020- Agri-fozod | Innotransfer). Dissemination was carried out in various media: RRSS (LinkedIn, Twitter, PCUV website), emailing to PCUV companies and companies in the Valencian agri-food sector selected for their special economic relevance, dissemination to members and associates of collaborating organizations (FEDACOVA, QUIMACOVA, FECOAV, CEV, IATA-CSIC, AINIA Centro Tecnológico, rePCV, Startup Valencia). A period of reception of one month from the start date (webinar) of challenges/solutions was opened through a form available on the same platform.
- Formulation of challenges and solutions: researchers and companies presented 92 expressions of interest (challenges and solutions) related to the agri-food sector that led to about 40 samples of interest sent via the web or through direct contact with managers. Also, 16 one-on-one meetings were carried out; most of which have no record. During this short period of time, it is not possible to determine how contacts have ended.

INNOTRANSFER works mainly in the priority sectors defined by the Valencian Agency for Innovation in its Specialized Strategic Innovation Committees (CEEI) and in technological dialogues, such as agri-food; food and hospital diet; automotive and sustainable mobility; smart tourist destinations; circular economy; emergencies; sustainable habitat; mobility, transport and infrastructures; health; facing unwanted loneliness in vulnerable collectives; and enabling technologies.

RESULTS	REPRODUCTIBILITY
The INNOTRANSFER platform has shared the research activity that is being developed in the Valencian Community, where it has been possible to give visibility to 229 challenges and solutions, and more than 100 contacts were developed in 2020. The objectives for 2021 were adapted to the goal of promoting participation of the private sector through formulation of "business challenges" and the search for "solutions" in the short and medium term that could be materialized in collaboration agreements of any nature (e.g., public-private agreement, collaboration agreements, R&D projects with regional, national or European public funding, private funding, service contracts or any other collaboration model). In this context, 40 organizations have joined the initiative. It has mobilized more than 75 Innovation Managers and 19 events (face-to-face and online). Moreover, private sector participation in the formulation of challenges and disseminating the research of the academic sector is expected to increase. By September 2020 eight online events had been developed on agri-food, sustainable habitat, health or circular economy with about 800 registered in total.	The INNOTRANSFER platform has promoted networking among the five Valencian public universities and their respective Science Parks as organizers of the initiative along with more than 20 business associations and the most representative Technological Centres and Institutes within the academic field. In 2020 INNOTRANSFER was an example of the power that the Valencian academic world has in the R&D sector and its ability to generate high-value projects for the Valencian business fabric. More than 1,100 companies and researchers registered for the conference or presented their projects, challenges or solutions. During 2021, academic participation was consolidated and the presence of the business sector reinforced through the adhesion of leading business organizations. Future editions will make progress in the participation of private companies so that they become the main driving force behind INNOTRANSFER.

RESPONSIBLE: Jose Zayas
WEB OR CONTACT: www.innotransfer.org

Revitalizing an agribusiness research centre "pomology"

SUMMARY: The University of Opole (UO) has engaged with regional and local authorities and various stakeholders in revitalizing a remnant of the Royal Farming Academy and Institute from the 1850s, known as "Old Pomology," into a modern research and development centre for agribusiness and farming.

AREA OF ACTION: Co-creation with non-academic agents

OBJECTIVES

Since 2015, UO has been recruiting partners and stakeholders among business and regional policy-makers to join its academic experts in building a modern multidisciplinary research and development centre in Opole and Prószków. The project would not only revitalize the site previously known for botanical works and horticulture established by the Royal Farming Academy and Institute, but also build new labs and increase the quality of scientific developments to be commercialized and exploited in the region's agriculture.

DESCRIPTION

The newly constructed interdisciplinary centre hosts facilities to develop projects in toxicology, ecology, soil science and precise farming technologies, equipped with experimental farming fields, educational routes and spaces for agribusiness events, such as fairs, exhibitions and conferences. It will also host an information system developed by the UO devoted to the needs of stakeholders.

RESULTS

30% of the infrastructure will be devoted to solving commercially viable problems and developing new technologies. Sectors of local economy such as biotechnology, food processing, ecology, sustainable energy and chemical production are to be able to profit from the centre's services.

REPRODUCTIBILITY

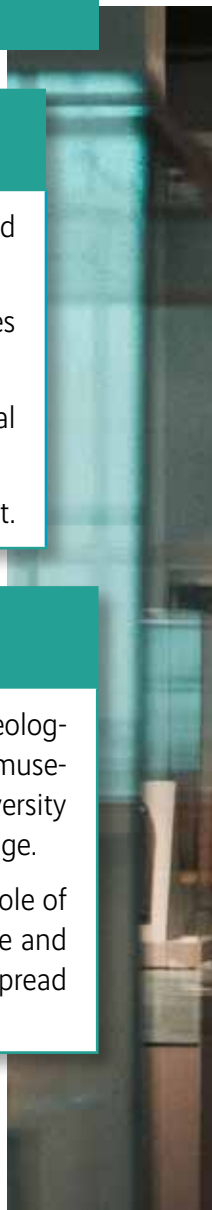
Even at the planning and developing stage of the centre, the University authorities negotiated its prospects and worked closely with regional authorities, researchers, sponsors (e.g., *The European Regional Development Fund*) and contractors, possible stakeholders and the local community to make the centre a paragon of innovativeness and sustainability, to reduce barriers to accessibility to new technologies and to improve the competitiveness of the region in agribusiness and farming sectors.

RESPONSIBLE: inż. Grzegorz Sawicki, Zespół ds. realizacji i rozliczeń projektu Pomologia – Prószków w Biurze Nauki i Obsługi Projektów
WEB OR CONTACT: Międzynarodowe Centrum Badawczo - Rozwojowe Uniwersytetu Opolskiego

SiMuA. University Museum System

SUMMARY: SiMuA is the network of Museums and Collections of the University of Palermo. It includes six thematic museums of international relevance. The University of Palermo has established the Service Centre "SiMuA" to improve the valorisation of its cultural heritage, promote public engagement and enhance the co-creation of cultural contents with citizens.

AREA OF ACTION: Co-creation



OBJECTIVES

- To promote the conservation, enrichment, enhancement and fruition of academic scientific and cultural heritage for educational, research and third-stream purposes.
- To implement the effective management of a valuable cultural offer distributed over several sites in the urban environment.
- To coordinate activities and events hosted on the sites maximising the access of the general public to them.
- To enhance ongoing communication with users and get their feedback for further improvement.

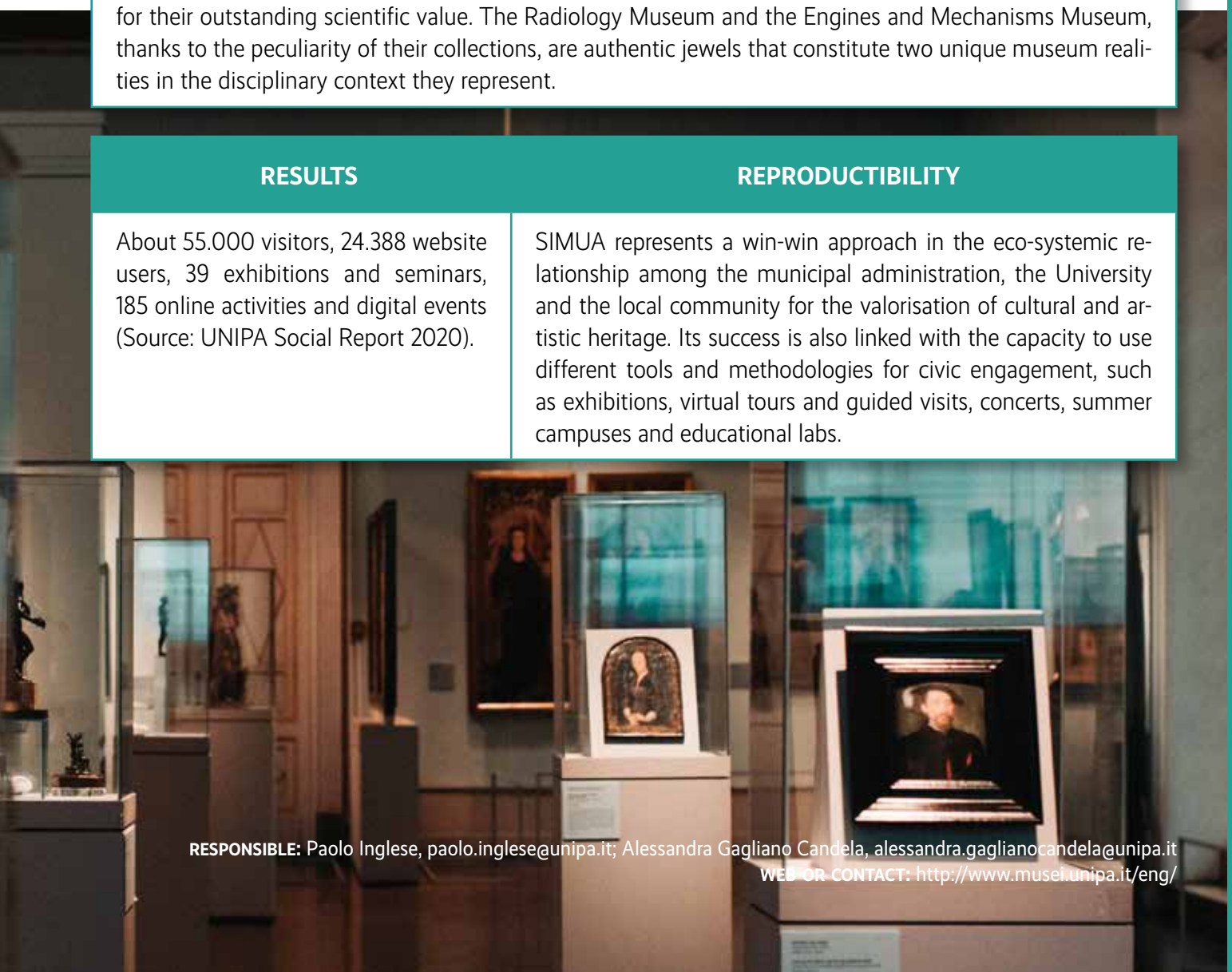
DESCRIPTION

The University of Palermo preserves a rich and highly valuable heritage, very important from the archaeological, historical, artistic and scientific points of view. Its valuable historical buildings, chapels, paintings, museums and the Botanical Garden are regularly open to the public or can be visited on request. The University of Palermo has established the Service Centre "SiMuA" to improve the valorisation of its cultural heritage.

Its Museums and Collections together tell the history of this University, but also the history of the whole of Sicily. SiMuA, established in 2017 and housed inside the Botanical Garden, aims to enhance, preserve and improve this great heritage, but above all to promote its most valuable aspects, contributing to the spread of knowledge concerning them.

SiMuA has six thematic museums, which have been well-established for many years now and which are presently acknowledged and appreciated both scientifically and culturally. Among them, the Botanical Garden stands out with its 220 years of history and the huge number of its flora specimens; it is the flagship of the living museums in Europe, as well as the starting point of botanical studies in Sicily. The Zoology Museum "P. Doderlein," the Geology Museum "G.G. Gemmellaro" and the Specola Museum hosted in the ancient Astronomical Observatory (1790) have a high-profile role, both for their important collections and for their outstanding scientific value. The Radiology Museum and the Engines and Mechanisms Museum, thanks to the peculiarity of their collections, are authentic jewels that constitute two unique museum realities in the disciplinary context they represent.

RESULTS	REPRODUCTIBILITY
About 55.000 visitors, 24.388 website users, 39 exhibitions and seminars, 185 online activities and digital events (Source: UNIPA Social Report 2020).	SIMUA represents a win-win approach in the eco-systemic relationship among the municipal administration, the University and the local community for the valorisation of cultural and artistic heritage. Its success is also linked with the capacity to use different tools and methodologies for civic engagement, such as exhibitions, virtual tours and guided visits, concerts, summer campuses and educational labs.



RESPONSIBLE: Paolo Inglese, paolo.inglese@unipa.it; Alessandra Gagliano Candela, alessandra.gaglianocandela@unipa.it
WEB OR CONTACT: http://www.musei.unipa.it/eng/

Spinout generation, Graphogame & Weeefiner

SUMMARY: A technology transfer process and venture funding in which a research-based spinout (Weeefiner) and a firm owned by scientists (IPR) are involved. The companies received funding from the university venture capital fund (Unifund) and used the services of the Startup Factory, co-owned by the University of Jyväskylä (JYU).

AREA OF ACTION: Co-creation with non-academic agents

OBJECTIVES	DESCRIPTION
The goal is to increase the number of invention disclosures, number of IPR agreements and number of spinouts.	In order to activate scientists and faculties, deans responsible for innovation have been named. Technology transfer experts form working tandems with the deans to keep regular updates. Technology transfer experts also visit the faculty scientist with the mobile idea kiosk on a regular basis (apart from pandemic time). We have quite a lot of other activities too, which aim to encourage scientists to enhance innovation culture.

RESULTS	REPRODUCTIBILITY
Currently the number of new spinouts per year is around three and the number of IPR agreements (license or sale) is also around three. JYU is basic research- and science-orientated and has strong Humanities and Social Sciences departments, where potential is seen for future research-based business impact. JYU has strongly invested in enhancing the entrepreneurial skills of students and staff and in facilitating a start-up and spinout generation.	The innovation activation model is adaptable to other universities. The JYU is interested in sharing experiences and learning from technology transfer services from other universities.

RESPONSIBLE: Laura Aineslahti, laura.k.aineslahti@jyu.fi
WEB OR CONTACT: https://www.graphogame.com/index.html, https://weeefiner.fi/

SPRING

SUMMARY: SPRING is a project funded by the Programme Erasmus+ 2018 and led by UNIPA with the aim of helping EU family businesses fulfil their potential by offering them a complete package with the necessary training, mentoring, support and guidance.

AREA OF ACTION: Co-creation

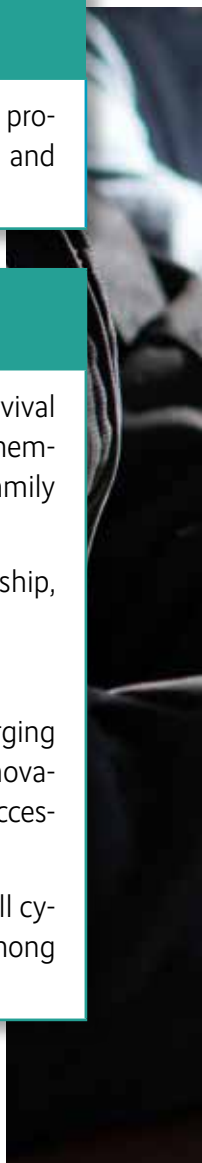
OBJECTIVES

The project aims to design and pilot an innovative and practical SPRING Training and Consultancy programme, jointly offered by a consortium of 11 partners composed of EU universities and adult training and consulting companies.

DESCRIPTION

Since family businesses are considered to be the cornerstone of the EU economy, their long-term survival is of crucial importance for EU economic growth and EU competitiveness and the decrease of the unemployment rate. SPRING aims at offering customised training, mentoring, support and guidance to family businesses across Europe in the areas of:

- Smooth succession and business continuity and accounting for multi-dimensional factors (leadership, management, governance ownership, legal issues), through failed and successful cases.
- Strategy for growth and internationalization, built on innovation and regeneration.
- Development of entrepreneurship, intrapreneurship and interpreneurship across generations, converging the entrepreneurship and family business training content, promoting a start-up culture and an innovation-based growth mindset within family businesses, while considering other strategies besides succession (exit strategies, external investors coming in, etc.).
- Inclusive and responsible family business acts to ensure they adopt not only CSR practices but the full cycle, to maximise value creation for all involved stakeholders, promoting inclusive entrepreneurship among the next generation members and female leaders.



RESULTS

Expected impacts during project implementation:

- 1500 family businesses involved in needs' analysis (interviews and focus groups).
- 100 people to participate in the pilots (younger and senior family members).
- 50 guest speakers and mentors involved.
- 20000 people reached through media.
- 300 participants in final dissemination event.
- 10 promotional events taking place across 10 EU countries.
- 3000 users of online training platform within a year of going live.

REPRODUCTIBILITY

SPRING reviewed curricula of academic and training programmes targeting family businesses, EU policy papers and formal statistics on succession and company loss of family businesses at a national and EU level. Additionally, quantitative research using a short online survey that included 1,613 respondents and a qualitative analysis via focus groups and interviews with members of family businesses in all participating countries was conducted.

An innovative and practical training and consultancy programme to address the identified needs and challenges faced by family businesses is currently being developed. It will be implemented through pilot training and offered via the e-learning platform and by renowned EU universities and training and consulting companies.

RESPONSIBLE: Salvatore Tomaselli, salvatore.tomaselli@unipa.it
WEB OR CONTACT: www.euspring.eu

Start-up SON

SUMMARY: SON (Synthesis Of Nanohybrids) is a start-up resulting from the University of Burgundy and a maturation of the SATT SAYENS (Technology Transfer Acceleration Company). SON's aims at developing its activities in the fine chemicals and pharmaceutical industries.

AREA OF ACTION: Co-creation with non-academic agents

OBJECTIVES	DESCRIPTION
SON's objective is to accompany the medical, environmental and catalysis industries on the path of nanotechnologies in order to facilitate their integration and adoption.	SON is a start-up engineering company that designs and manufactures highly reproducible, highly characterised and bi-functionalized nanoparticles for various fields of application, such as diagnostics, therapy and catalysis. The company's vision is to accompany industrialists in the adoption of nanotechnologies with their smart nanoparticles.

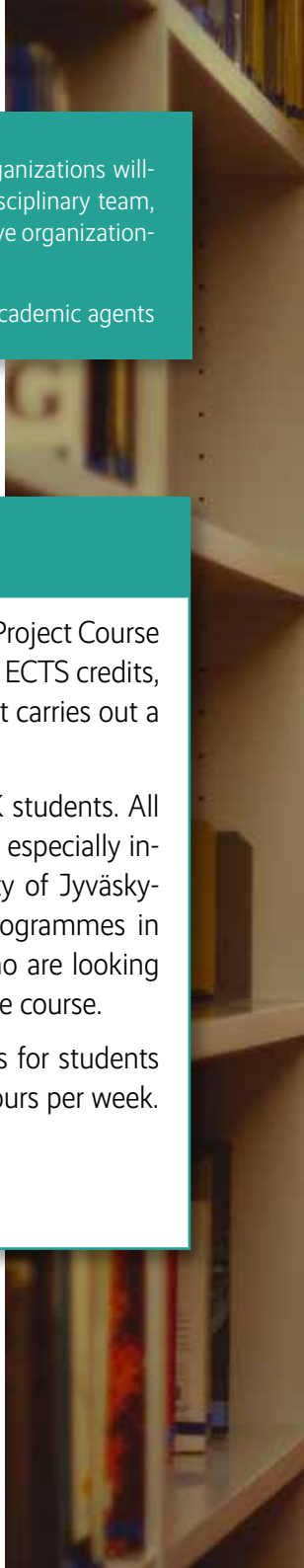
RESULTS	REPRODUCTIBILITY
SON was the winner of the RDV Carnot 2020 and won the Grand Prix of the i-PhD competition in 2019. It was certified Initiative Remarquable (France Initiative) in 2021. SON is the fourth start-up resulting from research results at the University of Burgundy in which SAYENS takes part to reinforce its development.	SON is a good example and good practice to illustrate co-creation with non-academic agents, as the technology was transferred on behalf of the University of Burgundy by the SATT, accelerating the development of the start-up SON. It is a good example of successful technology commercialization for any researcher wishing to become entrepreneur.

WEB OR CONTACT: https://www.u-bourgogne.fr/actualites/la-nouvelle-generation-de-nanoparticules-intelligentes-grace-a-son-start-up-issue-de-lub-et-dune-maturation-de-la-satt-sayens.html

Team & Client Multidisciplinary Business Project

SUMMARY: A 3-month-long project for organizations willing to develop their practicalities. A multidisciplinary team, consisting of 3-6 students, is assigned to solve organizational challenges.

AREA OF ACTION: Co-creation with non-academic agents



OBJECTIVES

During the Team & Client project course students will practice project and teamwork skills and network with students in other fields. Students will implement a development project providing new ideas and knowledge for a real client in multicultural and multidisciplinary teams.

Organizations receive at their service a team of future professionals to solve demanding problems and challenges in their organization. They can collaborate with a high-standard university, acquiring up-to-date knowledge and expertise from students from different fields and thereby find new perspectives for the development of their organization. A recruitment channel for hiring students can be also developed.

DESCRIPTION

Team & Client Multidisciplinary Business Project Course is a practically oriented study module of 5 ECTS credits, within which a multidisciplinary team that carries out a development project for a real client.

The course is targeted at JYU and JAMK students. All students in master's degree programmes, especially international programmes, at the University of Jyväskylä, and students in bachelor's degree programmes in JAMK University of Applied Sciences who are looking for specialization studies, can apply for the course.

The project involves three-month courses for students and requires a dedication of at least 10 hours per week.

RESULTS	REPRODUCTIBILITY
The course gives the students practical experience to identify their competence in project-based and multicultural teamwork. They learn to recognise the principles of the project work and to work as a member in a project team. The course prepares the students for work-life in a practical way, and students learn how to set goals, prepare project plans, assess time management and workloads, implement projects and present their results to the client and peer group, which are all very relevant skills in working life. In the course, they learn by doing, which is completely different from traditional courses.	This course has been used by one of FORTHEM's Civic Engagement Projects (Spring).

RESPONSIBLE: : Reija Häkkinen, Anu Ojala
WEB OR CONTACT: www.jyu.fi/projectcourse

The Startup Factory

SUMMARY: The Startup Factory is an incubator where the best initial-stage business ideas are grown into successful companies in cooperation with educational institutes. The Startup Factory is co-owned by JYU together with the city of Jyväskylä, the Gradia Jyväskylä Educational Consortium and Jyväskylä University of Applied Sciences.

The Startup Factory offers high-quality, customised training for start-up entrepreneurs at their initial stages through the incubator and through educational institute coaching intended for business ideas and companies of educational institutes.

AREA OF ACTION: Co-creation with non-academic agents

Yritystehdas
The Startup Factory

OBJECTIVES	DESCRIPTION
The Startup Factory exists to encourage start-up creation in the region, to introduce a more entrepreneurial attitude to workplaces and to attract students to the entrepreneurship courses of the educational institutes.	Incubator operations have been implemented in Jyväskylä for years by several different actors. The framework for the current incubator operators is based on the background of those organizations and financing structures. The Startup Factory is now utilizing those tried and tested models and has instructed services that follow the new strategy. The Startup Factory was established in 2017 and continues the development of a lean organization.

RESULTS	REPRODUCTIBILITY
The Startup Factory coaches hundreds of business ideas yearly. The twelve best start-ups are chosen for the incubator's 12 month + 12 month-long training process. These growth companies in the Jyväskylä region aim towards international growth.	The Startup Factory has a broad spectrum of activities and services (e.g., digital coaching platform, entrepreneurial coaching for students and scientists, small product development funding). As part of the European Network of Universities, we could get new ideas to improve the services if we benchmark each other's support services for entrepreneurs.

RESPONSIBLE: : Kati Rauhaniemi
WEB OR CONTACT: https://www.yritystehdas.fi/en/

OPEN-SCIENCE GOOD PRACTICES

Data management process

SUMMARY: Data management process is still in the making at JYU. The aim is that researchers take care of data management from the beginning to the end of their research, using only the University's own systems that are linked with national services. The data management system adds value by guiding and helping the researcher through the data management process and provides correct tools and guidance at the right time. The Metadata catalogue and publishing end of the process have already been in production for 1 year and are providing good results.

AREA OF ACTION: Open Science

OBJECTIVES

Vision: "Everything related to data management under the same roof"

Data management planning is done using software that is integrated into the whole data management infrastructure. It will enable researchers to both plan data management and put it into action from the same place.

- Research data is stored in proper systems provided by the University or CSC.
- Data will be documented in sufficient manner as to make it (inter)operable and (re)usable.
- Metadata of the research data is created and maintained in JYU's CRIS.

Metadata and data, if possible due legal and ethical constraints, is published as open data and at least one parallel copy is published in JYU's JYX repository. This will tackle with F and A of FAIR principles and help researchers to comply with funders' requirements.

DESCRIPTION

Metadata management and publishing have been developed and have been in production for 1 year, since the end of 2020. They have been integrated into national metadata and repositories. JYU is still developing the frontend of JYX to show research data in a more user-friendly manner than it is currently configurated.

Different storage solutions have been developed. Presently primary storage solutions are network drives, Nextcloud cloud storage and Collabroom secure cloud storage. There are still some use cases lacking solutions, and development continues.

We are soon to launch a tool to harvest open datasets published under our affiliation in different repositories. The aim is to add their metadata to our CRIS and make parallel copies of at least metadata public in JYX.

We're currently developing a data management planning platform based on process modelling. We have a modelled planning process and are now trying to apply it as a tool.

All this is supported by arranging support, information and education both as part of PhD curricula but also as workshops specifically tailored to different departments.

RESULTS

Our cloud storage has been warmly welcomed by the community and has already hundreds of users.

Our metadata section in CRIS is quite new and our road show presenting it to different departments is still in progress. Still, we already have over 100 metadata entries in the system. Of those around 10% get published, others are still in progress. This tells us that we have also managed to get a good look at the whole iceberg instead of just the tip, which is visible when concentrating only on the published part of research data. It also confirms that we must strive to serve the whole mass of research data as the vast majority of it still falls outside open data.

We have also obtained good results when we have encouraged people who have made metadata entries to publish them.

Our JYX repository was the first Finnish university repository that was integrated into the Finnish national Metax metadata database.

REPRODUCTIBILITY

This process promotes open science efficiently and makes it easier for the researchers to manage their data and comply with FAIR principles.

This also shows how important it is to get a grasp of one's whole university. If you rely on national services that concentrate only on the publishing part of open data, you'll lose sight of the majority of the data that needs to be managed.

RESPONSIBLE: Juuso Marttila

WEB OR CONTACT: https://openscience.jyu.fi/en/tutkimusdata/research-data-management

E-Sources Repository

SUMMARY: The repository of e-resources of the University of Latvia is intended to ensure the compilation, preservation and free and constant online access to the scientific achievements of the University of Latvia.

The e-resources repository of the University of Latvia was established in 2010. It is a multidisciplinary, inter-institutional repository that ensures the collection, storage and availability of research results for researchers and students. The repository has been validated, included in the infrastructure of OpenAIRE, and accordingly the publications of the University of Latvia are included in the international network of researchers.

The results of studies carried out, publicly funded, or publications of other institutions within the framework of cooperation projects may be placed in the repository, provided that the cooperation agreement between the institutions so provides. Currently the final works of RJA and former RPIVA students have been deposited in the Repository, reflecting international results of studies funded by Latvia and LU.

AREA OF ACTION: Open Science

LATVIJAS UNIVERSITĀTE

OBJECTIVES

The aim of the repository is to promote international visibility of LU, to provide global, free online access to the scientific and research achievements of the institution, thereby contributing to their dissemination, re-use, impact and alienability.

Adding publications to the repository will facilitate the coverage of both individual scientists and all UL scientific activities on the World Wide Web and will ensure greater publicity, citation and impact of UL research, promoting international recognition and cooperation with other institutions.

DESCRIPTION

The repository provides an open access platform for the eternal preservation, access and distribution of research results online. The policy of the open access institutional repository of the University of Latvia has been approved in 2017 (Order No 1/113) and is based on the University of Latvia's Open Access Policy. The Repository Policy requires the deposited materials to realise the principle of open access, provided that this is possible and does not conflict with the Copyright Act and the policy of issuing the journal.

All LU research directions are represented in the repository. It archives various types of documents: bachelor's works, master's works, promotion works, books, articles, research reports and data, articles, conference materials, teaching materials, and digitised materials relevant to LU research and study, etc.

Metadata corresponding to the international standard Dublin Core is created for the units to be inserted.

The UL e-resources repository is included in European and global repository networks and portals (DRIVER, OpenDOAR, ROAR, Dart-Europe, OpenAIRE, etc.), which provides indexing of the repository's content and retrieval of information using Internet search engines.

RESULTS

The repository contains publications of the teaching staff, researchers and structural units of the University of Latvia – articles, doctoral theses and their abstracts, conference materials, reports, research and project reports, journals, collections of articles and other electronic documents – which are publicly available.

REPRODUCTIBILITY

E-resource repository of the University of Latvia provides the possibility to collate, preserve and access freely the scientific achievements of the University of Latvia. It contains publications of the staff members of the University of Latvia - published articles, doctoral thesis and abstracts, conference proceedings, administrative, scientific and funded project reports and other electronic documents.

~ 530,000 units have been deposited in the repository, most of which consists of student closings. The chronological coverage is broad - from 1588 to 2021. The number of units deposited in the repository increases on average by 6% annually.

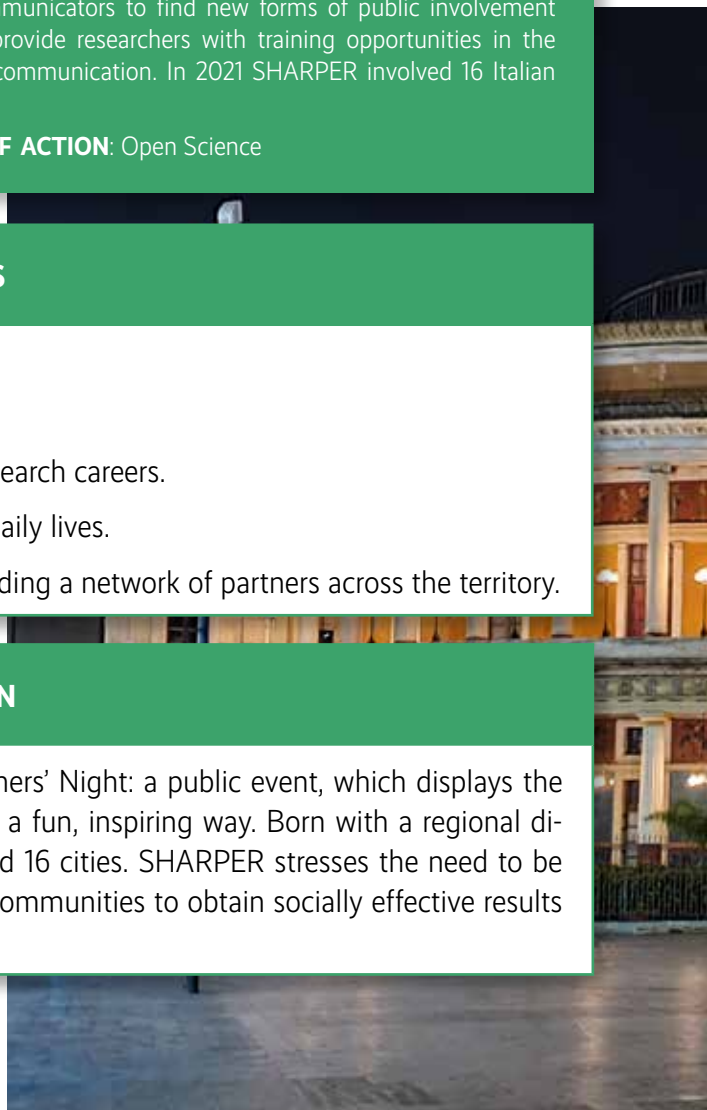
RESPONSIBLE: Ilga Rampāne, ilga.rampane@lu.lv
WEB OR CONTACT: https://dspace.lu.lv/dspace/?locale-attribute=en

European Researchers' Night SHARPER Palermo

SUMMARY: SHARPER - Sharing Researchers' Passion for Engaging Responsiveness is a project funded by the European Commission aimed at involving citizens in research and sensitizing them to the role of researchers in society.

SHARPER interprets the Researchers' Night as a social event to share the passions that animate researchers in their work with the general public. Since the very beginning, It has been characterized by two main aspects: a) the use of streets, squares and other urban areas as outdoor labs to talk about research and experiment it publicly; b) the collaboration between researchers and communicators to find new forms of public involvement and to provide researchers with training opportunities in the field of communication. In 2021 SHARPER involved 16 Italian cities.

AREA OF ACTION: Open Science



OBJECTIVES

- To bring research and researchers closer to the public.
- To promote excellent research projects.
- To increase the interest of young people in science and research careers.
- To showcase the impact of researchers' work on people's daily lives.
- To expand the multidisciplinary character of the event building a network of partners across the territory.

DESCRIPTION

Since 2013 SHARPER has organized the European Researchers' Night: a public event, which displays the diversity of science and its impact on citizens' daily lives in a fun, inspiring way. Born with a regional dimension, SHARPER now involves several Italian regions and 16 cities. SHARPER stresses the need to be responsive through the active engagement of citizens and communities to obtain socially effective results through collective actions.

SHARPER 2021 is focused on researchers' efforts in the societal challenges linked with the Sustainable Development Goals. It is not only an opportunity for citizens' involvement and collective discovery, but also an example of how research communication is an act of responsibility, a commitment which underlines the cultural and political role that researchers and citizens together can and must play in social growth.

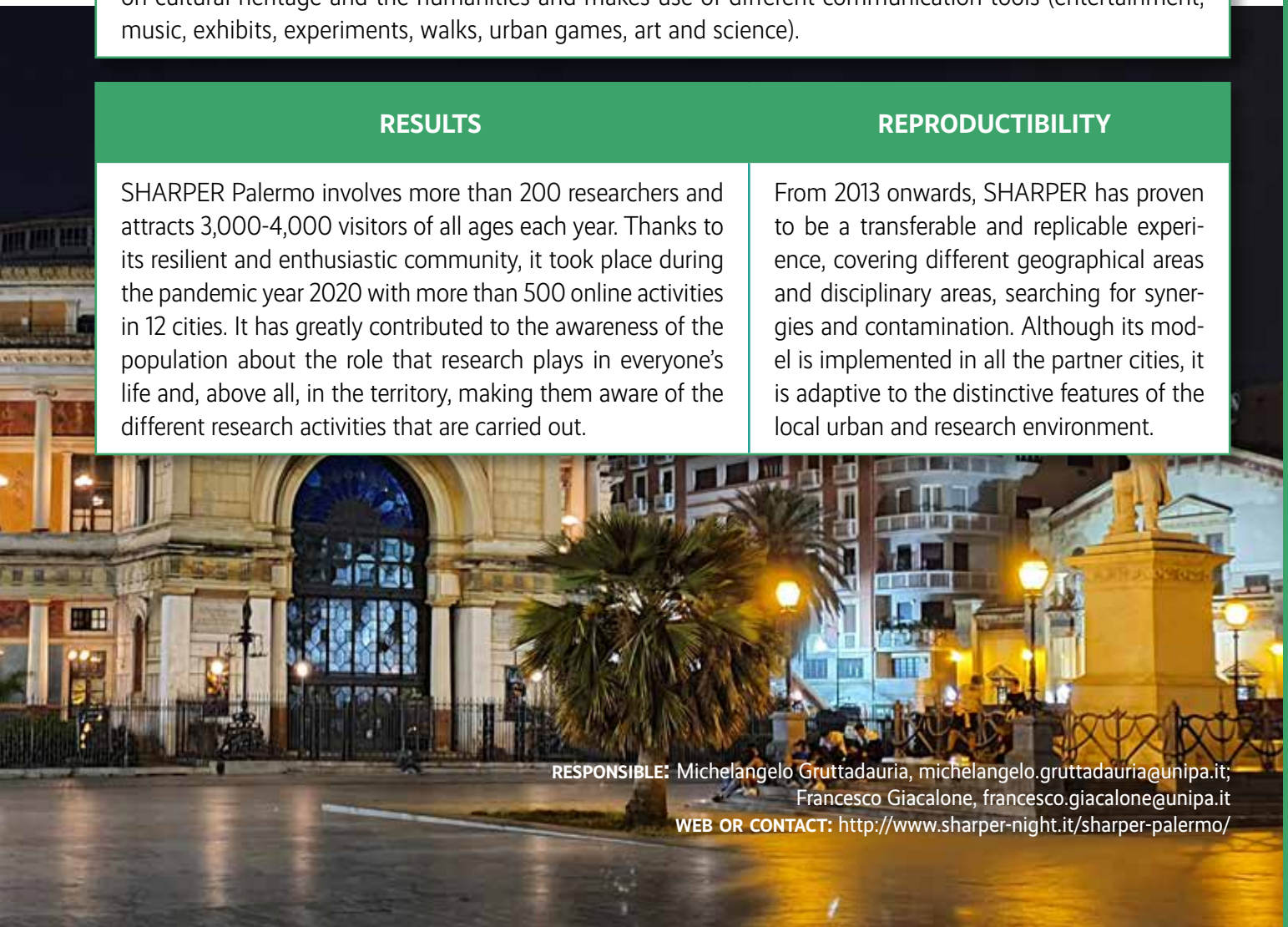
The University of Palermo and Psiquadro, the SHARPER Coordinator, have successfully collaborated in organizing SHARPER since 2016. UNIPA, as a partner of the project, contributes to the organization of events at the local level, involving both its departments and the network of research institutions and associations over the territory. It pays attention not only to scientific research, but also to social sciences, to the research on cultural heritage and the humanities and makes use of different communication tools (entertainment, music, exhibits, experiments, walks, urban games, art and science).

RESULTS

SHARPER Palermo involves more than 200 researchers and attracts 3,000-4,000 visitors of all ages each year. Thanks to its resilient and enthusiastic community, it took place during the pandemic year 2020 with more than 500 online activities in 12 cities. It has greatly contributed to the awareness of the population about the role that research plays in everyone's life and, above all, in the territory, making them aware of the different research activities that are carried out.

REPRODUCTIBILITY

From 2013 onwards, SHARPER has proven to be a transferable and replicable experience, covering different geographical areas and disciplinary areas, searching for synergies and contamination. Although its model is implemented in all the partner cities, it is adaptive to the distinctive features of the local urban and research environment.



RESPONSIBLE: Michelangelo Gruttadauria, michelangelo.gruttadauria@unipa.it;
Francesco Giacalone, francesco.giacalone@unipa.it
WEB OR CONTACT: http://www.sharper-night.it/sharper-palermo/

GREC to RODERIC Gateway

SUMMARY: The University of Valencia uses a CRIS (Current Research Information System) called GREC. RODERIC is the institutional repository of the University. The GREC to RODERIC gateway allows both systems to talk to each other. In this way, researchers can easily self-archive their publications in the repository by attaching a PDF to the metadata provided to the research information system.

AREA OF ACTION: Open Science

OBJECTIVES

The objective is to reduce the constraints in the submission process of contents to the institutional repository. The expectation is to increase the number of deposited research outputs by making the process easier for researchers.

DESCRIPTION

Self-archiving in institutional repositories is the so-called green road to open access to research production. One of the constraints identified in the literature in using the repositories by researchers is the high workload when they need to submit metadata and PDFs to different infrastructures. Technology should be used to reduce such limitations. In an ideal world, researchers will self-archive on a single site, and systems should be able to export or harvest the data to maximize dissemination and reduce the costs.

This is the scenario we have implemented at the UV. Researchers must upload their research outputs onto the CRIS system once a year. They may choose to add to the required metadata the PDF containing the full text of the document. In such cases, the library staff checks that there are no copyright limitations to the open-access distribution of the paper, improves the author's metadata and sends the digital object using the CRIS gateway to the institutional repository RODERIC. Following that, the metadata is exported to third-party service providers like Google Scholar.

RESULTS

This gateway has been in place for 7 years. During this period, there have been 14,000 submissions. Of them, 11,000 have been accepted and 3,000 refused due to copyright issues.

REPRODUCTIBILITY

With such technology in place any CRIS system should be able to communicate data to the institutional repository.

WEB OR CONTACT: roderic@uv.es

HAL-uB

SUMMARY: The HAL-uB portal is intended for the deposit and consultation of the scientific publications of the University of Burgundy.

AREA OF ACTION: Open Science

OBJECTIVES	DESCRIPTION
HAL-uB's objectives are: • to assure a wide diffusion of the results of the research produced by the scientific community of the University of Burgundy. • to increase the visibility of the scientific production of the University's researchers, freely accessible and indexed by the majority of the search engines. • to offer researchers services such as the creation of publication lists, CVs, etc. • to meet the requirements of the French National Research Agency and the European Commission.	The multidisciplinary open archive HAL, developed in 2001 by the CNRS (National Centre for Scientific Research) is intended for the deposit and diffusion of scientific articles of research level, published or not, and theses, emanating from French or foreign teaching and research establishments, from public or private laboratories.

RESULTS	REPRODUCTIBILITY
So far, 12,226 full text documents and 42,058 notices have been uploaded onto the HAL uB portal.	The HAL-uB portal is a good example and good practice in open science as it ensures a wide dissemination of the results of the research produced by the scientific community of the University of Burgundy.

WEB OR CONTACT: https://www.u-bourgogne.fr/recherche-scientifique/experimentarium-decouvrez-les-chercheurs

Johannes Gutenberg Visiting Professorship (Johannes Gutenberg-Stiftungsprofessur)

SUMMARY: The Johannes Gutenberg Visiting Professorship is awarded to outstanding scientists and representatives of public or cultural life, who are invited to offer a lecture series of about ten weeks during the summer semester. Being founded in 2000, the lecture series of the Johannes Gutenberg Visiting Professorship attracts up to 1,000 listeners per lecture on the campus of the University of Mainz

AREA OF ACTION: Open Science

OBJECTIVES

The Johannes Gutenberg Visiting Professorship aims to stimulate fresh approaches to teaching and research, to present living science to the public, to provide a platform for debating current issues and to increase the attractiveness of the University of Mainz.

DESCRIPTION

- The lecture series consists of mostly ten individual lectures.
- Johannes Gutenberg Visiting Professors regularly invite guests to illuminate and to debate the topic of the lecture series from other perspectives.
- Receptions following the first and the last talk allow for an exchange among the audience about the lecture topic.
- The Visiting Professorship is funded by income from the original endowment as well as from proceeds from a fund-raising dinner organized by Friends of the University.

RESULTS

Every summer semester, the guest lecture series attracts an audience of up to 1,000 people per lecture – students, university faculty and public alike. Videos of the lectures reach up to several thousand views on the Foundation's YouTube channel.

REPRODUCTIBILITY

The Johannes Gutenberg Visiting Professorship successfully helps to cultivate a lively connection between the city of Mainz and the University of Mainz, and between science and the public.

RESPONSIBLE: Univ.-Prof. Dr. Cornelis Menke; stiftung-jgsp@uni-mainz.de

WEB OR CONTACT: https://www.stiftung-jgsp.uni-mainz.de/; https://www.youtube.com/playlist?list=PL2B980B49047DD399

Open access journals' publication with OJS (Open Journal System)

SUMMARY: The University of Valencia uses an instance of the OJS publishing system to publish more than 50 fully open access electronic journals. This service is especially appreciated by publishers in the humanities and social sciences, where the dissemination and subject coverage of the journals have an important local component.

AREA OF ACTION: Open Science

OBJECTIVES

The objective is to publish a collection of open access journals and provide assistance to editors in order to carry out the publication workflow of the journals, solve technical problems, or disseminate the articles in search engines and bibliographic databases.

DESCRIPTION

Open access journal publishing is the so-called gold road to open access. The University of València has a commitment to the open-access movement, which is reflected in the development of the institutional repository (RODERIC) and the provision of an OJS application to manage the publishing process.

Journals in the social sciences and humanities face important challenges when going from printed to electronic format or when they begin the publishing process in an electronic environment. Usually, they are characterized by low circulation due to their focus on local themes. Editors usually work as volunteers with scarce or non-existent funding. Such editors are the staff of the University or local scientific societies. They need assistance in their tasks, both at a technical level and as best practices in the publishing process.

The service is intended to address such requirements from university editors. It is provided by the University library and the Computer Service and has three main areas of action:

- Technical assistance to produce electronic journals in open access format using the OJS application.
- Assistance to provide best practices for electronic journals.
- DOIs (Digital Objects Identifier) management. All articles are identified using DOIs.
- Dissemination of contents in search engines (Google Scholar), repository aggregators (BASE), or bibliographic databases (i.e., Dialnet on a national level).

RESULTS	REPRODUCTIBILITY
This application has been in place for 7 years. 54 open access journals are published with OJS at the University of València.	OJS is an open-source system developed by the Public Knowledge Project. Many universities around the world have already implemented this technology.

RESPONSIBLE: ojs@uv.es

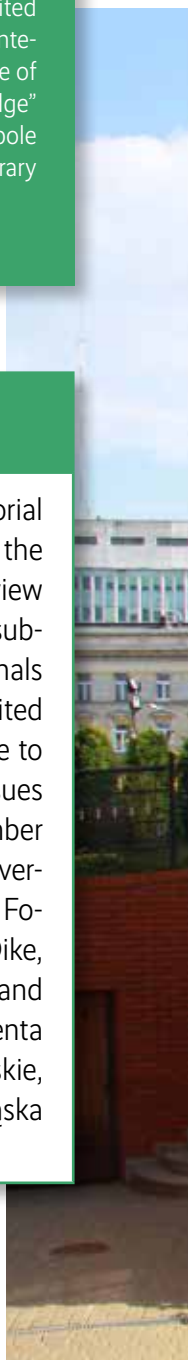
Open journal platform and research repository catalogue and database

SUMMARY: The Opole University Library has adopted systems to allow public access to university information and to some publications. The UO journals previously published in print with limited circulation for the local market have been moved online to an integrated Open Journal System platform. In addition, the catalogue of university researchers' publications database "Base of Knowledge" has been made accessible and searchable. The University of Opole Press titles are shared publicly within the Silesian Digital Library following an embargo.

AREA OF ACTION: Open Science

CZASOPISMA UNIWERSYTETU OPOLSKIEGO

OBJECTIVES	DESCRIPTION
UO has been committed to making its resources open to the academic community and to the public with due protection of copyright and authors' interests. To honour its legal obligations and increase research excellence and accessibility, the UO Library hosts a range of databases and catalogues. It also provides services and counselling to encourage open access whenever possible. The academic outputs in a variety of disciplines, particularly research reports and reviews, are hosted by the UO Open Journal Platform, instead of being distributed by commercial publishers.	Open Journal System is a free software that allows editorial boards to increase the visibility of their journals, make the submission process easy and transparent, facilitate review and revision, as well as reach a variety of readers and subscribers with publication notifications. Some UO journals that were previously published in print and with a limited circulation have been moved online, becoming available to international readers and even putting their archival issues online. With the common system and platform, the number of open access online UO journals is increasing and diversifying: Economic and Environmental Studies, Family Forum, Liturgia Sacra. Liturgia - Musica - Ars, Nomos & Dike, The Opole Studies in Administration and Law, Border and Regional Studies, Scriptura Sacra, Studia et Documenta Slavica, Studia Krytyczne/Critical Studies, Studia Miejskie, Studia Oecumenica, Studia Teologiczno-Historyczne Śląska Opolskiego, Stylistyka.



RESULTS

Thirteen journals have been operating on the platform since it was adopted in 2018. Five of them received additional funding from the Ministry of Higher Education and Science in 2019 to develop and streamline open access publishing and be indexed in a larger number of prestigious databases. Also, their indexing in the Polish rankings of journals has been increasing.

REPRODUCTIBILITY

To realize open science recommendations, the UO platform uses the Creative Commons 4.0 licence (CC-BY-NC-SA) to enable visibility and free distribution while protecting the rights of authors.

RESPONSIBLE: Dorota Wierzbicka-Próchniak
WEB OR CONTACT: biblioteka@uni.opole.pl https://bg.uni.opole.pl/

Open Museum of the University of Opole

SUMMARY: The Museum of the University of Opole is an institution open to the public free of charge, catering to students of the humanities and social sciences, hosting public events and academic conferences and exhibiting the most precious paleontological, archaeological, historical and artistic treasures in the University's possession. A part of these objects has been digitalized and made available to citizens and tourists online through webpages, social media and a mobile application.

AREA OF ACTION: Open Science

MUZEUM UNIWERSYTETU OPOLSKIEGO

OBJECTIVES

In addition to being an academic centre, the University of Opole is an important cultural institution of the region. It stores cultural objects, develops cultural memory and promotes academic culture aimed at students, citizens and tourists. For this purpose, in 2014 the former Rector Prof. Stanisław Nicieja – a historian – officially initiated the operations of the Museum of the University of Opole, which is now located in the Collegium Maius building on University Hill. The institution has made available hundreds of paleontological, archaeological, historical and artistic exhibits, organized dozens of thematic exhibitions and public events, sponsored academic conferences and open lectures, helped promote books and popularized science to anyone from schoolchildren to seniors and hobbyists.

DESCRIPTION

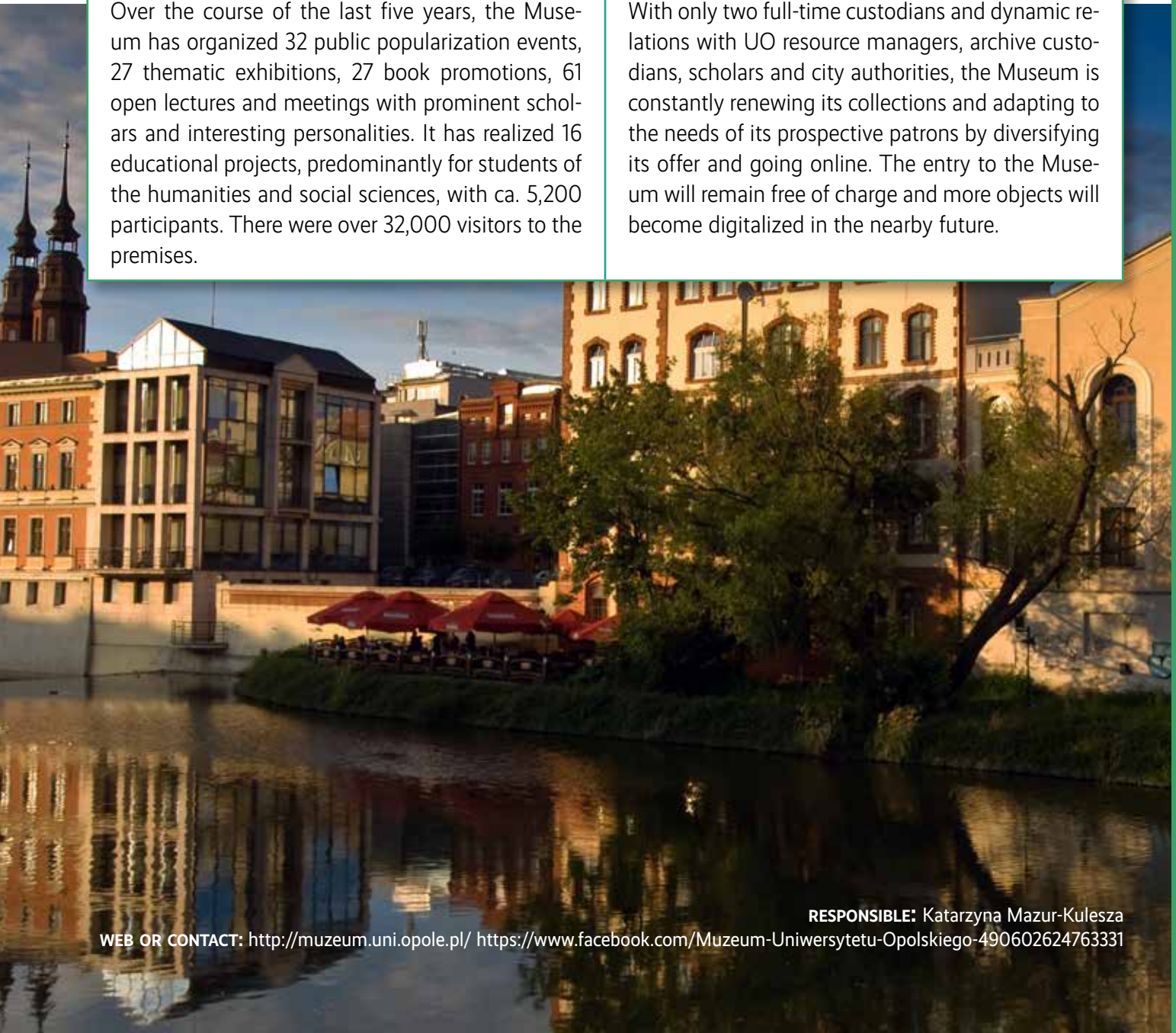
There are three permanent exhibitions: one devoted to the history of the University – "Alma Mater Opoliensis," the second to "Palaeontological Treasures of the Opole region," and the third an outdoor walk of "University Hill" with its collection of statues and architectural objects. Visitors can see historical and current insignia of the rector's office, commemorative medals for UO anniversaries, landscape paintings and portraits of UO rectors and honorary doctors. About 30% of objects of the UO Museum are available to users of the Museum's Facebook page. Numerous images and descriptions are available through catalogue publications and videos or virtual tours to experience on the website and YouTube platforms. Some resources have been digitalized and shared through the mobile application "O!polskie muzea," which is a collective project showcasing over a thousand items, localizations, links to internet pages from all Opole museums designed for citizens and tourists. City certified guides have been trained to present the exhibits in various foreign languages as well.

RESULTS

Over the course of the last five years, the Museum has organized 32 public popularization events, 27 thematic exhibitions, 27 book promotions, 61 open lectures and meetings with prominent scholars and interesting personalities. It has realized 16 educational projects, predominantly for students of the humanities and social sciences, with ca. 5,200 participants. There were over 32,000 visitors to the premises.

REPRODUCTIBILITY

With only two full-time custodians and dynamic relations with UO resource managers, archive custodians, scholars and city authorities, the Museum is constantly renewing its collections and adapting to the needs of its prospective patrons by diversifying its offer and going online. The entry to the Museum will remain free of charge and more objects will become digitalized in the nearby future.



RESPONSIBLE: Katarzyna Mazur-Kulesza
WEB OR CONTACT: http://muzeum.uni.opole.pl/ https://www.facebook.com/Muzeum-Uniwersytetu-Opolskiego-490602624763331

Open Science Curriculum

SUMMARY: At JYU open science education is being integrated into studies and curricula at an earlier stage than it was before. It is now a consistent process from the beginning of degree studies to the end of doctoral studies and beyond.

The University of Jyväskylä offers an open science curriculum for all students, researchers and university staff. The curriculum aims at exploring the advantages of open science and providing students and researchers with extensive research skills in information seeking and management, research data management, academic writing, publishing and open educational resources. A comprehensive collection of courses, consultations, workshops, and staff training is available. In addition, to support open education, all learning materials from these courses are openly available online.

AREA OF ACTION: Open Science

OBJECTIVES

Every student graduating from the University of Jyväskylä will end up having a set of comprehensive skills in and understanding of the different aspects of open science. They can use this knowledge in future research and in working life.

Open science education supports student agency and strengthens co-operation between different units at the university participating in teaching research skills, e.g., the library, the language centre, faculties.

DESCRIPTION

At the University of Jyväskylä, open science education is integrated into studies from the beginning and offered to the whole university community. Degree students are offered courses and consultation related to information seeking and using open access resources, research data management and open access publishing of master's and bachelor's theses. Many faculties have integrated these as compulsory courses in their curricula and, for others, the courses are available as optional courses. All the courses are available in Finnish and in English.

Degree students at JYU participate in workshops in systematic information seeking during their bachelor's studies. A constantly growing number of students also take a 1 credit online course in information seeking, where they complete an information seeking plan on their own research topic and learn, for example, to use open access resources. JYU was among the first universities in Finland to introduce a general course in research data management for thesis writers. The Open Science Centre offers an online course available for all degree students. In this course, students explore the different aspects of thesis data management including documentation, integrity, data security, copyright, data protection and the life cycle of research data. This includes exploring and documenting the possibilities to open and publish the data for further use. Students complete a data management plan for their thesis and learn significant skills connected to research data management.

The curriculum for doctoral students and researchers concentrates on research merits and publishing, research data management and creating a personal handbook of open science principles and practices aiming at increased visibility, improved accessibility and responsible science. Every doctoral student at the University of Jyväskylä takes a minimum of 1 ECTS credit of studies in open science. The Open Science Centre also offers thesis supervisors an online manual as well as training to support them in guiding students in open science.

JYU encourages teachers, researchers and students to open their educational materials, to publish them in the National Library of open educational resources and to use open resources. The JYU policy for open educational resources is currently under construction, and teachers are offered guidance in the process of opening and using materials.

RESULTS

Integrating open science education in curricula has increased co-operation between the different university units participating in teaching, ensuring a more consistent learning process in research skills for students. The open science curriculum has received positive feedback from teachers and students. Students continuing their doctoral studies are better prepared from the start. Results from researcher and staff training can be seen, for example, in an increase in results published in parallel to the data management process.

REPRODUCTIBILITY

Integrating open science education into studies from the start of undergraduate studies to doctoral studies and staff training enables the whole university community to grow into open science thinking. After graduation, students will be able to implement their knowledge in working life even outside of academia. An open science curriculum helps to ensure systematic teaching and skills for students. Providing open education resources in national repositories and opening the learning materials of open science courses promotes open science education and co-operation at a national level.

RESPONSIBLE: Johanna Kinnunen, Open Science Centre, johanna.t.kinnunen@jyu.fi
WEB OR CONTACT: https://openscience.jyu.fi/en/education

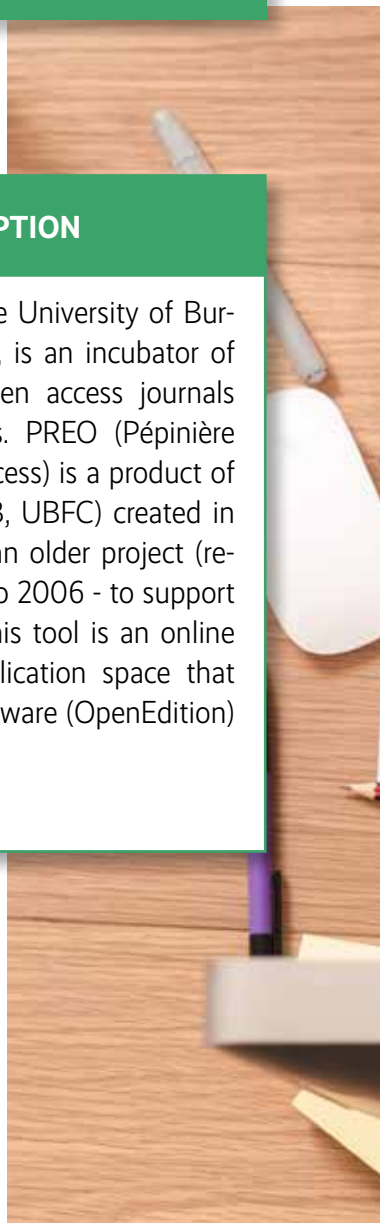
PREO

SUMMARY: PREO is an Open Access Journal Incubator. Through PREO, MSH Dijon (House of Social Science and Humanities) aims to support researchers in their editorial projects, e.g. creation in native digital format or transition from print to digital, until their eventual migration to other major platforms.

AREA OF ACTION: Open Science

PREO
Pépinière de Revues en Open Access

OBJECTIVES	DESCRIPTION
Through PREO, support is provided for: • the creation of a website dedicated to the journal; • training i n tools (Lodel; Metopes); • ISSN application; • information on editorial quality criteria for better international visibility; • referencing of the journal (Sudoc, Mir@bel, DOAJ, SHERPA-ROMEO, ...); • membership in other large-scale platforms (Persée, OpenEdition Journals); • requests for human, technical and financial resources.	PREO, incubator of the University of Burgundy Franche-Comté, is an incubator of free-of-charge and open access journals and digital collections. PREO (Pépinière de revues en Open Access) is a product of MSH Dijon (CNRS, uB, UBFC) created in 2018 - and following an older project (revuesshs) dating back to 2006 - to support publishing projects. This tool is an online and open access publication space that relies on the Lodel software (OpenEdition) and a quality charter.



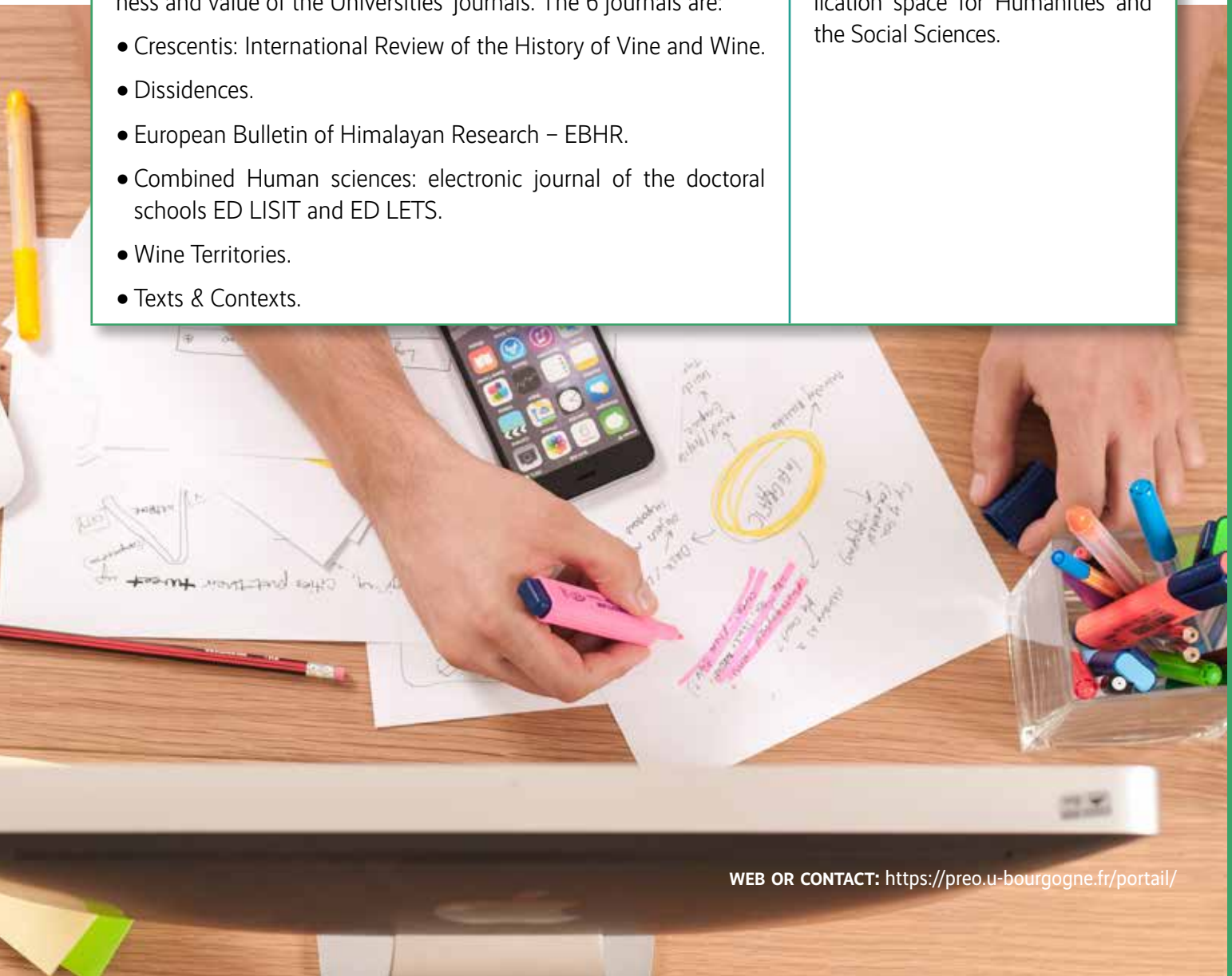
RESULTS

Under PREO, 6 journals from the University of Burgundy have been referenced in the Mir@bel platform, which aims to promote the contents of scientific journals available online and to increase awareness and value of the Universities' journals. The 6 journals are:

- Crescentis: International Review of the History of Vine and Wine.
- Dissidences.
- European Bulletin of Himalayan Research – EBHR.
- Combined Human sciences: electronic journal of the doctoral schools ED LISIT and ED LETS.
- Wine Territories.
- Texts & Contexts.

REPRODUCTIBILITY

PREO is a good example and good practice in open science as it promotes online and open access publication space for Humanities and the Social Sciences.



WEB OR CONTACT: https://preo.u-bourgogne.fr/portail/

Research in Education and Learning Innovation Archives (REALIA)

SUMMARY: Research in Education and Learning Innovation Archives is an international open publication scientific journal that belongs to the Staff Development and Learning Innovation Unit (University of Valencia). Its goal is to contribute to the knowledge of up-to-date educational experiences, educational innovations and research projects that can improve the way we teach and the way we understand teaching, and that can make us think about our teaching.

AREA OF ACTION: Science Edition

OBJECTIVES

The main aim is to contribute to open science. Many publications in the educational area require payment because a significant part of the publications belong to commercial publishers and editing expenses. The University of Valencia through SFPIE created this journal to promote debate and share knowledge about more secondary educational issues. For example, it deals with staff development, continuous teaching, and innovative educational practices that were not essential aspects in first quartile publications. In this way, this publication was a pioneer. In addition, we decided to incorporate different languages besides English, such as Spanish and Catalan.

DESCRIPTION

Although the focus is on higher education and lifelong/continuous learning, the journal also welcomes research from other relevant educational areas.

Research in Education and Learning Innovation Archives issues original and unpublished texts. As part of our open access policy, authors publishing in Research in Education and Learning Innovation Archives (REALIA) will not pay Article Processing Charges (APC).

RESULTS

REALIA publishes two issues per year, and each of them includes from 5 to 10 articles. The number of authors that have published with REALIA exceeds one hundred, coming from different countries and continents. We have created a large and quality peer reviewers' network that helps to publish quality content.

REPRODUCTIBILITY

The contents that REALIA publish are available right away and can be reproduced and used by others for their own research or to create their state of the art. REALIA uses a Creative Commons license that indicates that the articles published in our journal, unless otherwise indicated, are subject to an Attribution-NoDerivatives 4.0 International (CC BY-ND 4.0).

WEB OR CONTACT: https://www.uv.es/realia/

Self-Archiving

SUMMARY: Research conducted at the University of Jyväskylä is self-archived in the JYX institutional repository. For researchers, self-archiving is easy and simple. Researchers submit their publication data to Converis, a research information system. Additionally, we scan publication information from different databases automatically, so often the researcher doesn't need to give this information as we receive the information directly from the database and add it to Converis automatically. The same data can be exploited at JYX later. The researcher does not need to write any publishing details; all we need is that they inform us about the publication and send us the file for self-archiving, e.g., by email. This is both a process and a service for researchers. A researcher does not need to take care of the things related to self-archiving, such as publication permits of the articles, as we will investigate all the permissions and possible embargos. It is an internal process handled by professionals.

AREA OF ACTION: Open Science

OPEN ACCESS

OBJECTIVES	DESCRIPTION
The aim is to support our researchers by saving their time.	To develop this service, the recording of publications was centralized to the Open Science Centre and a self-archiving track was established from the Converis research information system to the JYX institutional repository.

RESULTS	REPRODUCTIBILITY
Self-archiving is the key process that has enabled JYU to have more than 80% of their publications published openly.	Doing research is the job of the researcher; it is not to spend a lot of time learning various systems and documenting metadata, as many might find this difficult. With this process, we save the time of the researcher and take care of any official reporting. We also make sure that the metadata of the publications is correct and of high-quality.

RESPONSIBLE: Arto Ikonen, arto.ikonen@jyu.fi
WEB OR CONTACT: https://openscience.jyu.fi/en/self-archiving

Team of Research Data Experts (Kompetenzteam Forschungsdaten)

SUMMARY: The Team of Research Data Experts advises and supports scientists in the administration, management, publication and archiving of research data as an outcome of their research projects.

AREA OF ACTION: Research data management (RDM) and Open Science

OBJECTIVES

In order to be able to offer scientists at JGU a wide range of services for research data management, the Team of Research Data Experts was founded in summer 2018. For this purpose, the services and competencies of various JGU institutions, the Unit for Research and Technology Transfer (FT), the University Library (UB), the Data Center (ZDV), and the Mainz Center for Digitality in the Humanities and Cultural Studies (mainzed) were combined. A total of four to five staff members from the above-mentioned institutions are currently active in the Team of Research Data Experts, focusing on different areas and to varying degrees.

DESCRIPTION

Team of Research Data Experts and the institutions involved offer counselling, training and infrastructures on a wide variety of RDM topics.

- Counselling.
- RDM requirements of research found ers.
- Publication of research data.
- Long term storage of data on a retrievable basis.
- FAIR data.
- Metadata standards.
- Data management plans (DMP).
- Technical RDM questions.
- Project specific RDM policies.
- Good research practice.

The Team of Research Data Experts offers regular and trainings on demand on several RDM topics such as a general RDM introduction, DMPs, GitLab etc.

Infrastructures:

- Open access repository: Gutenberg Open Science (University Library).
- Repository for historical sources: Gutenberg Capture (University Library).
- Multimedia database (University Library and Data Center).
- DOI service (University Library).
- iRODS long term archive for research data (Data Center).
- Research Data Management Organizer (RDMO) for DMP creation (Data Center).
- GitLab versioning tool (Data Center).
- Sync- and share platform (Cloud): Seafile (Data Center.

RESULTS

Service and infrastructure offered by the Team of Research Data Experts at JGU helps to make to make research data of JGU scientists findable and accessible for other researchers and also facilitates the production of technically interoperable and reusable data (FAIR data). FAIR data is a central RDM requirement of European and national research founders.

REPRODUCTIBILITY

The support of researchers in research data management is necessary, as in many cases the corresponding specialized knowledge is lacking, or the methodologies are not yet established in the scientific field. Since RDM requires expertise from different areas, such as data processing, research funding and librarianship, cooperation between the various participating institutions within the university has proven its worth.

RESPONSIBLE: Dr. Anne Vieten (Coordination), Karin Eckert, Dr. Jörg Steinkamp, Esther Reineke
WEB OR CONTACT: https://researchdata.uni-mainz.de/; forschungsdaten@uni-mainz.de

Tools *"Where to publish" / "Where not to publish"*

SUMMARY: We present two tools to advise researchers about open access policy, open access deals and quality of open journal, to avoid potential scams.

AREA OF ACTION: Open Science

OBJECTIVES

The aim of these tools is to advise UV researchers about the journals in their area.

Specific goals:

- To offer actualized information about the open access policy of the journal, with its quality indicator, the APC data, etc. All the information researchers need to choose the journal where to publish ("Where to publish").
- To help health sciences researchers in the prevention of editorial fraud by providing them a specific tool to identify predatory journals in their field ("Where not to publish").

DESCRIPTION

The tool "Where to publish" shows all these data regarding one journal:

- Title.
- Position in the category (JCR or SJR).
- ISSN.
- Impact Factor or SJR.
- Quartile.
- Open Access (is the journal OA Gold?).
- APC: Shows how much the researcher must pay. Also, the tool shows if the UV has a big deal or an off-set deal with the publisher, and their conditions.
- License: open access policy of the journal in Sherpa/Romeo.
- Position in other categories.

Information is completely actualized. A team reviews the data 3 times a year -information about APC- and once a year – data from JCR and SJR –.

The UV offers the tool "Where to publish" to researchers in the areas of Health Sciences, Social Sciences, Basic Sciences and Psychology.

The data, mainly taken from JCR-Clarivate, are protected by copyright and can only be consulted within the scope of the UV.

"Where not to publish" is a guide to help health researchers in avoiding predatory open journals. It has a list of potential fraud health journals, e.g. journals selected from blacklists and other sources, and a group of sources to measure the quality and reliability of the journals. "Where not to publish" offers detailed information about every journal and a view of the open predatory journals in health sciences

More information about this tool: https://www.uv.es/hemesalud/airtable_english.pdf.

RESULTS	REPRODUCTIBILITY
"Where to publish" is a very useful tool for researchers and is completely amortized by libraries. Every week 3/4 UV researchers ask librarians about the quality journals in their areas and the open access policy. This tool saves time and frustration for libraries and researchers. "Where not to publish" has helped health researchers to avoid an editorial fraud. This work received an award in Barcelona in 2019 in a health library meeting.	Both tools can be technologically replicated in other high education organizations. It's possible to use the same or other quality criteria, journals etc., depending on the funders' demands, the open access deals and every singularity regarding open access journals of each country.

RESPONSIBLE: The tools are the result of teamwork: people who work at research support in the libraries of the UV, coreai@uv.es

WEB OR CONTACT: https://investsbd.blogs.uv.es/on-publicar2
https://investsbd.blogs.uv.es/on-publicar/fraus-editorials/,
https://airtable.com/shrrVPFpjf9oMLzdz/tblRP5wUJfU83lbv5/viwf1pEaWN773Eb9r?backgroundColor=green/

UNIPA for Open Access

SUMMARY: The University of Palermo has successfully adopted strategies to promote open access and open science through a devoted working group, tailored communication initiatives, training and support services to junior and senior researchers, exchange of good practices, and tools useful for authors and users.

AREA OF ACTION: Open Science

Università degli Studi di Palermo

OBJECTIVES

- Promoting the principles of open access.
- Enhancing the knowledge of related good practices, social and legal foundations, and institutional duties.
- Training and updating of librarians and users.
- Monitoring the correct procedures for the free consultation of the products stored in the UniPa Institutional Research Information System (IRIS).
- Creating useful tools for authors and users in general.

DESCRIPTION

In 2004 UNIPA subscribed to the "Declaration of Messina," supporting the "Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities," to engage new strategies for dissemination of research through the internet. Then, in 2009, the University established its first institutional repository of research results, including PhD dissertations. UNIPA confirmed its commitment to open access by signing the 2014-2018 Road Map together with numerous other universities and research institutions, which provided some priority lines of action for the development of institutional policies in Italy.

In 2015 the University established IRIS - Institutional Research Information System - aimed to store, search, and enhance the results of research. This repository is connected with LoginMIUR, the storage of the Italian Ministry of University and Research, so authors can upload their products onto both platforms at once. Further initiatives included the establishment of a working group for managing the repository and the open access and participation of UNIPA in AISA (Italian Association Open Science) as an institutional member. Moreover, from 2020, thanks to a partnership CARE - CRUI, authors within UNIPA can publish, with some editors, their articles in open access, without paying the APC (Article Processing Charge).

UNIPA also promotes open access through specific events, disseminating good practices and creating useful tools for authors and users.

RESULTS	REPRODUCTIBILITY
Open access publications 109,576 research outputs in the institutional repository, 23,778 open (23,091 open access files, 687 partially open, 104 "embargo"). Source: Report UNIPA for Open Access 2020.	The actions promoted by the Sector in charge for Research Services and Dissemination of Scientific knowledge and the Library System and Historical Archive Service at UNIPA helped to overcome the concerns of researchers about the quality of open access publications, the degree of protectability of intellectual products made available in open mode and, above all, about the potential of Open Access products for bibliometric purposes and for increasing the visibility of the research teams concerned. Moreover, the Sector is working on replicable activities to increase the awareness of the academic community of the importance of Open Science to engage citizens and show the potential of an open approach to science communication.

RESPONSIBLE: Maria Stella Castiglia, mariastella.castiglia@unipa.it; Vittorio Tranchina, vittorio.tranchina@unipa.it
WEB OR CONTACT: serviziricerca@unipa.it
https://www.unipa.it/biblioteche/en/open-access/-https://www.unipa.it/biblioteche/open-access/UniPA-oa/

HUMAN CAPITAL GOOD PRACTICES

Ada Lovelace Talent Development

SUMMARY: Ada Lovelace Talent Development offers mentoring programmes at the Johannes Gutenberg University Mainz (JGU) for female PhDs and Junior Postdocs as well as for female Senior Postdocs and Junior principal investigators.

AREA OF ACTION: Human capital

OBJECTIVES

The project aims at attracting girls and young women to careers in Science, Technology, Engineering and Mathematics (STEM) and showing what is possible with them. It wants to break down traditional role models and strengthen the positive image of STEM professions. Key elements of the project are:

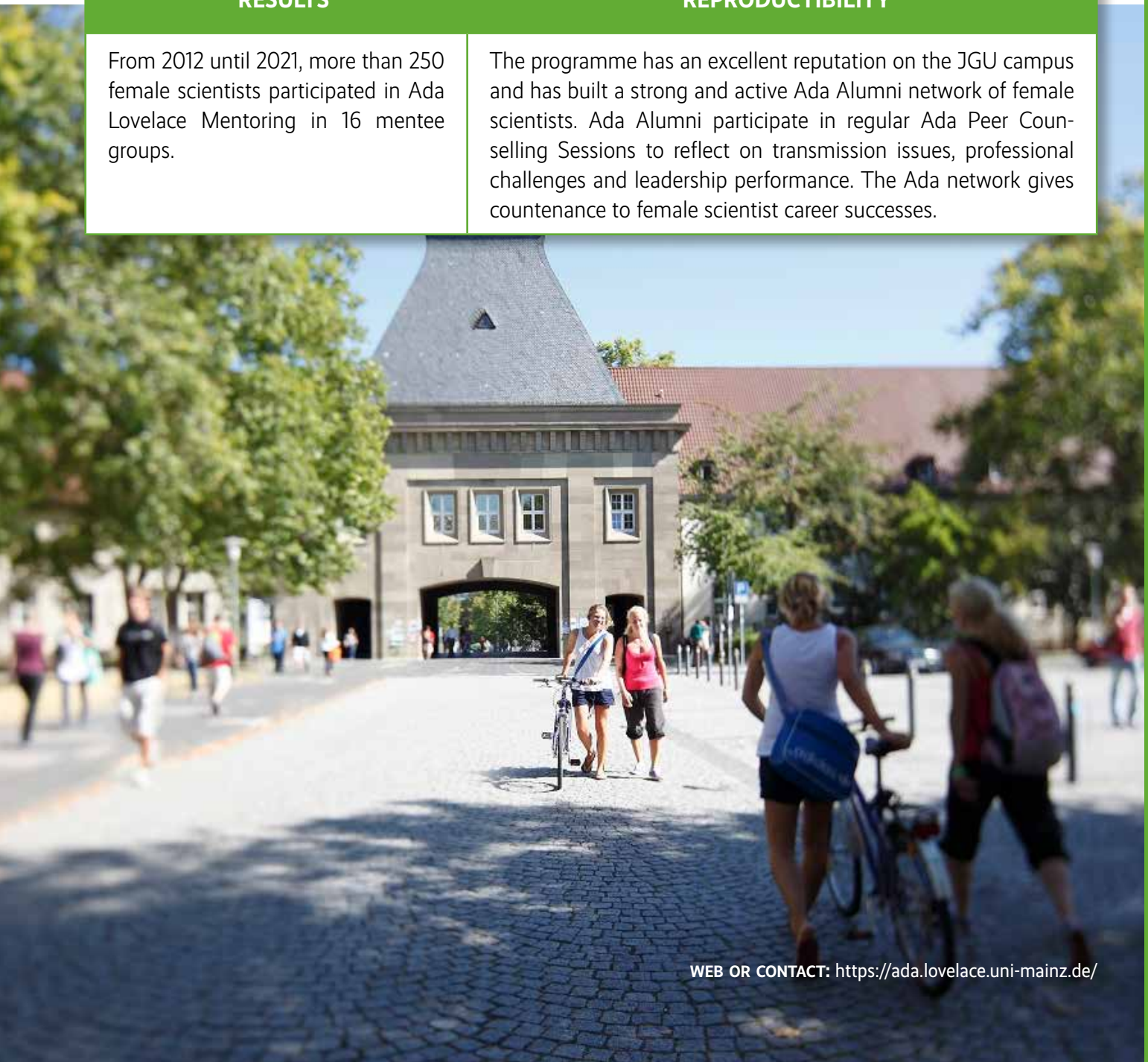
- Equal opportunities.
- Promoting young talent.
- Boosting self-confidence.
- Reducing preconceptions.
- Improving the STEM image.
- Involving diverse target groups.
- Building a strong female alumni network.

DESCRIPTION

Ada at JGU has developed out of the Ada Lovelace Project by the Rhineland-Palatinate Competence Centre for Women in STEM, funded by the European Social Fund as well as the Rhineland-Palatinate Ministry of Women's Affairs and the Ministry of Science. The programme is named after Ada Lovelace, who developed the first programming language in history and is thus considered the first female programmer ever. Since 2017, the programme has been perpetuated by three STEM faculties on the JGU campus and the Helmholtz Institute Mainz.

There are two main programmes: the "Career Orientation" programme, for early career women, and the "Pro Academia" programme, for female Senior Postdocs and Junior principal investigators. The 1-to-1 mentoring is embedded in a mentee group coaching process entourage to boost self-reflection as well as team building. In addition, both programmes offer individual coaching, workshops, networking, excursions, individual profiling and support for conflicts

RESULTS	REPRODUCTIBILITY
From 2012 until 2021, more than 250 female scientists participated in Ada Lovelace Mentoring in 16 mentee groups.	The programme has an excellent reputation on the JGU campus and has built a strong and active Ada Alumni network of female scientists. Ada Alumni participate in regular Ada Peer Counselling Sessions to reflect on transmission issues, professional challenges and leadership performance. The Ada network gives countenance to female scientist career successes.



WEB OR CONTACT: https://ada.lovelace.uni-mainz.de/

Aid Programme for the Inclusion of Teachers

SUMMARY: The University of Valencia (UV) has developed an aid programme aimed at teachers with disabilities, especially to purchase expensive material. The programme also addresses reductions in teaching dedication.

AREA OF ACTION: Human capital

OBJECTIVES

The programme aims at encouraging the inclusion of teaching and research staff with disabilities at the University of Valencia, through grants that allow improving the quality of their job, aimed at offsetting the additional costs incurred by teachers with disabilities to a degree equal to or greater than 33%.

DESCRIPTION

The measures provided in the regulations are preferably aimed at teachers with a full-time dedication regime, except for some specific cases. The measures are applied in general as long as the disability of the teaching staff is accredited.

There are different sub-programmes within this programme:

- Financial aid
  - ↳ Acquisition of specific products necessary for the performance of their functions in an optimal way that are defined in their job position, provided that these are not their own products, to facilitate personal autonomy or support products that can be financed by the Prevention and Environment Service.
  - ↳ Justified expenses for transport, catering and accommodation of support staff hired by teachers with disabilities, to carry out accompanying and assistance tasks during trips made outside the University of Valencia to carry out research tasks. The granting of this type of aid does not include aid for travelling to one's job or for travel derived from teaching and research tasks that one usually carries out at the facilities of the University of Valencia.
- Teaching aid: Staff affected by a disability that limits their teaching function, to a degree equal to or greater than 33%, may request a reduction in their teaching dedication

RESULTS

Financial aid: Budget allocated over these three years has been able to cover one hundred percent of the demands made by the teaching staff.

	Budget	Number of aids	Total amount
Course 2019-2020	7.157 €	8	6.936,93
Course 2020-2021	7.157 €	5	4.760,38
Course 2021-2022	7.157 €	2	2.390,96

Reductions in teaching due to disabilities: Teachers who requested a reduction in teaching due to accredited disability, after evaluation by a commission, obtained reductions ranging from 10 to 60 hours per academic year, depending on their teaching hours assigned by the department.

	TOTAL HOURS REDUCTION	TEACHING STAFF WITH REDUCTION
Course 2019-2020	1.660	47
Course 2020-2021	1.880	53
Course 2021-2022	1.880	52

REPRODUCTIBILITY

The University of Valencia was the first in Spain to regulate measures to promote the inclusion of teaching and research staff. It developed and approved its first regulations in 2007, later replaced by the current Regulation of Measures for the integration of teaching and research staff with disabilities at the University of Valencia (General Study), approved in March 2013.

Since the 2008/2009 academic year, the described programme of attention to teachers has been developed. In 2013, the Spanish Committee of Representatives of People with Disabilities at the state level (CERMI) awarded the UV, in recognition of its initiatives for the inclusion of people with disabilities, becoming a benchmark for other universities. Since then, the UV has been asked for information, training and advice from other universities in order to create their own regulations to favour the inclusion of their teaching staff. However, only five Spanish universities have implemented a programme like this, since the financial and personal resources required to make it function optimally are considerable.

WEB OR CONTACT: https://www.uv.es/uvweb/servei-recursos-humans-pdi/ca/servei-recursos-humans-pdi-1285902628698.html
https://www.uv.es/uvdiscapacitat/ca/uvdiscapacitat.html

Alumni Club

SUMMARY: The University of Latvia Alumni Club was founded to promote a more socially active and engaging student community, and creating stronger bonds between students and other university members.

AREA OF ACTION: Science communication and human capital

OBJECTIVES

The organization unites graduates of the University of Latvia who have gained studies at the University in order to:

- Create and develop an environment for the personal development and education of graduates, exchange of information and experience, formation of professional and personal contacts.
- Enrich LU with graduates' knowledge, experience and resources.
- It would promote the development of the University of Latvia and promote its progress towards excellence, increasing the value of the University of Latvia diploma and promoting the growth of the country as a whole.

DESCRIPTION

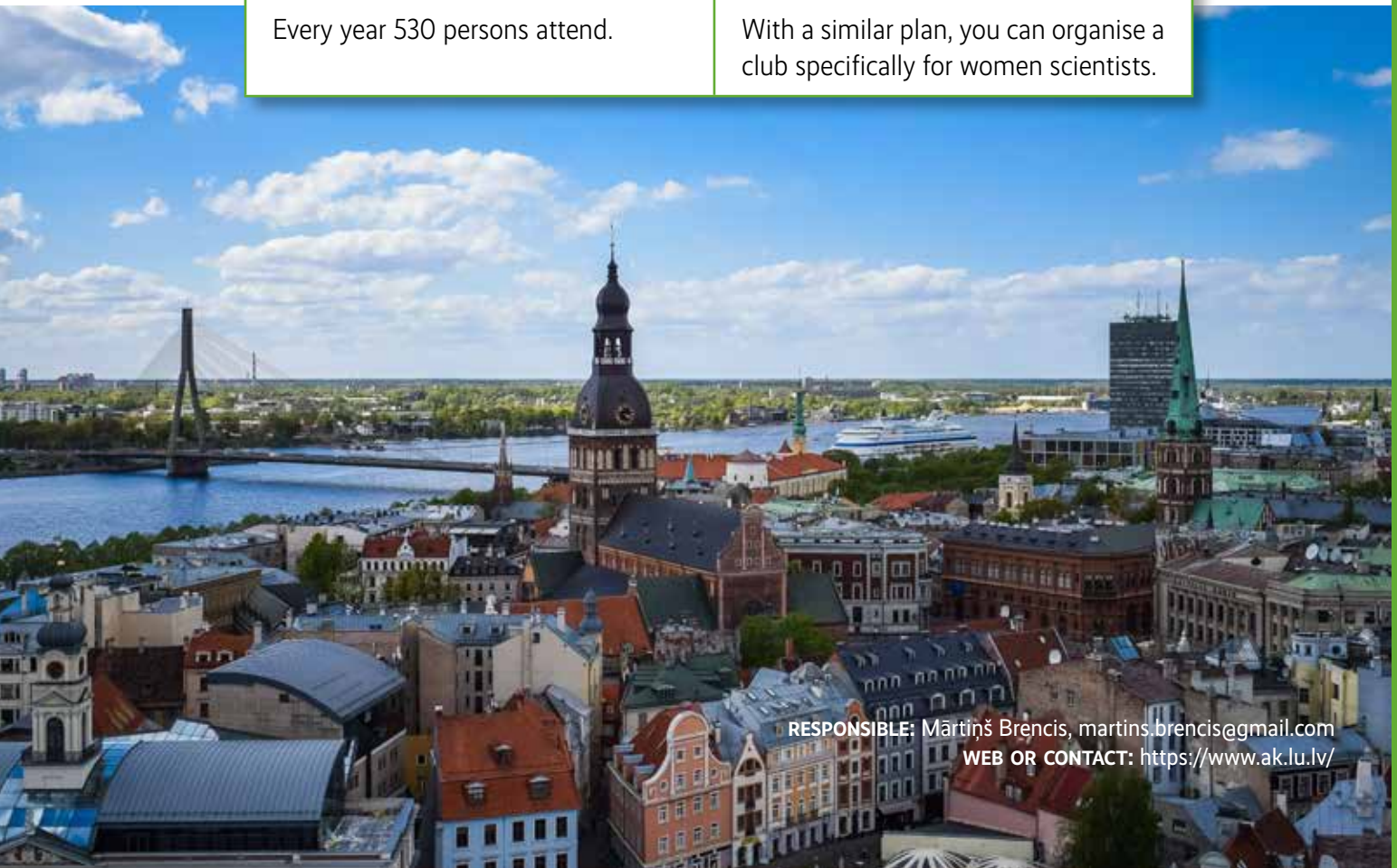
Detailed description of the actions taken to develop the good practice.

The idea of establishing the University of Latvia Alumni Club in the spring of 2015 came to us – a group of like-minded people – graduates and students of various faculties of the University of Latvia, who were and still are active participants in student organizations. We were united by the feeling that the LU diploma has not only the knowledge acquired during the studies, but it also has added value - friends gained during the studies, acquaintances who have studied, contacts with the teaching staff and with the management of the University of Latvia. And, of course, we had the experience of being socially active and engaging.

That is why we created the Alumni Club of the University of Latvia, so that graduates who have something to say and have something to give both to each other and to the University of Latvia would have the opportunity to do so.

Several activities are organised such as alumni evenings, joint work in Botanical garden, or celebrating the Alumni day. The Alumni Day of the University of Latvia is celebrated in the middle of October annual traditional environmental cleaning stock. The alumni evenings are graduate talking evenings scheduled as evenings of experience and memory, for instance, about their professional experience, growth, gains from study and life lessons. Over the course of the evening, participants will be encouraged to meet and discuss a topic.

RESULTS	REPRODUCTIBILITY
Every year 530 persons attend.	With a similar plan, you can organise a club specifically for women scientists.



RESPONSIBLE: Mārtiņš Brencis, martins.brencis@gmail.com
WEB OR CONTACT: https://www.ak.lu.lv/

CRCT (Le Congé pour Recherche ou Conversion Thématique)

SUMMARY: The CRCT (Leave for Research or Thematic Conversion) allows teacher-researchers to benefit from a period of exemption from teaching and administrative tasks.

AREA OF ACTION: Human capital

OBJECTIVES	DESCRIPTION
The Congé pour Recherches ou Conversions Thématiques (CRCT) allows a teacher-researcher to devote himself or herself to research for a period of either six or twelve months. The programme aims at helping researchers to deepen, begin or finalize research projects.	University professors and senior lecturers may benefit from research or thematic conversions for a period of 6 or 12 months for each period of 6 years spent in an active teaching position. The 6-month CRCT is awarded at the end of a three-year period of activity and a one-year CRCT is awarded at the end of a six-year period of activity. A part of the CRCT is attributed at the national level by the CNU (National Universities Council), another part by the establishment. The University of Burgundy alone has control over the number of CRCTs granted by the institution.

RESULTS	REPRODUCTIBILITY
At the University of Burgundy, the Board of Directors set the institution's CRCT quota at 6 semesters for the 2020-2021 academic year. For this same 2020/2021 time period, 8 CRCT semesters were granted in total, 4 by the CNU (National Universities Council) and 4 by the University. For the 2021-2022 time period, a total of 19 CRCTs were granted, 17 by the University of Burgundy, and 2 by the CNU.	CRCT is a good example and good practice in human capital, partly because it participates in the internationalization of research. Indeed, the Ministry's circular tells institutions to give priority to CRCT projects that are part of an international context, aimed at preparing an application to the ERC (European Research Council), or at preparing an international mobility.

RESPONSIBLE: Laurence Bronner, Laurence.Bronner@u-bourgogne.fr

Diverse and preventive well-being services for members of the University community

SUMMARY: Developing more diverse well-being services and providing them more comprehensively to all members of JYU's work community and not only to employees.

AREA OF ACTION: Human capital

OBJECTIVES

The Wellbeing Development Project 2019-2021, through versatile pilot experiments, put together a broader toolbox for well-being at work to support the well-being of members of the University's work community throughout their working lives, focusing on preventive well-being. In addition, efforts were made to renew the communication of the service package for well-being and competence (intranet).

DESCRIPTION

In total, more than 10 different and different-scale experiments were carried out in the development project, most of which targeted mental well-being services and the development of one's own well-being skills. The most extensive experiment was teacher well-being coaching with 40 participants, which included three Firstbeat measurements and a personal trainer-led small group coaching pilot that focused on physical well-being.

As a result of the project, the renewed Uno Learning and Wellbeing section was published in May 2021. The section brings together the up-to-date University's competence and well-being service offering, and provides guidelines related to the themes of the section. In practice, the section now includes both the services that have existed in the past and the news ones that were selected through successful experiments in the development project. These new services include:

- Staff Compass: an inhouse produced online programme based on self-study in the development of well-being skills and complementary coach-led group coaching;
- Auntie: an individual mental well-being coaching;
- The Finnish Institute of Occupational Health's online coaching: mainly self-studying focusing on the themes of self-management, time and work management and recovery;
- Physical well-being-oriented sports coaching led by a personal trainer;

- Well-being webinars are regularly arranged, and the recordings and materials are made available for the JYU work community.

The renewed section and majority of the service offerings are targeted to all members of the University's work community, including grant researchers, unpaid trainees, etc. However, some services, such as occupational health care, are limited to employees only. The availability of services in both Finnish and English are also invested more comprehensively within the available offering options and resources.

RESULTS

A staff well-being survey, which is conducted every two years, just ended in the fall of 2021. The results of the survey show that our staff find their work meaningful and interesting. High grades were also given to competence and renewal. However, we have lived in very exceptional conditions for almost two years due to the coronavirus – its effects on well-being are experienced very individually and it could be seen in the staff survey as well. It is a matter that the University management pays attention to, in order to find ways to reduce the burden of work.

The development project itself, and the experiments carried out within the framework of the project, mainly received positive feedback. The intention was and is to provide the University community a basis for developing their own well-being skills, and then, in the end, it is up to themselves how to utilize these resources. Efforts have also been made to develop the well-being skills of supervisors, and hopefully this will help to ensure that well-being concerns are addressed and that ways of solving potential challenges are considered together between the supervisor and the employee.

REPRODUCTIBILITY

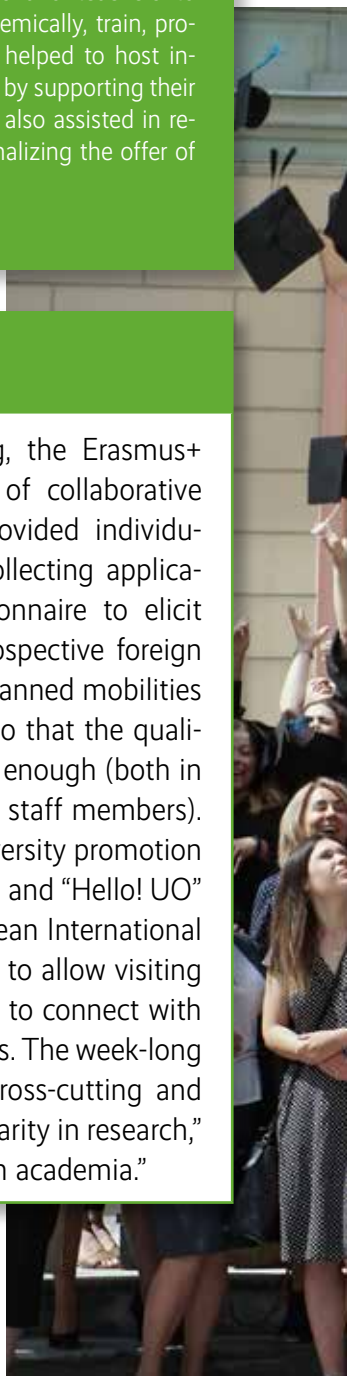
It might be challenging to implement exactly the same or very similar well-being services in other universities. However, the most important message is that it is worth trying different actions for the well-being of the staff, as it already lifts the general mood when it is noticed that the employer cares. Which well-being service or development function works best in which organization can only be achieved by experimenting. However, even the smallest action for well-being can have a significant positive impact on both the individual and the work community.

RESPONSIBLE: : Saara Minkkinen, saara.e.minkkinen@jyu.fi; Niina Karstunen, niina.p.karstunen@jyu.fi

HELLO! UO with Erasmus+ Beyond Europe

SUMMARY: The University of Opole (UO) Erasmus+ unit has enabled researchers, administrators and teachers to travel beyond Europe to exchange academically, train, promote UO and network. Hello! UO has helped to host incoming students, academics and visitors by supporting their mobilities and organizing events. It has also assisted in recruiting foreign students and internationalizing the offer of courses and programmes of studies.

AREA OF ACTION: Human capital



OBJECTIVES

Erasmus+ Key Action 107 is extensively used by the UO Erasmus+ unit to maximize the possibilities for academic exchange, particularly in enabling researchers and teachers to travel beyond Europe, mainly to the US, Australia, Central Asia, the Middle East, Taiwan/China, the Balkan states and Central Africa. Hello! UO aims to bring scholars from those partner universities to conferences in Opole, such as to Central European International Weeks each April (prior to the pandemic). The actions are coordinated to be an investment in university human resources. They are also treated as an incubator for funding aimed at staff trainings and support, internationalization initiatives and ideas for developing English-language courses and even full graduate programmes of studies, to accommodate the needs of international students who come from some of these countries.

DESCRIPTION

To maximize the scope of funding, the Erasmus+ office has developed a procedure of collaborative KA 107 application writing and provided individual researchers with templates for collecting application-relevant information. A questionnaire to elicit adequate and precise data from prospective foreign hosts was constructed, so that the planned mobilities are not only granted funding but also that the quality of the visitors' experience be high enough (both in the cases of outgoing and incoming staff members). Some of the visits were used for university promotion activities under the "Study in Poland" and "Hello! UO" initiatives. The annual Central European International Weeks take place each April in order to allow visiting scholars to showcase their work and to connect with like-minded domestic research groups. The week-long events were devoted to debating cross-cutting and stimulating issues, e.g. "Interdisciplinarity in research," "Shortage studies" and "Prospering in academia."

RESULTS

The number of partners and participants in the KA 107 actions has been increasing (until the pandemic) from 38 participants cooperating with 6 partner institutions in 6 countries in 2015 to 70 participants (12 partner institutions in 7 countries) in 2016, to 146 participants (50 partner institutions in 21 countries) in 2017. 2018 and 2019 stabilized the numbers at this level and allowed faculty and administrators to choose the most promising directions and partners.

REPRODUCTIBILITY

Despite being a regional university, UO has had one of the highest ratios of mobility for universities in Poland and treats "internationalization at home" as its strategic objective. It is also of prime importance to increase human capital, upscale skills and allow international networking. Contacts with partner universities beyond Europe make UO an increasingly cosmopolitan academic hub in the region and mainstreams intercultural sensitivity.

RESPONSIBLE: Halina Palmer-Pierstrak, hpalmer@uni.opole.pl; Erasmus office, erasmus@uni.opole.pl
WEB OR CONTACT: http://hello.uni.opole.pl/

JGU Leadership

SUMMARY: Leadership at Johannes Gutenberg University Mainz (JGU) is understood as one of the key factors in ensuring that people work together successfully in an organization as diverse as JGU. It has been promoted in different management and strategic areas of JGU, contributing to professionalisation and excellence.

AREA OF ACTION: Science communication and human capital

OBJECTIVES

- To promote managers/people's confidence in their leadership roles, enabling them to ensure more efficient use of resources and increase quality.
- To strengthen employees' motivation and experience towards leadership.

DESCRIPTION

Leadership contributes to the commitment and job satisfaction of the members of the University, the commitment to JGU as an employer, the goal-oriented management of processes and ultimately the performance of employees and teams. Leadership is an important factor when it comes to the management and strategic development of the University.

For more than 10 years, the topic of leadership has been a central concern at JGU: from the implementation of the "JGU Leadership" project, which was funded by the *Stifterverband*, to diverse interfaces with strategic topics such as the excellence strategy, the promotion of young academics/the junior staff pact, the professionalization of recruitment processes (in appointments and other personnel selection processes), diversity and equality, and much more.

The leadership idea – as an ongoing process – and the leadership guidelines are implemented in a variety of projects and activities. As part of the strategic development of JGU, leadership aspects have been incorporated into the excellence strategy, the promotion of young scientists (e.g., in the implementation of the federal-state programme for the promotion of young scientists), the auditing of diversity and equality activities and the seal of approval of the European Commission "HR Excellence in Research" (HRS4R), as well as the recruitment of new scientific personnel (appointments, onboarding, especially of international scientists).

Central leadership tools such as the annual interview were introduced and continuously evaluated and further developed. The range of services for managers at JGU is constantly being expanded and includes continuing education and leadership programmes, consulting, coaching, team development, support for recruiting, etc. Extensive information material supports managers in their work, e.g. the leadership toolbox, the leadership newsletter, handouts on personnel selection, etc.

RESULTS	REPRODUCTIBILITY
By now, more than 200 professors from all faculties and almost 280 managers in administration and third space attended the leadership programme. Approximately up to 80 people in leadership roles participate yearly in further trainings and 50 managers use the consulting option to find solutions for their occupational challenges.	Sharing the ideas and knowledge of our activities can support other universities to start their own organizational development process or help to add ideas to ongoing processes.

WEB OR CONTACT: https://www.personalentwicklung.uni-mainz.de/jgu-leadership/

Job opportunities in EuroAxess

SUMMARY: Part of the research staff vacancies that go out to tender are published on this European portal, with the aim of attracting foreign talent to the University of Valencia (UV).

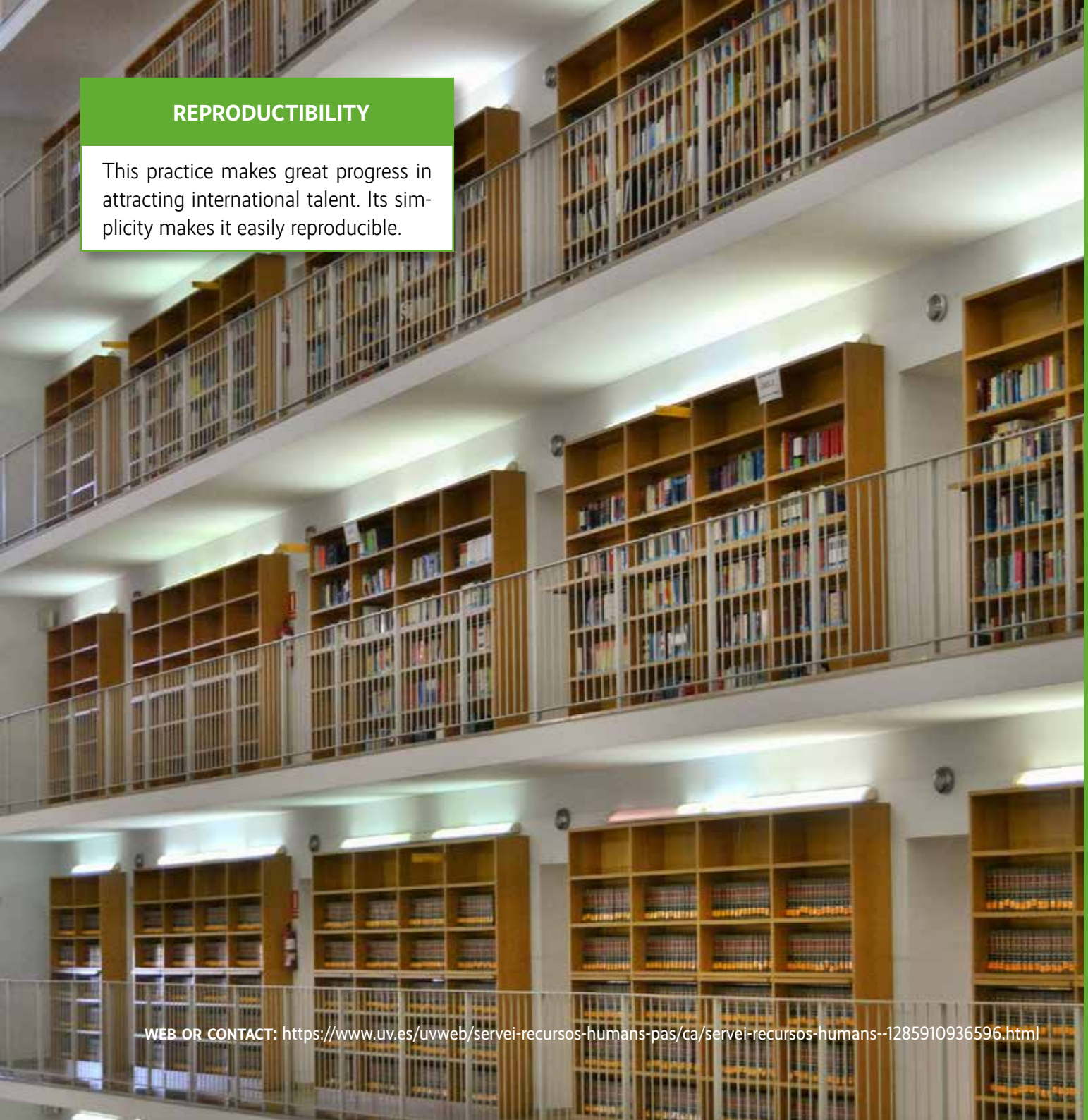
AREA OF ACTION: Human capital

OBJECTIVES	DESCRIPTION
The objectives of publication on the Euroaxess website were developed in the meetings to maintain the HRS4R seal. The intention was, and still is, that at least the calls that come from European funds be publicized through a research website and be recognized throughout the European research area, with the aim of attracting talent from other countries to our research activity.	Since the last quarter of 2019, the calls that are financed by European funds have been translated into English and published, in addition to the Official Gazette of the Valencian Community and on the website of the Human Resources Service (PAS, in Spanish), on the Euroaxess website as well, so that research personnel from other countries could apply themselves. Also, in order to facilitate participation in these calls from anywhere on the planet, an application called GENPI has been made available to interested persons, which allows them to request participating in the calls through the UV computer application.

RESULTS

If we compare the data from 2019, the year in which we began to publish in Euroaxess, in 2021 there was a slight increase in the number of foreigners hired.

Year	Number of foreign personnel hired	Observations	Total amount
2019	65		6.936,93
2020	59	The year of the COVID pandemic	4.760,38
2021	79	Until October 1, 2021	2.390,96



REPRODUCTIBILITY

This practice makes great progress in attracting international talent. Its simplicity makes it easily reproducible.

WEB OR CONTACT: https://www.uv.es/uvweb/servei-recursos-humans-pas/ca/servei-recursos-humans--1285910936596.html

Medical Simulation Centres

SUMMARY: Since 2018, UO has received around 14 million PLN to develop its multi-profile medical simulation centre to train faculty, technical staff and students – future doctors and nurses – with simulation methods and with the aid of the newest technological solutions and training equipment. The ongoing investments resulted in the organization of several rounds of trainings for simulation instructors. A set of guidelines and module scenarios for future re-use both for high-fidelity and low-fidelity medical procedure simulations were developed.

AREA OF ACTION: Human capital

OBJECTIVES

The need for constant upscaling of skills and competences of medical practitioners was addressed by the University of Opole commissioning multi-profile medical simulation centres. The simulation method has been proven effective in training the faculty, instructors and technical staff of the Faculty of Medicine and the Faculty of Health Sciences, but foremost for the ever-better training of university medical students – future health service providers in a variety of specialties. The grants obtained by the University were used to furnish and equip the simulation facilities, to provide supplies of materials and recruit standardized patients. The funding was also used to organize several rounds of trainings for simulation instructors. A set of guidelines and module scenarios for future re-use for high-fidelity and low-fidelity medical procedure simulations, as well as trainings in psychological techniques, were developed.

DESCRIPTION

The trainings for staff and students were examples of investments in human capital. Current and future medical practitioners and healthcare providers were given opportunities to train in new techniques and procedures to be even more professional and competent in their jobs and for graduates to be competitive in the job market. Most trainings were certified and could be included in the medicine and nursing students' personal professional portfolios. Some trainings were offered as elective courses or self-study opportunities for pre-service/in-service development. The guidelines and training module scenarios are piloted and enhanced during the funding period of each academic year.

RESULTS	REPRODUCTIBILITY
The funding covered the functioning and development of the medical simulation centres in the years 2018-2028. The centres are available for students and staff in most specialties in medicine and nursing. So far, 8 full-time technical staff have been fully trained and by the end of 2021 at least 50 doctors and 20 nurses will have been trained in seven thematic domains. Over 330 students have been trained through simulation by commissioned instructors from the emergency units, police forces and fire departments. The project has allowed the development of 20 medical simulation scenarios and 11 nursing simulation scenarios, but dozens of scenarios have also been developed by individual faculty members during courses. Sixteen (16) individuals cooperate regularly with the centre to act as standardized patients/victims in the high-fidelity scenarios.	The need to minimize risk and act professionally and ethically in the medical sector is of utmost importance, and the medical simulation centres are to ensure this. Equal access to facilities is ensured via open entry for faculty and transparent management. Since the simulation centre has been one of the youngest in Poland, it can use best practices from other locations and develop internal procedures for cost-minimization.

RESPONSIBLE: Jacek Jóźwiak, jacek.jozwiak@uni.opole.pl; Agnieszka Kuras, agnieszka.kuras@uni.opole.pl
WEB OR CONTACT: http://im.wmnoz.uni.opole.pl/wieloprofilowe-centrum-symulacji-medycznych/, http://im.wmnoz.uni.opole.pl/aktualnosci-wcsm/

Mentorship Project

SUMMARY: The qualification of faculty teaching competences in higher education is nowadays an important aim pursued by academic institutions in order to innovate teaching and learning. The University of Palermo (UNIPA) Mentorship Project is a voluntary training programme delivered by professors, who become mentors of other colleagues, with the aim of helping to increase the quality of their courses

AREA OF ACTION: Science communication and human capital

OBJECTIVES

- To identify and use tools to improve the quality and the effectiveness of teaching and learning activities.
- To experiment with new teaching practices on a voluntary basis.

DESCRIPTION

The UNIPA Mentorship Project, launched in 2013, is based on three types of activities:

1. Mentoring
2. Training/events/workshops
3. Formation of a community

- *Mentoring*: Each teacher who adheres to the programme is assigned to two mentors who have the role of helping him/her to improve the quality of her/his teaching. Mentors, who are identified among programme participants, are responsible for:
  - ↳ attending, annually, at least two lessons of the teacher;
  - ↳ meeting the students to discuss the teaching activity carried out by the teacher and submitting to them specific forms to detect their opinions;
  - ↳ analysing questionnaires to identify strengths and possible areas of improvement;

↳ discussing with the teacher doubts and strategies;

↳ proposing and sharing joint improvement actions to be carried out the following year.

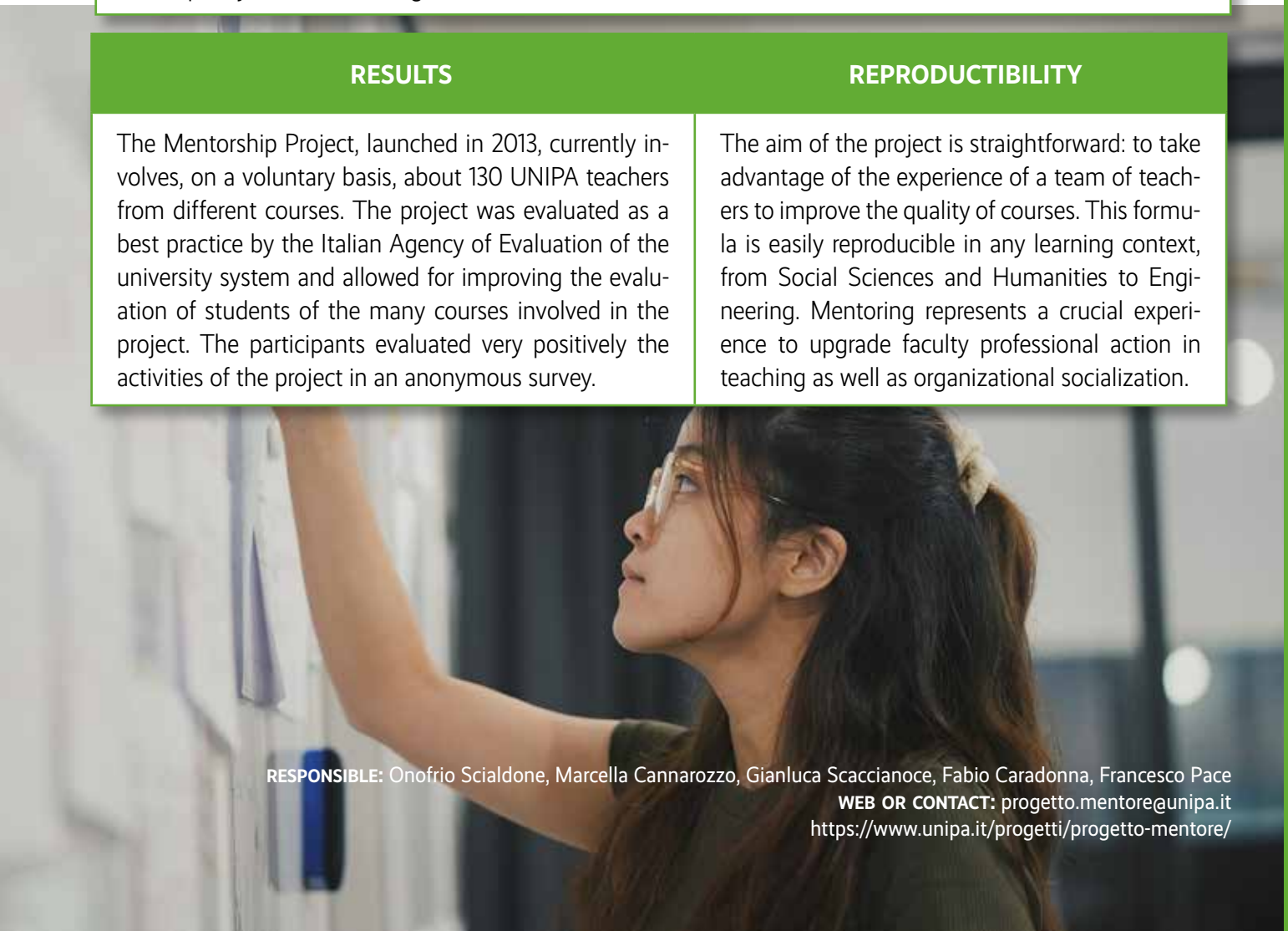
- *Training/events/workshops*: Each year about 10 events are organized with the aim of lending insights into many topics related to academic teaching, such as the role of the teacher, teaching techniques and methodologies, innovative ways of teaching, ethics, etc. Moreover, each year a residential workshop of three days is organized with foreign experts.
- *Community*: The project allows for constituting a community of academics that work together to improve the quality of their teaching.

RESULTS

The Mentorship Project, launched in 2013, currently involves, on a voluntary basis, about 130 UNIPA teachers from different courses. The project was evaluated as a best practice by the Italian Agency of Evaluation of the university system and allowed for improving the evaluation of students of the many courses involved in the project. The participants evaluated very positively the activities of the project in an anonymous survey.

REPRODUCTIBILITY

The aim of the project is straightforward: to take advantage of the experience of a team of teachers to improve the quality of courses. This formula is easily reproducible in any learning context, from Social Sciences and Humanities to Engineering. Mentoring represents a crucial experience to upgrade faculty professional action in teaching as well as organizational socialization.



RESPONSIBLE: Onofrio Scialdone, Marcella Cannarozzo, Gianluca Scaccianoce, Fabio Caradonna, Francesco Pace
WEB OR CONTACT: progetto.mentore@unipa.it
https://www.unipa.it/progetti/progetto-mentore/

Mobility Funding and the International Visiting Fellow Programme

SUMMARY: The University of Jyväskylä (JYU) opened the call for applications for funding allocated to international mobility. Researchers with employment contracts and grant researchers (research career stages 1-4) at JYU are eligible to apply for mobility funding to cover expenses incurred by research visits abroad. Funding will be granted for a research visit of one to six months (up to 180 days). The International Visiting Fellow programme connects researchers globally to JYU for a research period of up to three months with a grant

AREA OF ACTION: Science communication and human capital

OBJECTIVES

Strengthening international collaboration and promoting the internationalization of researcher career and doctoral training.

DESCRIPTION

The Mobility programme and the International Visiting Fellow programme are essential parts of the JYU Research Development Programme to put the focus on the researcher and her/his research environment. The Mobility programme was used to open university level calls twice a year in such a way that researchers could plan their mobility period for the following term or academic year. Since 2018, the faculties have operated similar programmes. However, in 2021, JYU renewed the Mobility programme and in the spring of 2021 decided to open the university level mobility call to fight against the effects of the COVID-19 restrictions and limitations to mobility. The call attracted 38 applications and 12 researchers were already able to organize their mobility period during 2021

The International Visiting Fellow Programme at the university level was organized the first time in 2021. Some of the faculties had already similar programmes in 2019-2020. The idea is that the Fellow candidate agrees on a research plan with a JYU host to co-operate in their research jointly for one to three months' time. The Fellow candidate includes an invitation letter from the research host to the IVF application. There are a few criteria in selecting the Fellow, e.g. the excellence of the research plan and the geographical coverage of the applicants. The post-doctoral researchers at any level of their career are welcome to participate in the programme. Similarly, both such researchers who already had steady connections to JYU researchers and those who wanted to start co-operation were welcome to the programme.

The mobility programmes require the co-operation of many services within the university:

- The Financial services need to allocate funding for the programme and handle transfers of funding and grants according to the cost claims and funding decisions.
- Communications gives advice for marketing the programme.
- HR Services take care of the regulations related to recruitment, taxation or immigration as well as contacting the Fellows with instructions and guidance.
- Assistant services take care of the practices of the Departments.
- Research and Innovation services coordinate the IVF programme, prepare evaluations for the Research Council and Rector to enable them to decide on the grants for the Fellows.

RESULTS	REPRODUCTIBILITY
In Finland, the Ministry of Education and Culture expects that universities support international mobility, and the Ministry requires that the number of mobility periods both by JYU researchers abroad and visitors to JYU are reported yearly. Even before COVID-19, the number of periods has been decreasing. During 2020 very few researchers were able to experience mobility due to the very strict limitations for travelling, and a very similar situation continued in 2021. The International Visiting Fellow Programme received 76 applications and 63 Fellows were granted a Fellowship to visit JYU during the second half of 2021. The length of the period varies from one to three months and on average lasts two months. The direct increase in mobility therefore is over 126 researcher months. The Ministry has given instructions that international connections to a number of specific geographical locations should be strengthened. These are China, India, the USA and African countries. The applications for the IVF programme arrived from 38 countries also representing the focus areas that the Ministry encouraged. Three Fellows from FORTHEM universities Palermo and Valencia were invited to the University of Jyväskylä.	This is a good practice to support international collaboration and staff mobility, as we aim to increase the mobility between Alliance partner universities. The University of Jyväskylä is planning to organize the International Visiting Fellow Programme yearly (2021-2024) and constantly evaluates the impact of the programme.

RESPONSIBLE: Timo Taskinen

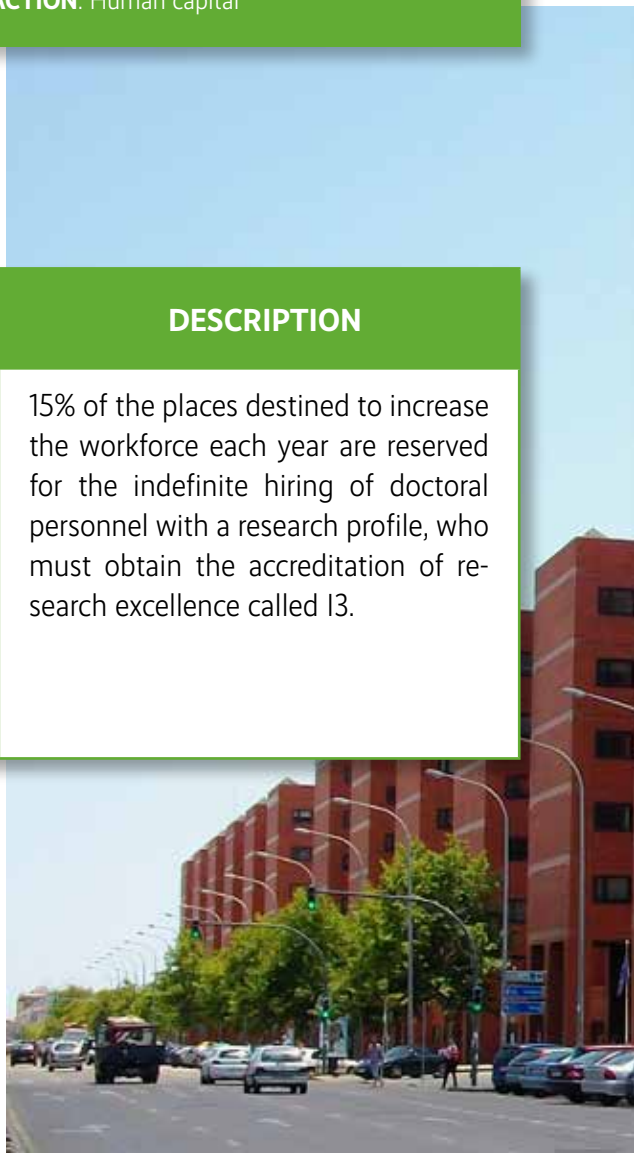
WEB OR CONTACT: https://www.jyu.fi/en/university/organisation-and-management/research-council/funding/mobility-funding

Recruitment and Stabilization of PhD Research Staff

SUMMARY: In 2006, the UV designed a programme for the indefinite hiring of researchers benefiting from State Programmes for the incorporation of doctors of excellence. With variations derived from the national applicable regulations that have been issued since then, the Programme is currently maintained through the provision of a reserve of 15% of staff positions for the indefinite hiring of these and other researchers of excellence.

AREA OF ACTION: Human capital

OBJECTIVES	DESCRIPTION
International excellence requires the development of active policies for scientific improvement that increase the research potential of existing groups. These policies are specified in the recruitment of talent and in the renewal and availability of highly qualified human resources for knowledge generation activities. For this reason, it is necessary to implement policies aimed at the retention of talent, in which the Framework Programme for the recruitment and stabilization of PhD research staff of the University of Valencia can be framed.	15% of the places destined to increase the workforce each year are reserved for the indefinite hiring of doctoral personnel with a research profile, who must obtain the accreditation of research excellence called I3.



RESULTS	REPRODUCTIBILITY
Since the launch of this programme, more than one hundred researchers have become part of the institution's staff, which has made it possible to retain young talent with a strong component of internationalization in their research activity.	Some data serve to illustrate the impact and relevance of this measure in terms of research activity. While 34.6% of the PhD assistants have been Principal Investigator of research actions (Contracts or Research Projects) during the period that they maintained this type of relationship, the percentage rose to 81.5% in the case of excellence PhDs. If we apply this parameter not only to the period of doctor/researcher assistants, but to their entire relationship with the institution, the levels rise to 49.7% in the case of those who started their relationship as a doctoral assistant, compared to 93.3% who did it as researchers.

RESPONSIBLE: Human Resources Service PDI
WEB OR CONTACT: https://www.uv.es/sgeneral/Reglamentacio/Doc/Investigacio/B27.pdf

Renewed Goal Discussions

SUMMARY: Goal discussions are an integral part of the University of Jyväskylä's (JYU) management and operating culture. The purpose of the goal discussion is to ensure that each University member has an opportunity to regularly sit down to think about their role, goals and continuous development in relation to the University community and surrounding society.

AREA OF ACTION: Human capital

OBJECTIVES

Linking goal discussions even more strongly to the University's strategic goals.

DESCRIPTION

The new goal discussion model includes starting the goal discussion round with a unit staff meeting, where management communicates the unit-level goals for the coming period (3-5 key points) and the related competence development needs (3-5). These goals are taken to the individual level in personal goal discussions so that the supervisor and the employee work together to determine what it means for the employee to reach the unit-level goals. At the end of the whole round, based on a documented issue of goal discussions, a summary is made at the unit level and its main points are communicated to the staff again.

In 2020, JYU's new goal discussion model (formerly the development discussion model) was introduced. At the same time, the documentation of goal discussions was transferred to the new HR system Mepco, which brought significantly more flexibility to conducting goal discussions from a systems perspective. Unit-specific training was held for supervisors, especially related to goal setting and competence development. In 2021, not all units had full-scale goal discussions, as there was a very short time from the previous year's discussions. JYU has a recommendation for annual goal discussions, and starting in 2022 this rhythm will certainly be reached, in addition to which it is recommended to combine goal and work plan discussions for academic staff. The approach also includes a recommendation for regular one-to-one discussions to monitor the achievement of objectives on a regular basis.

RESULTS	REPRODUCTIBILITY
The number of goal discussions has increased, and supervisors are more competent and prepared to have goal discussions. There is an increased focus on setting realistic personal goals that support the unit's goals. The perceived importance of goal discussions has grown, and this development will hopefully be further strengthened in the coming years.	When working well, such an approach is useful and effective from both an employer and employee perspective, as it can combine organizational and employee goals and thus ensure that everyone is performing in a motivated manner toward a common goal.

RESPONSIBLE: Saara Minkkinen, saara.e.minkkinen@jyu.fi

Mobility Funding and the International Visiting Fellow Programme

SUMMARY: The Gutenberg Academy is an institution that was founded in 2006 to promote the best young researchers and artists of the Johannes Gutenberg University Mainz (JGU).

AREA OF ACTION: Human capital

GUTENBERG AKADEMIE

OBJECTIVES

The Gutenberg Academy (GA) has set itself the task of supporting excellent doctoral candidates and artists from all departments of JGU in their dissertation projects and assisting them in their personal and professional development. In addition to providing financial support for dissertation projects, it not only promotes interdisciplinary exchange among excellent young scholars (junior members) and established scholars of the University (senior members and associate members), but also establishes contact with former JGU members (alumni and alumnae of the GA) and with people and career networks far from the University through special support programmes and events.

DESCRIPTION

The Gutenberg Academy supports up to 25 of JGU's best young researchers and young artists in the development of their professional careers in the Arts and Sciences. The Gutenberg Academy provides possibilities for exchange with outstanding researchers and artists.

Interdisciplinary forum: The Gutenberg Academy provides an interdisciplinary forum to maintain a continuous exchange of interdisciplinary scientific information. The Academy's unique status results from the association of excellent young scientists who are admitted to the Academy as fellows (junior members) and excellent scientists who are already established at the University (senior members). Both groups come from different scientific fields of research and are able to benefit from each other by gaining a multi-perspective view of their respective work in one particular subject area. Free from constraints that govern academic work at the University as a whole, the Academy allows for a reclassification and re-contextualization of expert knowledge.

The Gutenberg Academy provides both junior and senior members the possibility to work with outstanding scholars from varying disciplines within the University on their particular research topics, as well as on general questions of scientific, academic and scholarly relevance through a variety of events and programmes (e.g., round table, network meetings and weekends as well as study trips for junior members. Associate Members (tenure-track professors of JGU) as well as the former junior and senior members of the Academy also participate in these events.

In this way, the Academy creates a platform for networking within the University that extends beyond departmental boundaries and thus promotes the identification of its members with the University as a whole.

Advancement of young scholars: Activities to promote the Academy's young research talents encompass three dimensions:

1. Internal mentoring by one of the Academy's senior members.
2. External mentoring by a well-known academic or public figure outside of the University (e.g., qualified experts from the university community, government and administration, business and industry, mainstream society, science, as well as academia).
3. Financial assistance within the context of the dissertation projects of the junior members.

The Gutenberg Academy's mentoring programme also encourages junior members to reflect on their personal standing and development in the field of science, as well as in society in general. Based on professional goals or scientific interest, junior members choose the appropriate mentors. Issues, topics and areas of interest are analysed and discussed between the mentors and mentees. This gives the junior members access to informal knowledge and other fields of activity far away from the University. In this way, they benefit from the experience, skills and contacts of the mentors and develop both professionally and personally through lively exchange. They gain an understanding of the respective industries and access to people and networks that are usually not easy to reach (e.g., high-ranking politicians). This opens the possibility for members to continually redefine their goals by providing them access to different viewpoints and perspectives.

The Academy also funds activities and material resources of junior members that support the successful completion of their dissertations and increase their standing within the scientific community.

Networking: Networking within the scientific community is a factor that should not be underestimated in its importance for the development of a scientific career. Not only does the Gutenberg Academy's mentoring programme ensure the differentiation and extension of the University's network of outstanding researchers from different generations, but it also enables junior members to gain insight into fields and have interaction with others that would otherwise not be possible.

The networking opportunity among the junior members themselves remains, in particular, a primary element of the Academy that continues to be a benefit even after active membership has ended.

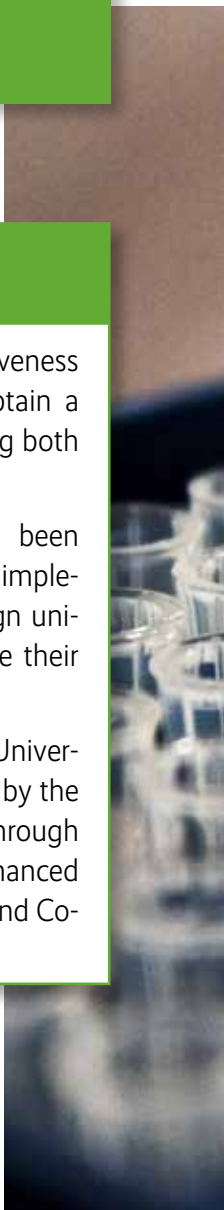
RESULTS	REPRODUCTIBILITY
According to data collected in October 2021, since the founding of the GA, a total of 148 excellent young scientists (junior members) have been supported by the Academy and interdisciplinary exchange with 58 excellent scientists (senior members) and 69 external mentors has been facilitated. Since 2018, 10 scientists with tenure perspectives have been admitted to the Academy as associate members.	The GA's special support programmes provide financial and non-material support for early career researchers. In addition to financial means for the completion of their dissertation, they are given the opportunity to exchange interdisciplinary ideas far from the University and to develop personally and professionally at the highest level.

RESPONSIBLE: https://www.gutenberg-academy.uni-mainz.de/

Recruitment and Stabilization of PhD Research Staff

SUMMARY: The University of Palermo (UNIPA) has increasingly invested in the international perspective of its doctoral courses, both ensuring collaboration with other European organizations and reserving positions to foreign PhD students. Furthermore, the University is boosting academic/non-academic cooperation by enhancing the participation of companies in PhD programmes though co-funding and/or internships.

AREA OF ACTION: Human capital



OBJECTIVES	DESCRIPTION
• To increase the competitiveness of UNIPA doctoral training offered at European and international levels. • To foster PhD multidisciplinary training. • To consolidate the University mission in the complexity of the current scenario.	UNIPA policies are addressed to increase the attractiveness of its PhD programmes for foreign graduates, to obtain a more international and intercultural system, concerning both teaching and doctoral students enrolled. Moreover, international doctoral programmes have been promoted, being distinguished by the definition and implementation of joint supervision agreements with foreign universities, so as to allow doctoral students to complete their training abroad. As it concerns the attraction of external resources, the University was also the recipient of PhD scholarships funded by the Sicilian Region and from the national government through a Call for innovative company-oriented doctorates, financed with the Structural Funds and with the Development and Cohesion Fund.

RESULTS

In 2020, the results achieved were:

- 23 active PhD courses.
- 86 out of 560 students enrolled in doctoral courses were foreign graduates.
- 16 international PhD programmes were run.
- 30 new cooperation agreements for PhD joint supervision were drawn up with organizations from Spain, UK, France, Germania, Russia, Mexico, Tunisia, Switzerland, Denmark, Belgium, Serbia.
- 18 PhD grants funded by the Sicilian Region and 26 funded by the Italian Ministry for University and Research.

REPRODUCTIBILITY

The positive assessment from the Italian National Agency for the Evaluation of Universities (ANVUR) confirmed the appropriateness of the choice to optimize the management of research training and support activities for PhD courses and the commitment of the human resources concerned, improving quality and maximising the efforts to attract external resources. New investments, higher design capacity and further promotion activities of UNIPA PhD courses are envisaged in the near future.

RESPONSIBLE: Francesco Lo Piccolo, francesco.lopiccolo@unipa.it; Massimo Priolo, carmelo.priolo@unipa.it
WEB OR CONTACT: https://www.unipa.it/didattica/dottorati/

Training seminars for PhD students in the framework of the European Charter and Code for Researchers

SUMMARY: The University of Palermo (UNIPA) is one of the first 40 European institutions that took part from the very beginning in the project 'HRS4R: Human Resources Strategy for Researchers Incorporating the Charter & Code.' In March 2010 the HR logo of the European Commission was awarded for the progress made in HR strategy for researchers.

The interdisciplinary training of PhD students carried out on a yearly basis is a core part of HRS4R strategy for UNIPA, which has elaborated a Young Researchers Action Plan specifically targeted at young researchers.

AREA OF ACTION: Human capital

Università degli Studi di Palermo

OBJECTIVES

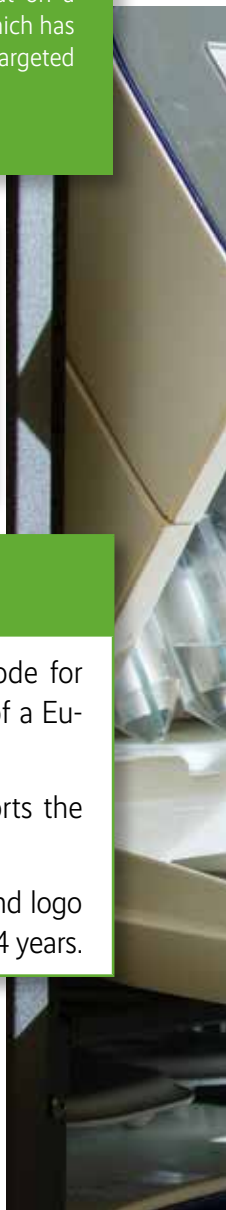
- To involve young researchers in the University's activities.
- To raise awareness of their role and responsibilities within the academic community.
- To expand their skills and competences beyond the disciplinary boundaries.

DESCRIPTION

More than 1000 European institutions have already subscribed to the "European Charter and Code for Researchers." The charter is a basic document to drive European institutions towards the creation of a European Research Area as an open and clear job market for researchers.

The project "Human Resources Strategy for Researchers Incorporating the Charter & Code" supports the implementation of the Charter using a bottom-up approach.

The project goes through 5 steps: a) internal analysis; b) action plan; c) evaluation of the action plan and logo "HR Excellence in Research"; d) internal evaluation after 2 years; e) external evaluation from the EC after 4 years.



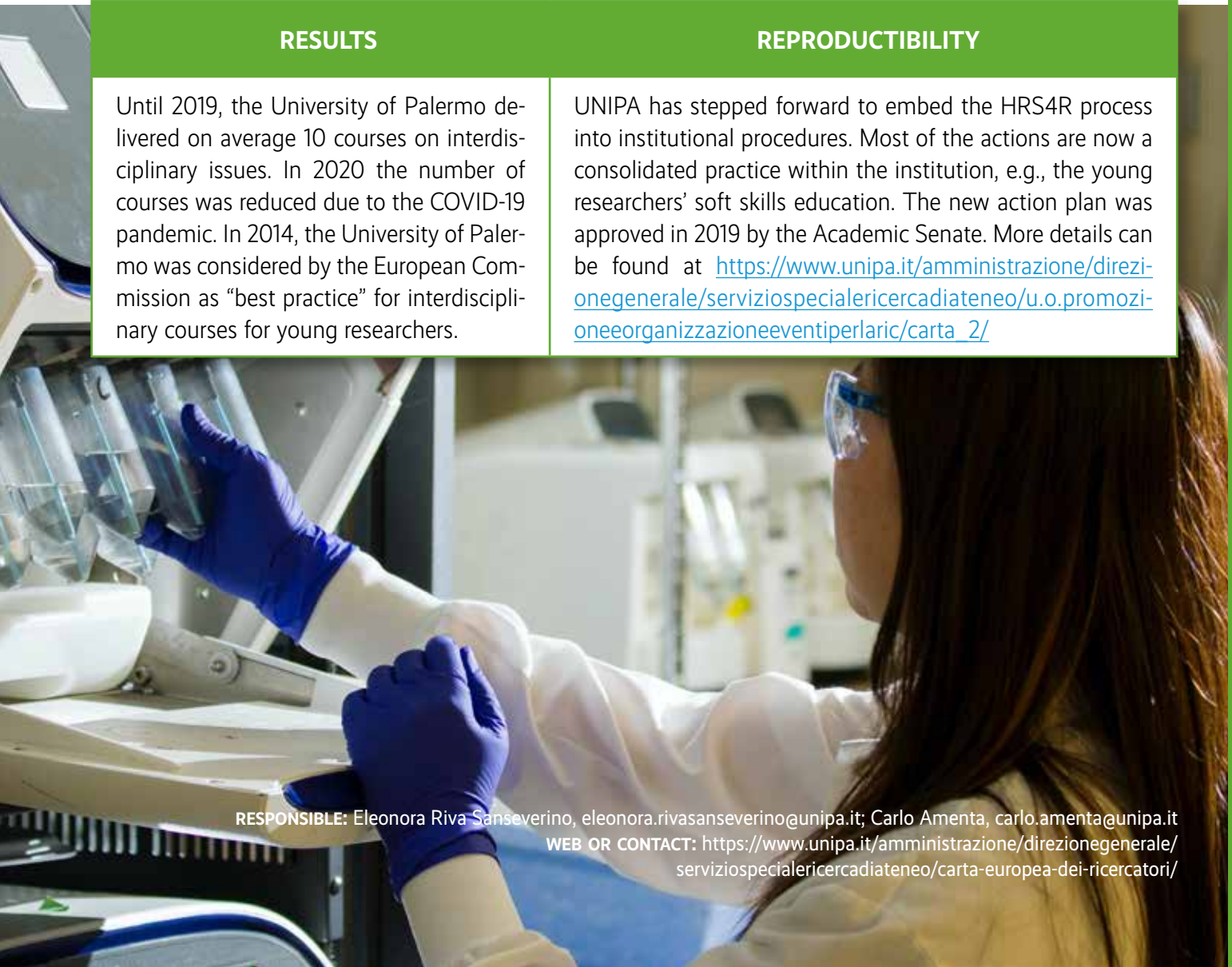
In the framework of HRS4R, a cycle of seminars targeted at PhD students (on average, 30 per seminar) is organized each year on cross-cutting issues such as: how to publish their own work, how to write a research paper, how to advocate their rights, ethics in research, the review process, EU funding for research and international mobility, patenting, science communication and entrepreneurship. Participation in the seminars awards credits to the PhDs attending them.

RESULTS

Until 2019, the University of Palermo delivered on average 10 courses on interdisciplinary issues. In 2020 the number of courses was reduced due to the COVID-19 pandemic. In 2014, the University of Palermo was considered by the European Commission as "best practice" for interdisciplinary courses for young researchers.

REPRODUCTIBILITY

UNIPA has stepped forward to embed the HRS4R process into institutional procedures. Most of the actions are now a consolidated practice within the institution, e.g., the young researchers' soft skills education. The new action plan was approved in 2019 by the Academic Senate. More details can be found at https://www.unipa.it/amministrazione/direzionegenerale/serviziospecialericercadiateneo/u.o.promozioneeorganizzazioneeventiperlaric/carta_2/



RESPONSIBLE: Eleonora Riva Sanseverino, eleonora.rivasanseverino@unipa.it; Carlo Amenta, carlo.amenta@unipa.it
WEB OR CONTACT: https://www.unipa.it/amministrazione/direzionegenerale/serviziospecialericercadiateneo/carta-europea-dei-ricercatori/

University Corridors for Refugees UNICORE 3.0

SUMMARY: UNICORE 3.0 is promoted by 24 Italian universities with the support of UNHCR, the Italian Ministry of Foreign Affairs and International Cooperation, Caritas Italiana, Diaconia Valdese, Centro Astalli and other partners. This programme aims to promote education opportunities for refugees.

AREA OF ACTION: Human capital

OBJECTIVES

UNICORE 3.0 aims to increase opportunities for refugees currently residing in Ethiopia to continue their higher education in Italy.

DESCRIPTION

The project, now in its third edition, offers refugees residing in Ethiopia the opportunity to arrive in Italy in a regular and safe way in order to continue their studies.

This is in line with the objective UNHCR to strengthen entry channels for refugees and to reach enrolment rates in higher education programmes of 15% in countries of first asylum and third world countries.

The University of Palermo (UNIPA) is one of the twenty-four Italian universities that offer refugee students the opportunity to continue their academic careers in Italy choosing between six degree courses:

- ↳ Business and Economic Sciences – curriculum “Entrepreneurship and Management”
- ↳ Complex Administrations and Organization Science – curriculum “Public Management”
- ↳ Economic and Financial Sciences – curriculum “Economic and Financial Analysis”
- ↳ Electronics Engineering
- ↳ International Relations
- ↳ Management Engineering

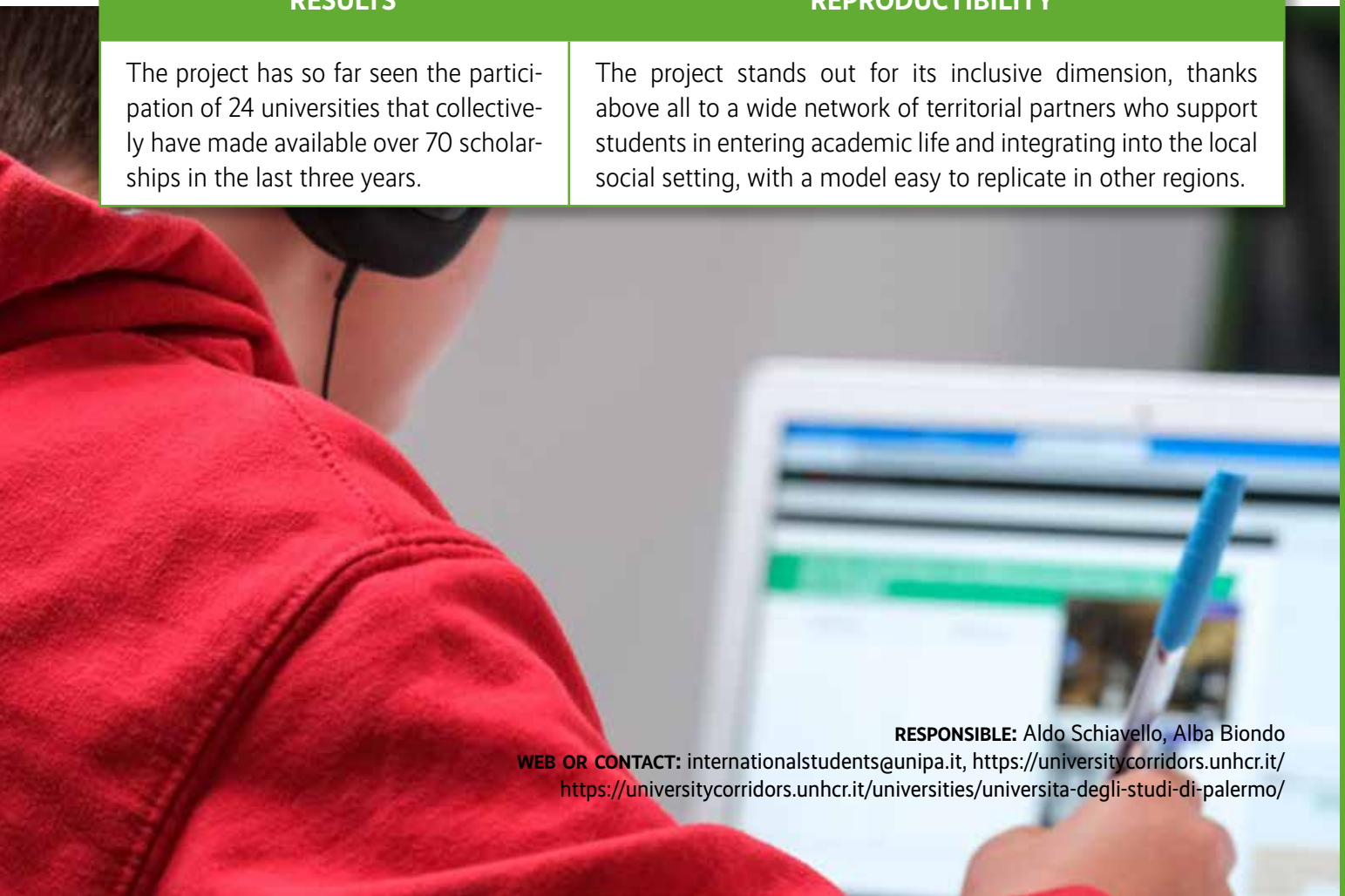
↳ Mediterranean Food Science and Technology

↳ Tourism Systems and Hospitality Management

Students, who have been selected on the basis of merit and recognition through a public selection, are exempt from paying tuition fees and receive financial support for plane tickets and visa-related expenses, as well as a study grant to help them during their stay in Italy.

The University of Palermo is supported in the project by 3 local partners: Caritas Diocesana di Palermo, Centro Diaconale - Istituto Valdese, Centro Astalli Palermo.

RESULTS	REPRODUCTIBILITY
The project has so far seen the participation of 24 universities that collectively have made available over 70 scholarships in the last three years.	The project stands out for its inclusive dimension, thanks above all to a wide network of territorial partners who support students in entering academic life and integrating into the local social setting, with a model easy to replicate in other regions.



RESPONSIBLE: Aldo Schiavello, Alba Biondo
WEB OR CONTACT: internationalstudents@unipa.it, https://universitycorridors.unhcr.it/
https://universitycorridors.unhcr.it/universities/universita-degli-studi-di-palermo/

University of Valencia (UV) Talent Attraction Programme

SUMMARY: The UV programme for researchers in training and post-doctoral studies that seeks to attract talent through its own funds.

AREA OF ACTION: Human capital

OBJECTIVES

International excellence requires the development of active policies for scientific improvement that increase the research potential of existing groups. These policies are specified in the recruitment of talent and in the renewal and availability of highly qualified human resources for knowledge generation activities.

In order to promote excellence and quality research, adapt and improve the resources allocated to research activity and promote the transfer of knowledge, the University of Valencia established the subprogramme "Attraction of Talent" within the framework of the Own Grant Programme to the Investigation of the Vice-Rectorate of Investigation. The aforementioned subprogramme includes grants for the training of research personnel of a predoctoral and postdoctoral nature.

These calls are in accordance with the principles established in the European Charter for Researchers and the Code of Conduct for hiring researchers (EEE/2005/251/CE), which refers to the training of researchers in the European Research Area, as well as in the case of predoctoral grants, Royal Decree 103/2019, of March 1, which approves the Statute of predoctoral research staff in training (BOE 03/15/2019).

DESCRIPTION

The calls include 20 grants for hiring research personnel in training of a predoctoral nature, for the completion of the doctoral thesis for a maximum period of 48 months.

The postdoctoral call is intended to award 12 grants for hiring personnel with a doctorate degree for a period of one year, with the aim of completing their training and strengthening their internationalization. It includes two modalities. The first is for postdoctoral personnel who have completed their pre-doctoral training at the University of Valencia, with the aim of developing a research project at a university or research centre based outside of Spain and relevant in the international arena, in collaboration with a research group of the University of Valencia. The second modality is destined for the incorporation of research personnel who have carried out at least 12 months of postdoctoral stays of an international nature for the development of a research project in a research group of the University of Valencia.

RESULTS	REPRODUCTIBILITY
The aforementioned calls are intended to guarantee the complementarity of the Talent Attraction Programme with similar programmes of the state administration and the regional administration, thereby increasing the number of research personnel available to the institution each year.	The design of the calls maximizes the number of grants obtained and the efficient use of one's own resources, by preventing the waiver of similar grants that could not be covered with staff from the institution.

RESPONSIBLE: Investigation Management Service
WEB OR CONTACT: https://www.uv.es/uvweb/universitat/ca/recerca-transferencia/financament/programa-ajudes-investigacio-uv/contractacio-personal-investigador-1285946452508.html

Upscaling human capital through educational projects and cross-border collaborations (Poland-Czech Republic)

SUMMARY: Since 2014, the University of Opole (UO) has been implementing projects under the framework of the Interreg V-A Czech Republic-Poland Programme. UO has co-operated with the Hradec Králové University, the University of Ostrava, and the Palacky University Olomouc to enable steady institutional support and enhanced opportunities that allow UO graduates to be competitive on the labour market in border regions, and for educational innovations that would improve the chances of graduates' employability in the environmental protection and ecotourist sectors. The two projects concluded so far, for example, were dedicated primarily to students of natural sciences and technology, such as Landscape Architecture, Biology and Environmental Protection. These cross-border collaborations provide funding for internships, workshops with entrepreneurs, study visits and language courses, as well as other individualized educational opportunities, some related to enhancing students' competences and the methodological quality of their diploma projects and their practical applications.

AREA OF ACTION: Human capital and Internationalization

WYDZIAŁ PRZYRODNICZO-TECHNICZNY
UNIWERSYTET OPOLSKI

OBJECTIVES

The two cross-border collaborative projects place emphasis on strengthening professional competencies in the labour market among students of natural and technical studies. Future graduates have the chance to improve their professional competencies, form a network, establish cooperation with potential employers and participate in study programmes adapted to cross-border labour markets.

DESCRIPTION

The first project is a joint cooperation of the University of Opole and the Hradec Králové University, with the goal of increasing opportunities for graduates in the cross-border labour market. Its merits and relevance were highlighted by employers, who stressed the necessity to adjust academic study programmes to the modern requirements of the labour market. Within this programme, students had the opportunity to take part in joint lectures, workshops, and professional internships in Poland and the Czech Republic. It was of key importance that entrepreneurs from border regions and practitioners in various sectors be involved.

The second project on educational innovations for increasing the employability of graduates in ecotourism assumes that there is an untapped potential for ecotourism in protected natural areas, particularly in economically weaker border regions in Poland and Czechia. Therefore, its main goal is to innovatively strengthen practical competencies in communication, knowledge, and skills (human capital) in the partner institutions and regions. Lectures, workshops with entrepreneurs and practitioners, professional internships in ecotourism-related entities and language courses are all examples of investments in human capital.

RESULTS

The budget of both projects covers the costs of activities planned to take place between 2018 and 2021 and is related to the implementation of trainings, lectures, workshops and internships for students of the natural and technical faculties of partner universities. From UO over 100 students were involved in six rounds of activities with faculty and external partners. Some activities for the project were transferred to the virtual study environment with 3D and interactive tools.

REPRODUCTIBILITY

As border regions sometimes suffer from the consequences of their peripheral location, UO's use of funding from the Interreg programme was aimed to alleviate these disadvantages. It successfully focused on the actions aimed at supporting professional competencies of graduates and adjusting them to the needs of the labour market, and it addressed the disadvantages characteristic of underdeveloped border regions of Poland and Czechia.

RESPONSIBLE: Agnieszka Dołhańczuk-Śródka, agna@uni.opole.pl; Grzegorz Kusza, kuszag@uni.opole.pl; Katarzyna Łuczak, kluczak@uni.opole.pl

WEB OR CONTACT: http://iisib.wpt.uni.opole.pl/interreg-2014-2020/; http://kopz.wpt.uni.opole.pl/interreg-2018-2021/

SCIENCE COMMUNICATION GOOD PRACTICES

Esperienza inSegna

SUMMARY: Esperienza inSegna is a science event organized on a yearly basis by the PALERMOSCIENZA Association in collaboration with the University of Palermo within the university campus. It allows all visitors to enter the world of science through hands-on activities (conferences on many topics, theatrical performances, guided visits, astronomical observation and so on).

AREA OF ACTION: Science Communication

PALERMO SCIENZA

OBJECTIVES

- To bridge the gap between science and society.
- To convey scientific knowledge through appropriate tools to reach a broader target of users, especially young people.
- To foster a cultural environment which could facilitate science development.
- To encourage and consolidate scientific and technological competence of youth.

DESCRIPTION

Thanks to Esperienza inSegna, school students become familiar with science and practice new techniques and methods through educational labs and scientific exhibits, being guided by students of every school grade from preschool to university. They also discover the relevance of research findings in daily life.

Esperienza inSegna is a scientific event organized on a yearly basis by the PALERMOSCIENZA Association in collaboration with the University of Palermo within the University campus. It allows all visitors to enter the world of science through hands-on activities. The event, in its thirteenth edition, has been organized in such a way as to make the learning process immersive and interactive thanks to a great variety of initiatives aimed at schools, institutions and citizens. The theme chosen for the 2020 exhibition, "Climate change and environmental sustainability," took up the challenge that the new generation has launched to humanity, demanding interventions that not only consider ecosystems, but that are sustainable also from a social and economic point of view. The organizing team of Esperienza inSegna chooses the core theme for each year and coordinates and supports the scientific exhibit production.

Students at every school grade, from preschool to university, design and build interactive exhibits with their teachers before Esperienza inSegna starts. During the event they involve and explain the exhibits to other students or science-passionate people, in a peer-to-peer transfer of knowledge, using the STEM approach. Meanwhile, university students and researchers propose scientific exhibits linked to their research. Furthermore, they guide school students who visit Esperienza inSegna into university labs to show the relevance of research into daily life. The exhibits are organized to be accessible both to children and secondary school students. Esperienza inSegna focuses on interdisciplinary lab work and uses demonstration as a powerful learning tool. It is a valuable model for implementing UNIPA third stream through knowledge exchange rather than mere transfer and interdisciplinarity.

RESULTS

In 2020 Esperienza inSegna involved 70 schools, 750 students as popularisers, and 210 teachers to support them. They made available more than 270 scientific exhibits, organized 65 labs, 9 conferences and 10 shows.

12,500 visitors, including more than 10,000 students from schools of all levels, attended the 2020 edition of the event

REPRODUCTIBILITY

Esperienza inSegna has fostered a learning process based on scientific discovery to promote STEM among young people and has networked different kinds of actors of the R&I ecosystem. Students of any age have fun while learning by doing, observing and experimenting.

RESPONSIBLE: Valeria Greco, Carmelo Arena, Carmela Gioele Galiano
WEB OR CONTACT: https://www.palermoscienza.it/esperienza-insegna/

Experimentarium

SUMMARY: Initiated by the University of Burgundy in 2001, this programme was a unique initiative in Europe. The Experimentarium's objective is to create encounters between researchers and different publics. It has been led by a small team of scientific mediators from Burgundy, with the participation of more than 200 young researchers.

AREA OF ACTION: Science Communication

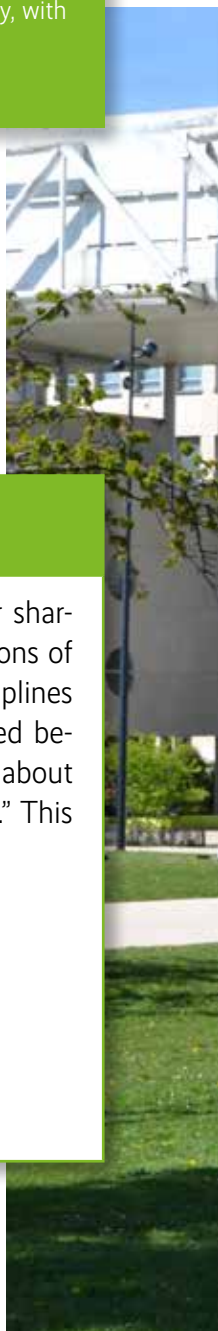
OBJECTIVES

The Experimentarium regularly organizes meetings between young researchers from all disciplines and different audiences. For the visitor, this meeting is an opportunity to discover the actors of the research world and share their opinions together.

DESCRIPTION

Since 2015, the Experimentarium is one of the 44 Programmes d'Investissement d'avenir (PIA) for sharing scientific culture. It has become the "Experimentarium Network" and is deployed in several regions of France. The Experimentarium regularly organizes meetings between young researchers from all disciplines and different audiences. During the twenty-minute workshop discussions, a real dialogue is created between small groups and researchers. Referring to experiments or unusual objects, the researcher talks about his/her daily life, invites questions and leads the visitor to the heart of the research "in the making." This network is led by the University of Burgundy and brings together about thirty professionals from:

- ↳ the Scientific Culture Mission of the University of Burgundy;
- ↳ the Scientific and Technical Culture Unit of Aix-Marseille University (AMU);
- ↳ the Service Sciences Arts et Culture of the University of Franche-Comté;
- ↳ Science Action Normandie - Centre of Scientific and Technical Culture;
- ↳ the Office of Cooperation and Information Museums (OCIM).



RESULTS	REPRODUCTIBILITY
Every year, the network gathers for an "Experimentarium Festival" in a city in France: 50 researchers from all regions meet the public during three days. They share their passion and exchange their experience with an audience.	The Experimentarium is a good example and good practice to illustrate the valorisation of research and is a successful science communication tool as it connects science and society, creates a generation of researchers more open to society and a society more open to research. An example of innovation in scientific mediation.

WEB OR CONTACT: https://www.u-bourgogne.fr/recherche-scientifique/experimentarium-decouvrez-les-chercheurs, https://www.experimentarium.fr/regions/bourgogne

EXPOCIÈNCIA or e-XPOCIENCIA

SUMMARY: IA project carried out at the Science Park of the University of Valencia (Parc Científic de la Universitat de València, PCUV) since 2009. This is a science festival open to citizens. It is an open house held on a Saturday for the whole family, and especially for young people. The aim is to attract the community to the innovation ecosystem of the PCUV.

AREA OF ACTION: Science Communication

OBJECTIVES

The main objectives of EXPOCIÈNCIA are to bring research and entrepreneurship closer to the public. Its goal is also to publicize the innovation ecosystem made up of research institutes and knowledge-based companies and finally to awaken vocations and develop the entrepreneurial spirit in youth. This philosophy has been maintained for more than a decade.

The general objectives of the online format are:

- Bring science and technology closer to the public through activities related to the multiple lines of research of the University of Valencia in the Science Park, as well as the companies that are part of this ecosystem.
- Publicize this innovation ecosystem, made up of research institutes and knowledge-based companies;
- Create favourable attitudes towards science and technology.
- Awaken vocations.
- Develop the entrepreneurial spirit in youth.

The specific objectives of the online format of the project enhance the general objectives:

- Ensure the continuity of the dissemination project.
- Explore new possibilities and potential for two-way communication between science and technology professionals and future university students.
- Make the experiences and knowledge of researchers who carry out their work in the PCUV reach classrooms.

DESCRIPTION

e-XPOCIENCIA offers secondary schools, high schools and training cycles the possibility of visiting the Science Park of the University of Valencia from their classrooms through Information and Communication Technologies (ICT).

EXPOCIÈNCIA has been evolving and adapting to the circumstances demanded by the context. However, since its first edition, it has had the support of all the institutes and research centres located in the PCUV:

- Cavanilles Institute of Biodiversity and Evolutionary Biology (UV).
- Institute of Agrochemistry and Food Technology (CSIC).
- Institute of Materials Science (UV).
- Institute of Molecular Science (UV).
- Institute of Corpuscular Physics (UV + CSIC).
- Institute of Robotics and Information and Communication Technologies (UV), the Image Processing Laboratory and the Astronomical Observatory of the University of Valencia.

RESULTS

The face-to-face open day at the Science Park attracts nearly 5,000 visitors of all ages in each year.

The 2020 edition was online and received visits from thousands of high school students. Its website can be visited here: http://pcuv-3808422.hs-sites.com/expociencia-2020.

REPRODUCTIBILITY

EXPOCIÈNCIA is made up of multiple activities, games and workshops aimed at family audiences within the framework of the UV Science Park, its team and the people who make it up. The activities are proposed by the organizers themselves and in accordance with their main activities, so the possibilities are wide and easily reproducible in other Science Parks and Research Centres. With a catalogue of activities created over 12 editions, one of them online, the EXPOCIÈNCIA archive can provide inspiration to equivalent centres present in the rest of the FORTHEM Alliance.

WEB OR CONTACT: www.expociencia.org or expociencia@uv.es

Impact Workshop

SUMMARY: The purpose of the Impact Workshops is to improve and strengthen the impact section of project proposals.

AREA OF ACTION: Internationalization of science, co-creation with non-academic agents, science communication and dissemination, exploitation venues for science and results of research

OBJECTIVES	DESCRIPTION
Enhance the impact level of the project to be realized in terms of dissemination, communication, and exploitation. Provide tools to describe and produce an impact in terms of dissemination, communication and exploitation. Provide tools to recognize and engage with stakeholders and levels of stakeholders.	JYU recognised the need for the development of impact description, implementation plans and how to exploit research and project results when the European Commission H2020-funding period started. For that, JYU organized a support process where research funding advisors and innovation advisors were present to provide tools, support, examples and venues for disseminating, communicating, and exploiting research results for the researchers' planning and writing funding applications. The process includes face-to-face meetings where the research plan or the project plan is presented, and impact tools are matched to those specific plans. There can be several meetings between participants depending on the research topic or impact specifications set in the funding call.

RESULTS	REPRODUCTIBILITY
Better understanding of why impact outcomes must be presented and realized in research projects. Better and new tools for describing and realizing the actions to increase and achieve the impact of the research project. The help of research and innovation services to researchers when planning impact activities.	More and more funding agencies and funding programmes demand that the projects that they fund show impact towards larger audiences or stakeholder groups. Researchers must show in their project work what the short-term and long-term impact effects will be and why money needs to be invested in research to produce scientific results that give answers, solutions or ways to cope with the problems and challenges of today's world. Science must be present in people's lives and it must make a difference.

RESPONSIBLE: Henna Gustafsson, henna.m.a.gustafsson@jyu.fi

INDEKS – University of Opole Magazine

SUMMARY: Indeks is a richly illustrated (bi)monthly journal featuring articles popularizing interesting research, current debates, artistic outputs and interviews with important people in academia, complete with the listing of university events, project completions, academic awards, and anniversaries. It has a print circulation of 500-600 copies with a downloadable pdf version accessed from the UO website. It is available for free all around the campus and in selected cultural institutions of Opole.

AREA OF ACTION: Science Communication

OBJECTIVES

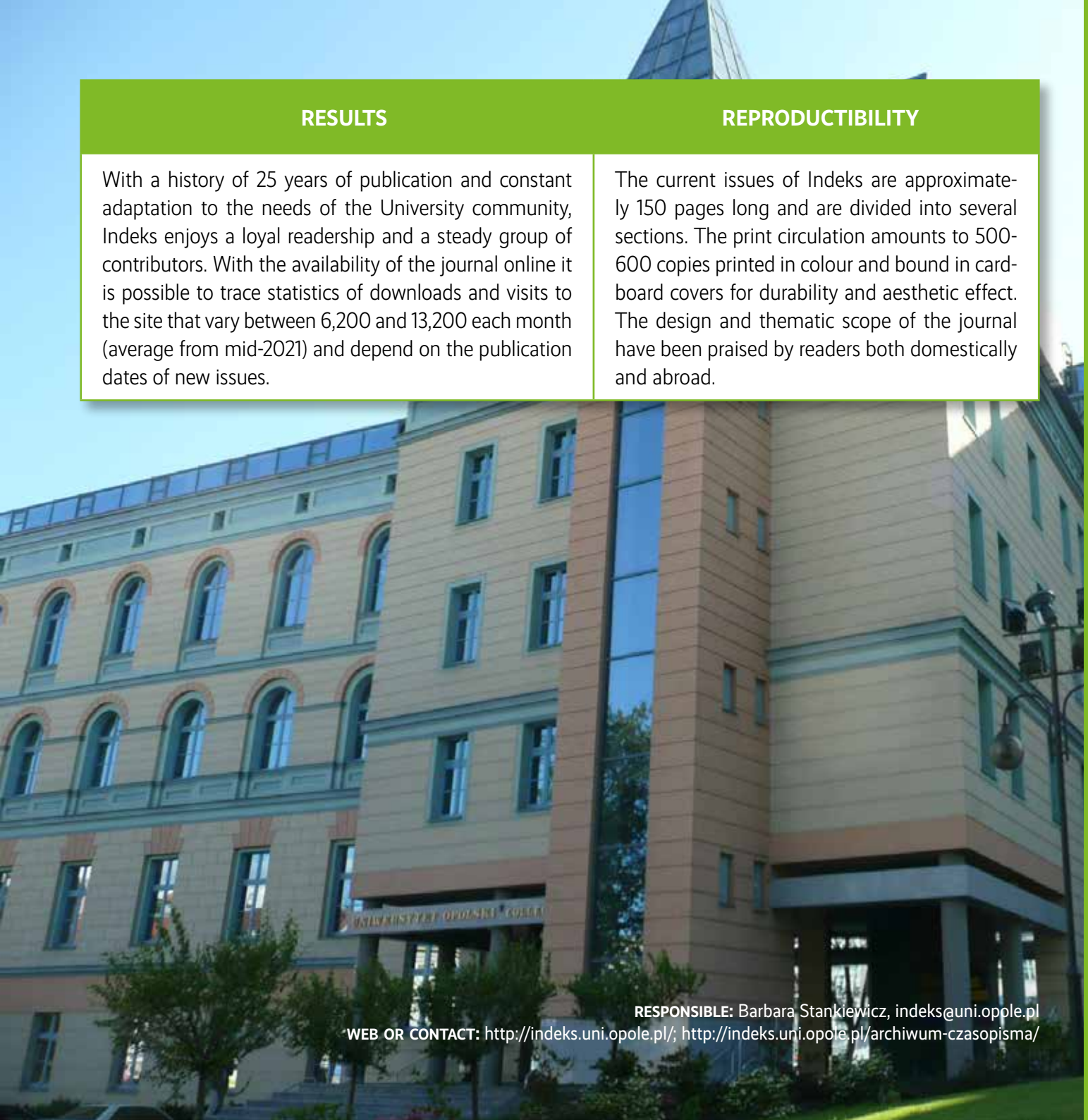
This publication is meant to aggregate information about important events (visits, conferences, open lectures, public actions on the UO premises) to document and report on them to the academic community. It is also designed to promote research done at UO either by individual scholars, research groups or within larger projects, institutes or faculties. It is open to popularisers from all disciplines and often features interesting articles from history, social sciences, language studies, philosophy, biology, physics, etc. It includes sections related to the history of the region and its academic tradition. It carries interviews with prominent scholars, successful alumni, or external researchers who used to be connected to Opole. It has space devoted to presenting art and poetry, sometimes created by or with students. Its overall objective is to integrate the University community and showcase its best outputs to the citizens of the city and a wider public.

DESCRIPTION

The journal was established in 1996, first as a print magazine sponsored by internal funds and designed to inform the faculty and staff about University-internal actions and strategic decisions. Over the years it evolved to diversify its content, to document academic life, to feature opinions and polemics, to take advantage of visits of prominent scholars and to invite more contributors from all disciplines and statuses. It collaborates with the University of Opole Press to promote recently published academic monographs.

The visual design of the journal has evolved to feature more photographic and artistic content. Now, apart from print copies distributed around the campus and through cultural institutions of Opole, the current and archival issues of the journal are available for download or to read online.

RESULTS	REPRODUCTIBILITY
With a history of 25 years of publication and constant adaptation to the needs of the University community, Indeks enjoys a loyal readership and a steady group of contributors. With the availability of the journal online it is possible to trace statistics of downloads and visits to the site that vary between 6,200 and 13,200 each month (average from mid-2021) and depend on the publication dates of new issues.	The current issues of Indeks are approximately 150 pages long and are divided into several sections. The print circulation amounts to 500-600 copies printed in colour and bound in cardboard covers for durability and aesthetic effect. The design and thematic scope of the journal have been praised by readers both domestically and abroad.



RESPONSIBLE: Barbara Stankiewicz, indeks@uni.opole.pl
WEB OR CONTACT: http://indeks.uni.opole.pl/; http://indeks.uni.opole.pl/archiwum-czasopisma/

JYUnity

SUMMARY: The University of Jyväskylä's stakeholder magazine that presents the latest research, staff and faculty news.

AREA OF ACTION: Science Communication

OBJECTIVES

The aim of JYUnity is to share important research results and other current news from the University of Jyväskylä and make science visible in society.

DESCRIPTION

Before JYUnity, a printed Tiedonjyvä-stakeholder magazine was published five times a year. JUYnity has opened the research of the University to the wider audience and brings important themes to the public discussion.

RESULTS

JYUnity has reached a wide audience and thanks to JYUnity, many important themes of the University have been highlighted in the traditional media. During the year 2021, digital articles were read more than 90,000 times and there were more than 55,000 visitors to the website. Most of the articles are also published in English, which has increased visibility internationally. During 2021, over 20,000 of the website's visitors came from outside of Finland.

REPRODUCTIBILITY

Digital magazine and social media posts of the articles can help to reach much wider new audiences than the printed magazine.

RESPONSIBLE: Anna-Kaisa Säkkinen; Liisa Harjula, viestinta@jyu.fi

WEB OR CONTACT: https://jyunity.fi/en/

Listings of the University of Jyväskylä's Experts

SUMMARY: JYU compiles listings of the University's experts who are at the disposal of the media for discussion of current societal topics.

AREA OF ACTION: Science Communication

OBJECTIVES	DESCRIPTION
The goal is to highlight the expertise of our researchers and, additionally, to provide them with new opportunities.	We suggest new experts for the journalists to comment on and give their perspectives to, with regard to current topics.

RESULTS	REPRODUCTIBILITY
Increase media visibility of the University and its researchers and strengthen the collaboration between the University and stakeholders. Researchers' expertise will be noticed and, hopefully, harnessed in tasks that require a high-level expertise.	We have received a lot of good feedback from media representatives. E.g., in Spring 2020, we made a list of researchers who have the expertise to comment on the coronavirus and its impacts on society. Our experts were interviewed numerous times and, thanks to this practice, JYU received a lot of positive media attention.

RESPONSIBLE: Liisa Harjula, viestinta@jyu.fi
WEB OR CONTACT: https://www.jyu.fi/fi/yhteistyo/asiantuntijat-ja-tietoaineistot/medialle

Mainzer Wissenschaftsmarkt

SUMMARY: The Science Market is organized by the Mainz Science Alliance (Mainzer Wissenschaftsallianz, see https://www.wissenschaftsallianz-mainz.de/en/) and brings science to life in the middle of the city (https://www.wissenschafts-allianz-mainz.de/en/science-market). Passionate researchers from our member institutions – universities, research institutes and researching enterprises – present their projects to the public with enormous involvement and a wealth of fresh ideas. In this way, they encourage those small and big, young and old, to take part in the wonders of science.

AREA OF ACTION: Science Communication

OBJECTIVES	DESCRIPTION
The aims of the Science Market are to inspire local citizens with science and research; to make science and research tangible and to bring scientists and citizens in contact with each other; to present the diversity of the scientific institutions in Mainz to the local public; to further establish Mainz as a city of science.	The Science Market of the Mainz Science Alliance is organized every two years on a weekend in September as a public fair in the city centre. Several tents host a large variety of booths with expositions and hands-on experiments for the public. All materials are provided by the participating institutions. The booths are staffed by scientists – often early career researchers – who explain their research and the available material and experiments to visitors. A focus is usually set on interaction and hands-on experience. Usually many experiments address school children. The fair is accompanied by a special programme of public talks or experimental shows. Due to the COVID pandemic, the 2021 Science Market was organized as a virtual event with live talks and discussions and a science box that could be ordered and that contained numerous experiments, information material and links to online materials.

RESULTS

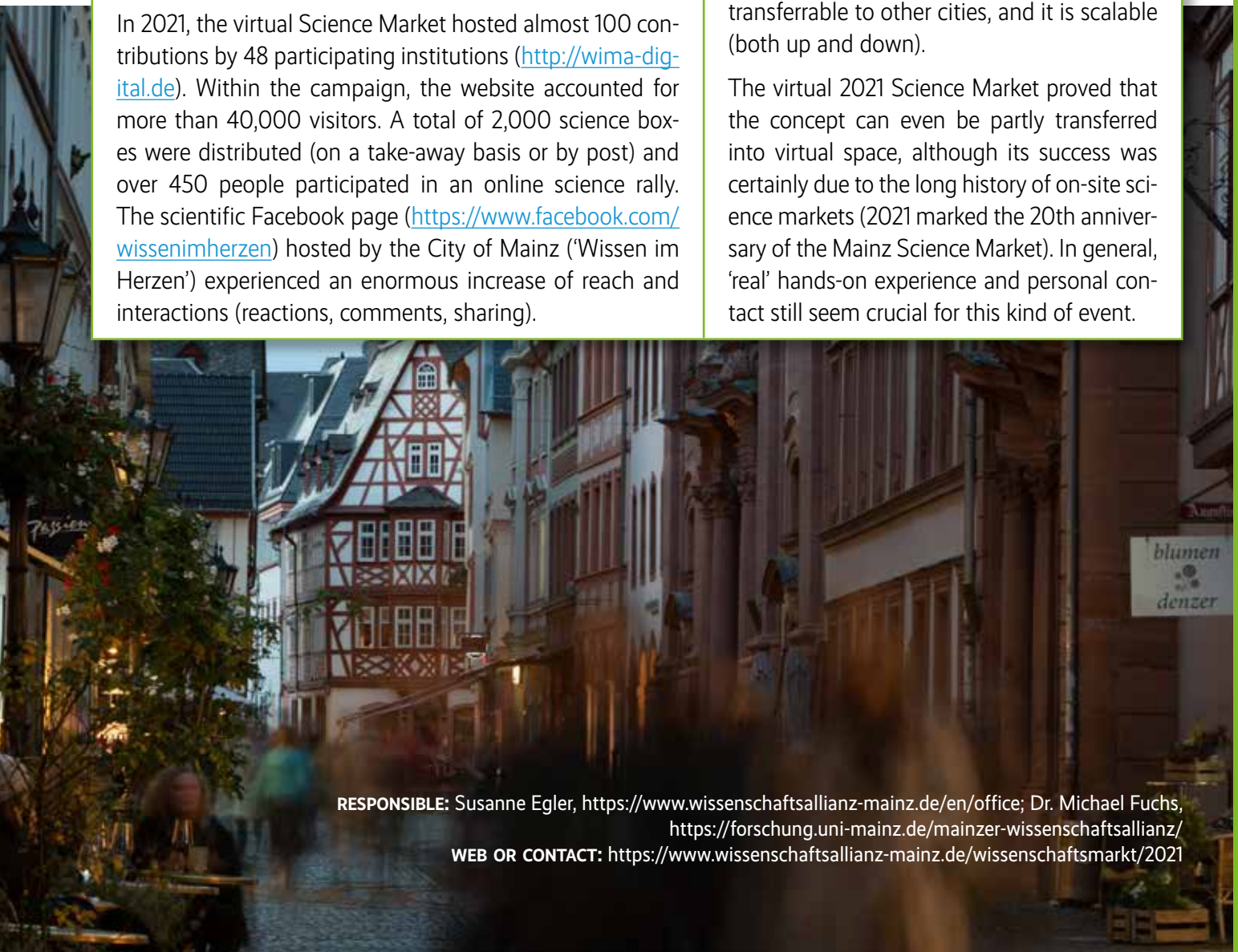
Before the COVID-19 pandemic, around 17,000 visitors participated in the Science Market each year. To put this into perspective, Mainz has only around 200,000 inhabitants.

In 2021, the virtual Science Market hosted almost 100 contributions by 48 participating institutions (http://wima-digital.de). Within the campaign, the website accounted for more than 40,000 visitors. A total of 2,000 science boxes were distributed (on a take-away basis or by post) and over 450 people participated in an online science rally. The scientific Facebook page (https://www.facebook.com/wissenimherzen) hosted by the City of Mainz ('Wissen im Herzen') experienced an enormous increase of reach and interactions (reactions, comments, sharing).

REPRODUCTIBILITY

A science market can be a good practice for universities, scientific institutions and for local networks of scientific institutions to interact with the local public. It should be easily transferrable to other cities, and it is scalable (both up and down).

The virtual 2021 Science Market proved that the concept can even be partly transferred into virtual space, although its success was certainly due to the long history of on-site science markets (2021 marked the 20th anniversary of the Mainz Science Market). In general, 'real' hands-on experience and personal contact still seem crucial for this kind of event.



RESPONSIBLE: Susanne Egler, https://www.wissenschaftsallianz-mainz.de/en/office; Dr. Michael Fuchs, https://forschung.uni-mainz.de/mainzer-wissenschaftsallianz/

WEB OR CONTACT: https://www.wissenschaftsallianz-mainz.de/wissenschaftsmarkt/2021

Mathematical Routes

SUMMARY: The Scientific Culture and Innovation Unit of the University of Valencia, in collaboration with the Al-Khwârizmî mathematical Education Society of the Valencian Community, organizes the Mathematical Routes in the city of Valencia within the framework of the annual plan of science dissemination activities that has the support of the Spanish Foundation for Science and Technology and the Ministry of Science and Innovation.

AREA OF ACTION: Science Communication

VNIVERSITAT DE VALÈNCIA

OBJECTIVES	DESCRIPTION
The aim is to use the urban environment as a didactic resource for the dissemination, teaching and learning of mathematics with the aim that secondary school students develop positive attitudes towards them and achieve more meaningful learning, while they are encouraged to see and appreciate the mathematics around them in a friendly way.	Two itineraries are currently offered and a third is in preparation: • Route 1: from the Serrans Towers to the Botanical Garden (meeting point in the Plaza de los Fueros next to the Towers). • Route 4: from Colón Market to La Nau (meeting point at the door of the market in C / Jorge Juan). • Route 5 (in preparation): From les Drassanes del Grau to Mercat del Cabanyal (meeting point access doors to les Drassanes). The people who monitor the routes meet with the students and teachers at their meeting point at 10:00 am. A maximum of 5 groups of 9 people are created per monitor, acting autonomously. The route begins with an introduction to the itinerary, and the necessary material is delivered (measuring tapes, calculators, didactic notebooks...). The estimated duration of each route is 3h30m.

RESULTS	REPRODUCTIBILITY
Every year 7,000 students attend.	With this methodology, any urban environment can potentially be transformed into a didactic resource for the dissemination, teaching and learning of mathematics.

WEB OR CONTACT: https://www.uv.es/uvweb/unidad-cultura-cientifica-innovacion-catedra-divulgacion-ciencia/es/actividades/rutas-matematicas-valencia-1285981884280.html

Morning Sessions ("*Matinales*")

SUMMARY: These *Morning Sessions*, in their usual format, are scientific refresher sessions for middle and high school teachers. They take place on a Saturday morning and are developed with a fixed structure: introduction, four talks and a Q&A period

AREA OF ACTION: Science Communication

OBJECTIVES	DESCRIPTION
To keep middle and high school teachers up to date with their subject. To create a space where you can talk about science and make known to teachers the advances that are being made in a specific science branch.	All the Morning Sessions are recorded in video format and uploaded onto the YouTube channel of the Scientific Culture and Innovation Unit of the University of Valencia (https://www.youtube.com/channel/UCnQa6H34IrJV-Z-4kjxn37w). There is a specific reproduction list.

RESULTS

Since 2003, morning sessions take place twice a year on average. They have always been onsite, but the 2020 ones took place online due to the COVID pandemic. Depending on the topic, the seating capacity of the venue and whether the sessions are in person, the average is 100 participants, although some of them had more than 250 attendees.

WEB OR CONTACT: cdciencia@uv.es; https://www.uv.es/uvweb/unidad-cultura-cientifica-innovacion-catedra-divulgacion-ciencia/es/actividades/matinal-1286135890109.html

Nuit des Chercheurs / Researchers' Night

SUMMARY: Once a year, at the end of September, the European Researchers' Night takes place in more than 200 cities in Europe, including 12 cities in France. Dijon is one of them. Researcher's Night is an invitation to share an evening with researchers, where innovative devices are proposed to the public to share and get to know the researchers better.

AREA OF ACTION: Science Communication

OBJECTIVES	DESCRIPTION
Researcher's Night is an event that has been created in order to connect researchers with the general public.	For the European Researchers' Night 2021 at the University of Burgundy, more than 60 researchers were present. Visitors were invited to sit for 10 minutes with a researcher, to participate in a discussion, to discover an original installation, to play a game with doctoral students, or to discover current research. This year, around the theme of travel, researchers told the story of their latest expeditions, shared their encounters, exposed the lessons learned or debated the issues of scientific travelling. Imaginary journeys, movements of populations and journeys of the past are also currently being studied and are often part of the must-see events that the Researchers' Night offers to visitors.

RESULTS	REPRODUCTIBILITY
This year represented the 17th edition of the European Researchers' Night, where hundreds of scientists gathered in 14 cities of France and 350 cities in Europe.	The Researchers' Night is a good example and good practice to illustrate the valorisation of research and a successful science communication tool as it connects science and society, creates a generation of researchers more open to society and a society more open to research.

WEB OR CONTACT: https://nuitdeschercheurs-france.eu /?DijoN

Open labs

SUMMARY: "Open labs" is an internal communication operation intended for the staff of the University of Burgundy, where several laboratories host an open-door event, providing an insight into their every-day work.

AREA OF ACTION: Science Communication

OBJECTIVES

"Open labs" is an event that has been created in order to connect researchers with the rest of the University community. These visits last one hour, during lunch time, and make it possible to discover labs/researchers/research topics and create connections among the staff of the University of Burgundy. Open labs' main objective is to discover the diversity and quality of research at the institution.

DESCRIPTION

Reserved for the University staff, a programme of about 30 visits of the University labs is offered between March and June (2 to 3 different visits per week). These visits last one hour and take place during lunchtime.

RESULTS

This operation has been a great success; the University of Burgundy is thinking of re-starting it again in 2022. The visits are for groups between 10 and 30 people and it is at full capacity most of the time. For example, in 2018, 25 labs at the University of Burgundy participated in the activity.

REPRODUCTIBILITY

The "Open labs" is a good example and good practice to illustrate the valorisation of research and is a successful science communication tool as it connects science and external actors.

RESPONSIBLE: Audrey Rahali, audrey.rahali@u-bourgogne.fr

Physics in the Theatre

SUMMARY: This public lecture series is organized by the *Mainz Institute for Theoretical Physics* and takes place on a regular basis in the *State Theatre of Mainz*. The Mainz Institute for Theoretical Physics prepares topics from current research in an understandable way.

AREA OF ACTION: Science Communication

Mainz Institute for Theoretical Physics

OBJECTIVES	DESCRIPTION
Bringing current topics from fundamental physics and cosmology to a general audience.	Researchers present current complex research topics to a broad audience during two-hour evening events at the Staatstheater Mainz in an accessible and entertaining way. By answering questions from the audience, the speakers enter into a lively dialogue with those present. Most of the events are recorded and can be accessed via a YouTube channel (https://youtube.com/playlist?list=PLmGfeHeU4DbExUE5E7sEnMHxAxLy2meU8 English subtitles are available).

RESULTS	REPRODUCTIBILITY
There are 2-4 events per year, reaching about 960 visitors per evening. The interested public is kept informed about current events via a mailing list at MITP.	By means of scientists and the audience interacting in a festive environment, the public can gain a better understanding of the research work being done at the University, while scientists can have a glimpse into the public's interests. These events have become part of the cultural life of the city, bringing society and science closer together.

RESPONSIBLE: Olga Zeeh-Sourli, mitp@uni-mainz.de
WEB OR CONTACT: https://www.mitp.uni-mainz.de/physik-im-theater/

Press Release System

SUMMARY: The UCC+i of the UV releases their press releases efficiently, highlighting research results, as well as the institution's own activities and those activities done in collaboration. The press releases and news are published on different websites, sent to the media and are also disseminated through social networks. Based on these, interviews are also conducted with experts on television, radio and in the press. In addition, in order to make this more effective, videos have also been made in which the research staff explain their work. It is also a strategic objective to give more visibility to activities that have already been implemented and that operate regularly, both in the area of the University of Valencia and in Valencian educational centres or anywhere else in the Valencian territory. All the actions carried out by this unit are published on the UCC+i website (www.uv.es/cdciencia) and also on the main website of the UV and of the centres, institutes or services related to the published information. As an example, a press release reporting the results of a genetics group's research appears simultaneously on the following websites: cdciencia, main UV, UVNoticies, Faculty of Biology and Institute of Integrative Systems Biology. It is also sent to the media and spread on social media.

AREA OF ACTION: Science Communication

OBJECTIVES	DESCRIPTION
Enhance the impact of the work done at the UV.	Each press release is shared via: • The press office with conventional and specialized press. The list belongs to the institution, not to an individual official. • The UCC website and the news section of the UVEG website. • The UCC's social media channels (Twitter, Facebook, YouTube, Telegram). • Shared with other Faculty's websites.

RESULTS

An average of more than 150 press releases a year are prepared and published.

RESPONSIBLE: Agusti.Hernandez@uv.es

UCC Website

SUMMARY: The UCC website offers information on all activities, awards, publications and projects in 3 languages, making it easy for the audience to monitor their work.

AREA OF ACTION: Science Communication

OBJECTIVES	DESCRIPTION
Keep all UCC activities and news releases easily findable and organized.	It includes dynamic sections, such as press releases and news that are published, and more static sections such as fixed sections including activities, awards or interviews.

RESULTS

In 2020 it had 111,836 visits from more than 62,400 people.

WEB OR CONTACT: cdciencia@uv.es; https://www.uv.es/uvweb/unitat-cultura-cientifica-innovacio-catedra-divulgacio-ciencia/ca/unitat-cultura-cientifica-innovacio-catedra-divulgacio-ciencia-1285898622434.html

Science Festivals and (Virtual) Open Days

SUMMARY: Each year, either in spring or autumn, UO organizes science fairs and open days under the well-known label "Opole Science Festival." The festivals usually consist of a "researcher's night" that promotes astronomy and art (Saturday), "an open-air fair" on designated public grounds in Opole that allows each department to have a stall and demonstrate its best equipment, recent research, publications and activities (Sunday), and an "open day" where citizens and high-schoolers can visit the facilities and take part in workshops and lectures (Monday). Recently, virtual meeting spaces, with livestreams, virtual tours, interactive tasks and quizzes were added.

AREA OF ACTION: Science Communication

Opolski Festiwal Nauki

OBJECTIVES	DESCRIPTION
There were 18 onsite editions of the annual Science Festivals in Opole until 2020, with UO being either the main organizer or a top presenter. The festivals are aimed to make the citizens of Opole and the region interested in recent academic developments and new research orientations of Opole scholars, to promote study programmes among high schoolers and to join in with other institutions and authorities to promote science literacy and lifelong learning. The festivals are usually covered by local media. (Virtual) open days allow citizens and candidates to have a sneak peek at UO's labs and newest equipment in its facilities and faculty buildings, to get acquainted with the University's resources and to attend workshops and lectures by academics.	The formula of the festivals evolves and adapts to new possibilities of showcasing and popularizing science, sometimes within thematic strands. The festivals offer a wide choice of activities to join either virtually or in person. The practical workshops and visits usually require prior registration and schools take advantage of open days to organize school trips. Open-air fairs allow citizens to operate specialized equipment, to undergo physical tests or medical exams, to take part in experiments and knowledge quizzes in various disciplines, etc. Children can play games and solve puzzles and charades, learn words in exotic languages, do experiments and win prizes, among other things. (Virtual) open days are attuned to the needs of prospective students and allow young people to see the facilities, talk to faculty and staff about study issues, visit labs and libraries and learn more about post-graduation job opportunities. Virtual open days in June 2021 were streamed on Facebook and can be revisited as a 4-hour long video, while the facilities can be visited as an interactive virtual tour. During the event it was possible to chat with academic experts and university recruiters.

RESULTS

With almost 20 years of enabling Opole citizens and prospective students to explore the University's facilities, resources, academic contributions and ongoing research, the Opole Science Festival and UO open days have been invaluable in promoting citizen science and science literacy. Regarding the scope of impact of virtual open days in 2021, the news and entry page was visited over 1,600 times within two days, and the interactive virtual tours of individual faculties were taken by a wide range of visitors: from the fewest for Theology (24) to the most for Philology (124). The FORTHEM office's website – also featured in the video – was visited a record number of times that June (1,140 visits by 587 visitors).

REPRODUCTIBILITY

Communicating science and increasing the public understanding of science is a public mission of any university. UO has been involved in many such actions at departmental levels, but its crown achievement is the annual festival. The pandemic conditions forced most of the activities online, but the forms adopted by the UO marketing team and science popularisers proved successful in mitigating the lack of physical contact and allowing candidates from remote localities to participate.

RESPONSIBLE: Dr Katarzyna Książek, festiwal@uni.opole.pl; marketing@uni.opole.pl
WEB OR CONTACT: http://festiwal.uni.opole.pl/opolski-piknik-naukowy/ http://marketing.uni.opole.pl/

Theme week of science communication– case example: taboos in female athletes' well-being

SUMMARY: The University Communication Unit regularly organizes theme weeks related to the University's core research. During the week, a specific theme and research news related to the topic are in focus.

This is a successful case example: In the fall of 2020, sport and health science were the main topic of the theme week. Several articles related to sports and health were published and additionally social media channels were utilized to disseminate the results. One of the articles was about the research results related to the taboos in female athletes' wellbeing. The topic was so relevant that it appeared in the traditional press and a large discussion ensued. Several sports clubs contacted the University to ask for advice on how to pay attention to these issues in their own practices. The basis of the popularized article was in research and reached a very wide audience.

AREA OF ACTION: Science Communication

OBJECTIVES	DESCRIPTION
The objective is to reach new audiences, such as young people on Instagram.	Utilizing different social media channels of the University in science communication, from the needs of the target audience. Compiling science topics as a bigger picture by utilizing several themes.

RESULTS	REPRODUCTIBILITY
Growth in social media visibility and commitment. Contacts from the stakeholders.	This is a good example of how to bring research results into a bigger discussion in society. Usually, it is about utilizing several channels and making the target audience aware of the research that really concerns them.

RESPONSIBLE: Liisa Harjula, viestinta@jyu.fi

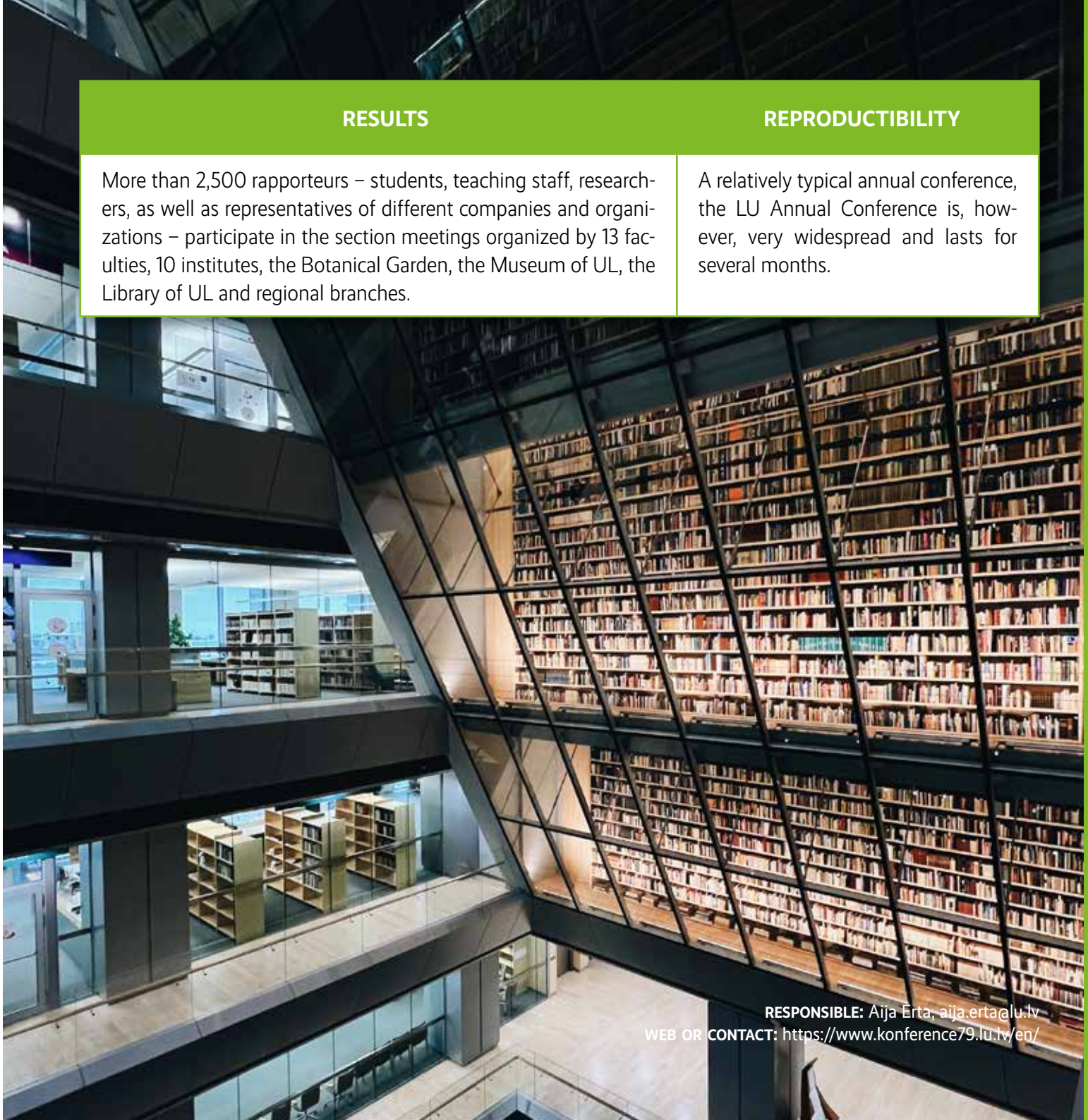
University of Latvia Annual Scientific Conference (Nr 80 in Year 2022)

SUMMARY: The scientific conferences of the University of Latvia have been taking place since 1945. The aim of the conference is to motivate students and scientists to present their results in a foreign language. From January to April 2021, the Annual International Scientific Conference took place for the 79th time at the University of Latvia. The UL conference has become an integral part of scientific life, representing nearly centuries of tradition

AREA OF ACTION: Science Communication

OBJECTIVES	DESCRIPTION
The annual academic conference of the University of Latvia is organized with a view to ensuring the exchange of research results, ideas and thoughts among scientists, doctors, students and guests, which are one of the most integral components of scientific activity.	In 2021, this tradition-rich conference was held remotely through Zoom and MS Teams platforms. Scientists, rapporteurs and all those interested were welcome to attend more than 130 section meetings in 4 fields of science (Natural Sciences, Humanities and Arts, Medicine and Health Sciences, Social Sciences), covering priority research and interdisciplinary topics. The conference participants became acquainted with the latest scientific achievements and developments, including the field of COVID-19 research. More than 2,500 rapporteurs – students, teaching staff, researchers, as well as representatives of different companies and organizations – participated in the section meetings organized by 13 faculties, 10 institutes, the Botanical Garden, the Museum of UL, the Library of UL and regional branches. Remote job opportunities have contributed to a broad participation of foreign researchers from different continents and scientific institutions, as well attracted more listeners, enabling a wider audience to discuss the latest scientific achievements.

RESULTS	REPRODUCTIBILITY
More than 2,500 rapporteurs – students, teaching staff, researchers, as well as representatives of different companies and organizations – participate in the section meetings organized by 13 faculties, 10 institutes, the Botanical Garden, the Museum of UL, the Library of UL and regional branches.	A relatively typical annual conference, the LU Annual Conference is, however, very widespread and lasts for several months.



RESPONSIBLE: Aija Erta, aija.erta@lu.lv
WEB OR CONTACT: https://www.konference79.lu.lv/en/

CONCLUSIONS

María D. Pitarch-Garrido, University of Valencia
María Dolores del Real, University of Valencia

In today's world, universities are complex entities resulting from different traditions. In Europe, universities face common challenges, whatever their model: the increase in the number of university students, a consequence of the generalisation of higher education to broad sections of society, the diversification of university studies in response to different social demands, not strictly scientific, the growing importance of research as the most reliable way of achieving sustainable and equitable social development, the increase in costs, the need to maintain and improve the high quality of teaching, research and service, etc. All these aspects or challenges can be tackled individually or jointly. The creation or consolidation of an innovative ecosystem within each university and, fundamentally, within the FORTHEM Alliance, makes it possible to develop shared learning and to collaborate to provide integrated, long-term solutions. One of the first steps in this collaboration is to learn about the initiatives that each university has already successfully implemented to solve problems that, as mentioned above, are common to all or most of the universities in the Alliance. Knowing the good practices developed in each university contributes to sharing and collaborating in the construction of a FORTHEM knowledge ecosystem.

The collection of good practices has a very relevant strength: the communication of these practices (or ways of doing things) has a high capacity for transferability of knowledge that can be used by other universities to improve their services and structures. Moreover, the type of information that is communicated is crucial: the more contextualised and realistic it is, the more likely it is to be transferred. For this reason, in this book we have tried to develop, albeit briefly, the objectives and impacts of each of them in the form of a fact sheet, which also provides a contact web address for further information if necessary.

As indicated in previous chapters, the analysis of good practices has proliferated as part of knowledge management strategies in public administrations, but these are less abundant in universities. Three key dimensions can be highlighted for the analysis of good practices: 1) their methodology, 2) the communication of their results and 3) their impact. Points 1 and 2 have already been developed in previous chapters. Point 3 will be the focus of this concluding chapter.

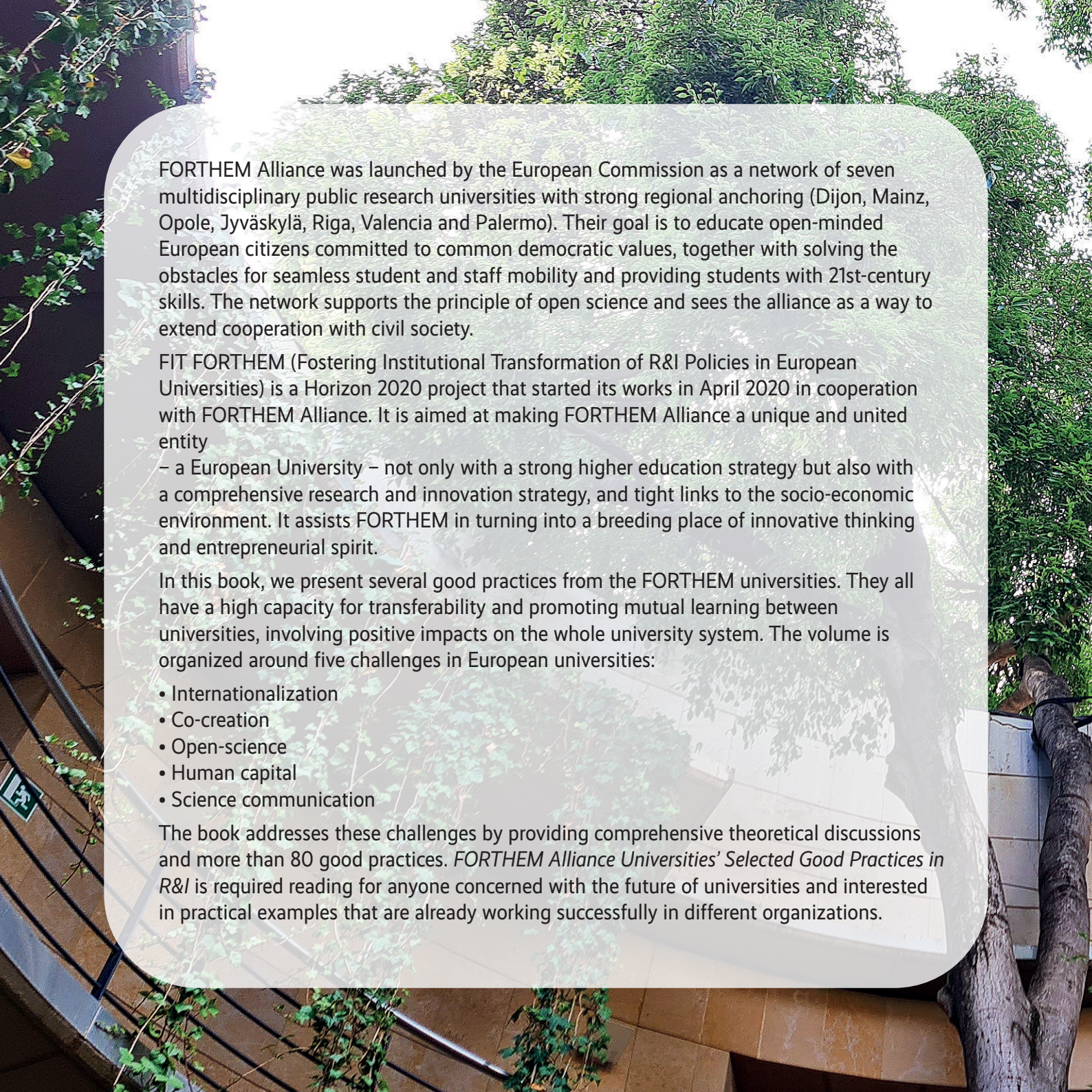
The first of the conclusions we would like to highlight is the cross-cutting nature of most of the good practices brought out by all the universities, which means that their impact is multiplied, with an effect beyond the target or group at which they are aimed. In other words, good practices in open science, for example, not only have an impact on this issue, but also on human resource policies and science communication, as researchers can make use of open repositories and other services to disseminate the results of their work, while at the same time making them more visible and, therefore, better valued in terms of the metrics that evaluate their academic and scientific careers. All the issues addressed are interrelated: internationalization of universities, open science, relationship with the socio-economic environment, communication and human resources. Therefore, the impact of any good practice in FORTHEM universities has positive consequences on the university as a whole.

The second conclusion to highlight is related to mutual learning. The collection of good practices and their discussion within the FIT FORTHEM project helps us to learn about the experiences of other universities and to learn from them.

Furthermore, one of the objectives of FIT FORTHEM is to disseminate our experiences to other universities outside our Alliance so that different areas can learn or adopt some of these practices. Replicability is a direct consequence of social innovation and, given that this is the ultimate goal, the dissemination of good practices in FORTHEM is a process of innovation that can continue to develop and contribute to the consolidation of a desired innovative ecosystem that enhances research and the transfer of science between our universities and our regions.

Finally, we would like to stress that we are not so much interested in the impact in quantitative terms as in qualitative terms. In some of the sheets detailing each of the selected good practices, the impact in terms of people reached is included, which is really important and noteworthy. However, in all of them the impact goes beyond what numbers can measure. The good practices presented are sustainable, inclusive and mostly consolidated within universities. Some have emerged to respond quickly to a strategic challenge in their country or region, others are geared towards ensuring equal rights for people, some have many years of experience, while others are disruptive and innovative. All are transferable, with the logical adaptations to the particular contexts of each university.

Thus, although the good practices presented and analysed in this book are not all that exist, they are a good sample of those developed within the FORTHEM Alliance and that have helped our universities to respond to the changing demands of society. They also serve as an example to other universities that, in other contexts, can adapt them or learn from them for their own development.



FORTHEM Alliance was launched by the European Commission as a network of seven multidisciplinary public research universities with strong regional anchoring (Dijon, Mainz, Opole, Jyväskylä, Riga, Valencia and Palermo). Their goal is to educate open-minded European citizens committed to common democratic values, together with solving the obstacles for seamless student and staff mobility and providing students with 21st-century skills. The network supports the principle of open science and sees the alliance as a way to extend cooperation with civil society.

FIT FORTHEM (Fostering Institutional Transformation of R&I Policies in European Universities) is a Horizon 2020 project that started its works in April 2020 in cooperation with FORTHEM Alliance. It is aimed at making FORTHEM Alliance a unique and united entity
– a European University – not only with a strong higher education strategy but also with a comprehensive research and innovation strategy, and tight links to the socio-economic environment. It assists FORTHEM in turning into a breeding place of innovative thinking and entrepreneurial spirit.

In this book, we present several good practices from the FORTHEM universities. They all have a high capacity for transferability and promoting mutual learning between universities, involving positive impacts on the whole university system. The volume is organized around five challenges in European universities:

- Internationalization
- Co-creation
- Open-science
- Human capital
- Science communication

The book addresses these challenges by providing comprehensive theoretical discussions and more than 80 good practices. *FORTHEM Alliance Universities' Selected Good Practices in R&I* is required reading for anyone concerned with the future of universities and interested in practical examples that are already working successfully in different organizations.