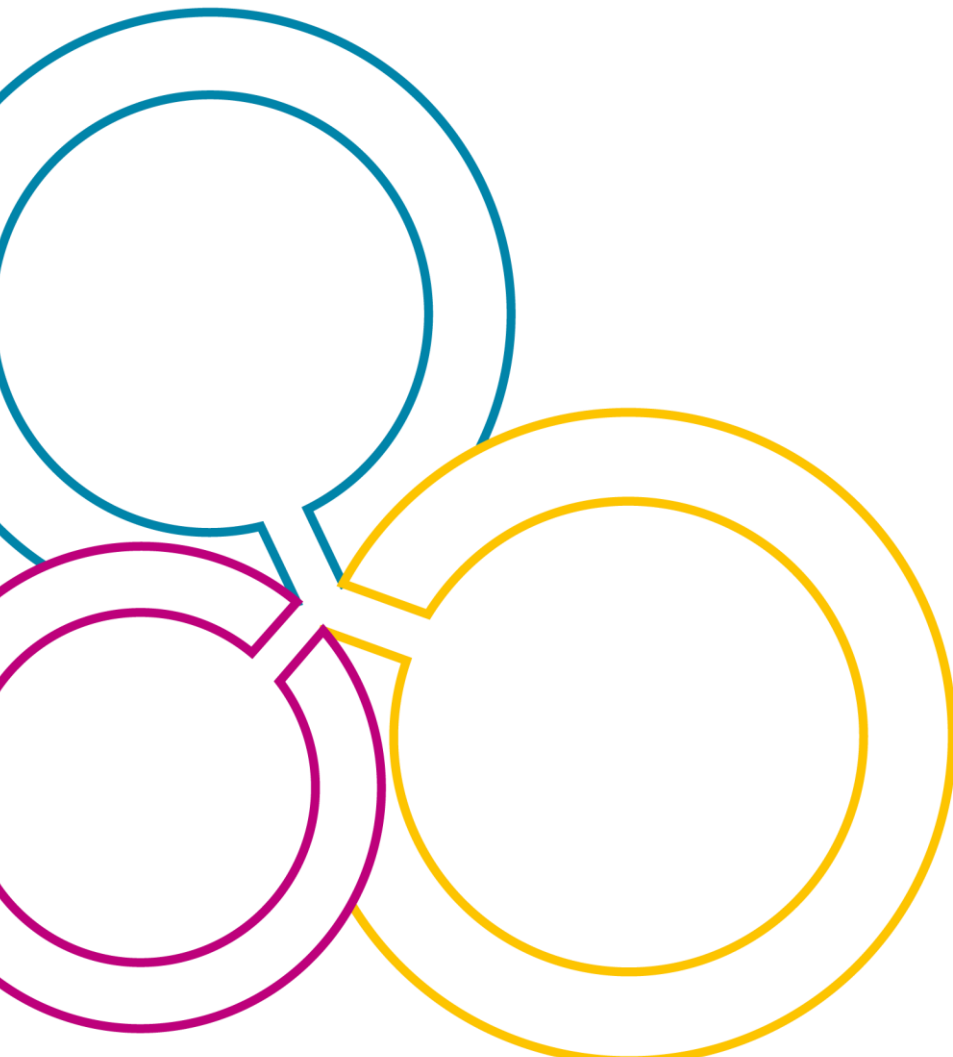




euraxess

RESEARCHERS IN MOTION

POLICY GOOD PRACTICES ON
RESEARCHER PROFESSIONAL
DEVELOPMENT SYSTEMS



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RESEARCHER PROFESSIONAL
DEVELOPMENT SYSTEMS



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POLICY PRACTICES SUPPORTING RESEARCHER PROFESSIONAL DEVELOPMENT SYSTEMS

INTRODUCTION

One of the key priorities of the European Commission (EC) to complete the European Research Area (ERA) is the achievement of an open labour market for researchers within the European Union (EU), facilitating mobility (geographical, disciplinary and sectorial), supporting training and assuring attractive research careers. This priority is essential to achieve the Innovation Union policy target of one extra million researcher jobs in Europe to enhance the research intensity of its economy.

The development of comprehensive research career development strategies in Europe will assure that researchers are offered with a set of skills that will facilitate their mobility and incorporation into other sectors¹.

1. "Researchers in the European Research Area: One Profession, Multiple Careers, Communication from the Commission to the Council and the European Parliament", COM(2003) 436 final, July, Brussels.

https://ec.europa.eu/research/fp6/mariecurie-actions/pdf/careercommunication_en.pdf

Similar concerns and trends have also been acknowledged beyond the European Union in both policy documents (e.g., Australia¹, USA²) and scientific literature (e.g., Singapore³).

Researcher professional development (understood as structured approach to the continuous development of researcher's knowledge, expertise and attributes) has been in the agenda at EU level for some years now, especially through organizations such as the European Science Foundation (ESF) and the ERA Steering Group on Human Resources and Mobility (SGHRM), and steps forward have been taken such as agreeing on a common taxonomy for research career⁴ or proposing the kind of skills that would be needed at a given professional stage⁵. Furthermore, acknowledging that there is a knowledge gap on the exact skills needed, and that these may differ between academic sectors and countries, there has also been an assessment on the convenience for a common pan-European Researcher Professional Development Framework⁶, understood as a tool for planning, promoting and supporting researcher career development.

The Working Group on Professional Development from the SGHRM issued a report confirming a general acknowledgement of research performing institutions (RPOs) about the need to support the professional development of researchers⁷. However, the majority of the European countries do not have a national system of structured researchers' professional development,

neither do institutions or countries generally have a research development frameworks for researchers. In general terms, RPOs tend to have (if any) concrete programmes or actions supporting professional development rather than general frameworks identifying the competencies needed to be an effective researcher. Moreover, these concrete programmes or actions tend to focus very much in R1-R2 researchers, with R3-R4 researchers generally being overlooked. The WG also identifies a loose and heterogeneous understanding of what exactly means to work towards the uptake of professional development by individual researchers.

In summary, researcher professional development is a topic acknowledged as very relevant for the better performance and employability of European researchers, but much needs to be done towards having a common understanding on the issue, a common European policy to foster the uptake of researcher professional development strategies, frameworks and programmes by the different stakeholders involved.

In this sense, upon the launching of Horizon 2020 programme, the initiative “EURAXESS - Researchers in Motion” has been requested to extend its services to researchers by incorporating actions supporting the professional development of researchers. As a matter of fact, the potential importance of EURAXESS as a platform to disseminate a common understanding, and share good

practices across Europe has already been highlighted in the past ^{6 8}.

Thus, in order to support the future actions of the EURAXESS network of service centres in terms of researcher professional development, the current report has the goal of:

- Providing a brief historical background of policy developments within the EU.
- Identifying existing policies supporting the professional development of researchers within the EU and beyond to facilitate the dissemination of good practices across the network.

METHODOLOGY

This work builds on existing reports on Research Professional Development (RPD), especially on the research on current RPD policies performed across the ESF and SGHRM reports already mentioned in the introduction, as well as the “Transferable Skills Training for Researchers. Supporting Career Development and Research” from the OECD⁹.

In The good policy examples mentioned in this report, together with some extra desk research have helped elaborate on the state of the art of researcher professional development at some members and non-member states countries, attempting to address the implication of different levels of stakeholders (international organizations, national governments, regional bodies, institutions, etc.).

This report does not pretend to be exhaustive, but to highlight the trends and diversity of policies supporting researcher professional development in order to distribute the information across the EURAXESS network to share good practices, and to foster collaboration between the Service Centres and other relevant stakeholders. Priority has been given to ongoing policies and actions with further accessible on-line content.

SOME KEY DEFINITIONS

Researchers: Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned.

- Researcher R1: First Stage Researcher (up to the point of PhD)
- Researcher R2: Recognised Researcher (PhD holders or equivalent who are not yet fully independent)
- Researcher R3: Established Researcher (researchers who have developed a level of independence)
- Researcher R4: Leading Researcher (researchers leading their research area or field)

Researchers' professional development: a structured approach to the continuous development of researchers' knowledge, expertise and attributes at all stages of their career to improve their competency, employability and ability to pursue multiple career paths. This may be achieved by a variety of activities, whether formal and structured, or informal and self-directed.

Transferable skills: skills learned in one context (for example research) that are useful in another (for example future employment whether that is in research, business etc.). They enable subject- and research-related skills to be applied and developed effectively. Transferable skills may be acquired through training or through work experience. Other terms, such as “generic competencies”, “transversal competences” or “professional skills” are also used to describe certain transferable skills.

Research Funding Organization (RFO): Bodies which provide funding, (including stipends, awards, grants and fellowships) to public and private research institutions, including institutions for higher education (HEI's). This allocation of funds is normally through a competitive process, in which potential research projects are evaluated and only the most promising receive funding. Such processes are generally run by government, corporations or foundations.

Research Performing Organization (RPO): This refers to all those public or private institutions which employ researchers on a contractual basis or which host them under other types of contracts or arrangements, including those without a direct financial relationship. The latter refers particularly to HEI's, faculty departments, laboratories, foundations or private bodies where researchers either undergo their research training or carry out their research activities on the basis of funding provided by a third party.



EXAMPLES OF GOOD PRACTICES

INTERNATIONAL ORGANIZATIONS:

EUROPEAN COMMISSION (EC)

The Launch in 2005 of the *European Charter for Researchers and Code of Conduct for the recruitment of researchers*¹⁰ sets up a milestone in the recognition, at the European level, of the need to acknowledge research as a profession and to define a clear framework in terms of rights and obligations for researchers. The Charter and Code constitutes a framework for researchers, employers and funders that invites them to act responsibly and as professionals within their working environment, and to recognize each other as such.

The document specifies several recommendations of the EC to the Member States related to researcher professional development:

- That Member States continue their efforts to overcome the persisting legal and administrative obstacles to mobility, including those related to intersectoral mobility and mobility between and within different functions, taking into account an enlarged European Union.
- That Member States endeavour to ensure that researchers enjoy adequate social security coverage according to their legal status. Within this context, particular attention

should be paid to the portability of pension rights, either statutory or supplementary, for researchers moving within the public and private sectors in the same country and also for those moving across borders within the European Union. Such regimes should guarantee that researchers who, in the course of their lives, change jobs or interrupt their careers do not unduly suffer a loss of social security rights.

- That Member States put in place the necessary monitoring structures to review this Recommendation regularly, as well as to measure the extent to which employers, funders and researchers have applied the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.

Furthermore, the document outlines principles and requirements related to RPD for RFOs and RFOs (employers of researchers), as well for the researchers themselves:

- For employers and funders: draw up career development strategy; availability of professional development activities for all stages.
- For researchers at all career stages: to seek to continually improve themselves by regularly updating and expanding their skills and competencies. This may be achieved

by a variety of means including, but not restricted to, formal training, workshops, conferences and e-learning. This continuous training and development of competencies contributes to a better performance of researchers, better employability and easier mobility (geographical, interdisciplinary and intersectoral).

THE LEAGUE OF EUROPEAN RESEARCH UNIVERSITIES (LERU)

LERU is an association of 21 leading research-intensive universities that share the values of high-quality teaching within an environment of internationally competitive research.

Its mission includes advocating for:

- education through an awareness of the frontiers of human understanding;
- the creation of new knowledge through basic research, which is the ultimate source of innovation in society;
- and the promotion of research across a broad front in partnership with industry and society at large

As part of its activities, has been developed the *LERU Model Code of Practice*¹¹ through a process of extensive consultation with and among LERU members. It is designed to complement and support the specific requirements of the *European Charter for Researchers*, the *European Code of Conduct for the Recruitment of Researchers*, the *UK Concordat on Research Career Development*,

academic labour agreements and HE legislation affecting LERU universities, quality processes such as the *Swiss Label Mechanism*, and other applicable national and local HR policies.

Thus, the *LERU Model Code of Practice* is an international statement of principle defined by universities themselves, codifying the existing high HR standards across all LERU universities and expressing these as a direct commitment to their research employees.

Its adoption by the LERU Rectors' Assembly in November 2009 reflects a shared commitment among LERU members to provide research staff with excellent working conditions within a stimulating and challenging professional environment.

It is composed by 5 commitments with the research employees:

1. Researchers are recognised and valued as employees of the university.
2. Jobs will be well-designed.
3. Researchers will be appropriately recompensed, according to experience and skills.
4. Researchers' work will be well-supported.
5. Researchers' careers will be well-supported.

Researchers are primarily responsible for their own career development, although the university will do its best to ensure that work in the university is professionally enriching and provides a solid foundation for long-term careers.

SCIENCE EUROPE

Science Europe is an association of European RFOs and RPOs promoting the collective interests of its members and supporting their efforts to foster European research.

The *Science Europe Roadmap (December 2013)*¹² provides an action plan to pursue its strategic objectives by identifying nine Priority Action Areas:

- Access to Research Data
- Cross-border Collaboration
- Gender and Other Diversity Issues
- Open Access to Research Publications
- Research Careers
- Research Infrastructures
- Research Integrity
- Research Policy and Programme Evaluation
- Science in Society

In regards to “Research Careers”, the principal aim of Science Europe is to adopt a common strategy to ensure the attractiveness of research careers. This is intended to create and improve European-level, and co-ordinated national-level, policies and programmes for different career stages and career paths, and requires: (i) collecting, sharing and analysing evidence on the needs for career support and the effectiveness of existing career measures; (ii) promoting the tracking and monitoring of researchers’ careers; (iii) assessing the need to improve existing career support instruments, with a particular focus on the post-doctoral career stages; (iv) assessing the need to adapt the criteria and indicators used to appraise researchers’ achievements; (v) improving the

information available to researchers on their increasingly diverse career options, including at the early stages; (vi) exploring the added value of mobility, including identifying both good practice and potential scope for improvement of tools and conditions to support geographic, inter-sectorial, interdisciplinary and virtual mobility; (vii) contributing evidence and advice to policy debate

EUREA

EUREA is an independent organization of people who wish to contribute to the publicity of the European Union and the EU development programs in the regions of Slovakia and of the neighbouring countries.

Among its projects, EUREA in cooperation with the Slovak PhD Students’ Association (ADS) implemented in 2007 the project *Soft Skills for Young Scientists*¹³. Its aim was the realization of classroom trainings, each lasting four days, where the so-called “soft skills” were being taught and practiced. These are the skills that are not directly related to the technical knowledge, however, they enhance the effectiveness and the value of work.

The target group of the trainings were young scientific workers (PhD students or scientific workers with PhD degree younger than 35).

Within the trainings there were given lectures on the following topics:

- System of supporting science and education at level of the EU

- System of supporting science and education at level of the Slovak Republic.
- Subvention schemes of private sector, foundations and non-governmental organizations in Slovakia
- Basic attributes of a quality project
- Preparation of budget
- Writing CVs and covering letters
- Preparation of SWOT analyses
- Project English
- How to present
- Cooperation with Managing Authority and with partners
- Preparation of the project interim and final reports
- Financial management of the projects
- Specific examples of well-written projects in the Slovak Republic

EUROPEAN COUNTRIES (EU Member States and Associated Countries):

AUSTRIA

The Federal Ministry of Science, Research and Economy (BWF) has implemented through the Austrian Research Promotion Agency (FFG) the *R&D Competences for Industry Programme*¹⁴, an initiative supporting measures in companies (particularly SMEs) for the systematic development and qualification of their research and innovation staff. The programme also aims to promote cooperation between companies and tertiary education and research institutions, as well as to enhance the integration of industrially relevant research fields.

There are three programme lines, which are scaled according to their target groups, their R&D competences and duration:

- *Expertise increase*: Qualification seminars. Short-term; customized training of employees in Austrian companies; focus on SME; enabling access to new technology fields. Commitment of resources could be achieved by mainstreaming researcher career development support within all funding schemes.
- *Expertise development*: Qualification networks. Medium-term; networks providing customized training for Austrian companies with universities, universities of applied sciences and other educational and research institutions located in Austria; increase innovation skills of companies in future relevant technology.
- *Expertise enhancement in applied research*: Tertiary level courses. Long-term; customized training networks between companies and universities, universities of applied sciences and other educational and research institutions located in Austria; emphasize industry driven topics at a high scientific level.

BELGIUM

Junior Researchers Support Platform (OJO) funding: Starting in 2011, the Flemish Government allocated a yearly amount of 4

Mio euros to be divided between the five Flemish universities. These means are to be used to support young researchers in term of career guidance, transferable skills, entrepreneurship, intersectoral mobility, etc., and are used in the universities through action of the Doctoral Schools and the Doctoral Training program.

Ghent University has already several programmes and initiatives running in support of RPD:

- Mentoring Programme by PhDs from outside the university¹⁵
- Career Coaching programmes:
 - For PhD candidates as part of the doctoral training programme¹⁶
 - For postdocs¹⁷
- Transferable skills programme as part of the doctoral training¹⁸

ESTONIA

The *Estonian Entrepreneurship growth Strategy 2014-2020*¹⁹ includes a very comprehensive *Lifelong Learning Strategy*²⁰ that will play a key role in the development of skills and capacities human resources in general. Although not specifically targeted at researches, the Strategy acknowledges the need of continuous training in the research and entrepreneurial worlds.

The *Lifelong Learning Strategy* sets a goal of providing the next generation of entrepreneurial people with up-to-date knowledge and expertise. Therefore, in the

context of business development, the Estonian government expects the educational system:

- to update science courses in basic schools and upper secondary schools
- to enhance quality engineering education, including linking theoretical study with practical training
- to make the vocational and continuous training system more efficient
- to integrate the development of e-skills in study programmes

GERMANY

The programme *Forschung zum Wissenschaftlichen Nachwuchs, FoWiN* (Research on Young Researchers) of the Federal Ministry of Education and Research has recently commissioned 9 research projects to shed light over career decisions and recruiting patterns in young researchers, as well as competences and skills.

The RFO German Research Foundation (DFG) has identified the education and advancement of young scientists and academics as one of its priority tasks. This is why the DFG has established the *Research Training Groups*²¹ funding programme focused on supporting young researchers by preparing doctoral researchers within the framework of a focused research programme and a structured training strategy tailored for the complexities of the job market.



The *Helmholtz Association* includes 18 German RPOs and is dedicated to pursuing the long-term research goals of state and society, and to maintaining and improving the livelihoods of the population. Since 2007, the *Helmholtz Management Academy*²² has been teaching the necessary management techniques for using resources effectively in order to achieve rewarding goals. The core topics include strategic activities, organizing structures and processes, and staff management. The Academy operates in the so called “OSB Framework”, which identifies the basic tasks associated to leadership. The Helmholtz Management Academy is open to all those with responsibility in science or administration in the Helmholtz Association. Some of the courses they offer include:

- Programme "Start leading": it prepares you for your first leadership role. The aim is to develop basic confidence to allow you to get off to a good start in your new role.
- Programme "Taking the lead" It provides profound insight into leadership in all relevant dimensions.
- Programme "Leading your group" It provides a compact introduction to all of the leadership topics needed to establish and lead your own group under intense pressure to perform and significant time constraints.
- Programme "Strategic leadership" It provides a compact course on the interaction between leadership, strategy, resources and organisations. Looking at one's own department in a

larger context (e.g. the development of one's own centre), the focus is on anticipating future challenges and on the effective implementation of changes.

- Programme "Managing complexity" It provides a compact overview of the latest thinking on the systemic management of complex organisations, which must meet a wide range of demands from the science community, the political sphere and business and industry. The course is based on a systemic view of organisation and management that perceives organisations as social systems, as defined in the new St. Gallen Management Model.

The Helmholtz Management Academy includes also mentoring and coaching programmes. As a participant of some of the programmes, you can also enjoy the mentoring programme, basically consisting on mentors passing on their informal knowledge and personal experience to mentees outside of hierarchical constraints. Regarding coaching, and in consultation with the Academy team, participants can attend up to six hours of coaching as part of the programme. Coachees can address the specific areas or topics that they consider important for their professional development.

In addition to the Helmholtz Academy, the Association also has a “Work Placement Programme”²³. It offers young leaders in science and administrative or technical

experts working at Helmholtz Centres a chance to spend several months at one or more other institutions, expanding on and developing their skills. It aims to address the increasing importance of outstandingly educated and qualified technical and administrative personnel at the Helmholtz Association.

The *Leibniz Association* is a union of German non-university research institutes from various branches of study. As part of their “next generation of researchers programme”, the Leibniz Association offers the *Mentoring Programme for women researchers at Leibniz institutions*²⁴, targeted at excellent female researchers. The Leibniz Association offers a one-year mentoring programme for highly-qualified women post-docs to support them on the path to leadership positions and professorships.

GREECE

The Greek government has the *Cooperation 2011 programme*²⁵ to foster partnerships between businesses and research bodies in specific research and technological sectors (ongoing). The specific objectives of the Cooperation 2011 Programme are:

- Enhance collaboration between businesses and research bodies through common implementation of research and technological projects;
- Foster green development, competitiveness and outward orientation of Greek businesses;
- Improve Greek citizens' quality of life;

- Strengthen and upgrade the skills of the research workforce; and
- Establish international cooperation through networking and collaboration with entities from European and other countries.

IRELAND

*Innovation 2020*²⁶ is Ireland's five year strategy for research and development, science and technology and includes the commitment to creating opportunities for improving research international and intersectoral mobility. The strategy wants to ensure that education drives innovation because future growth depends on innovation and future innovation depends on people. This requires action at all levels, from encouraging greater engagement with science, technology, engineering and mathematics at primary level to ensuring the necessary supports for researchers at postdoctoral and Principal Investigator levels. As well as supporting the full continuum of talent development in order to ensure that the quantity and quality of trained people is sufficient, from frontier research at and beyond the frontiers of current understanding, to the creation and development of research-informed innovative products, processes and services. The strategy also includes the commitment to establish and improve a system-wide tracking of researcher mobility into industry.

In 2015, the Irish Universities Association (IUA) developed the *Irish Universities' PhD Graduate Skills Statement*²⁷ in collaboration



with stakeholders. The Statement aims to identify the skills necessary to develop and manage PhD Graduates' careers across a broad range of employment sectors, including academia.

LUXEMBURG

The *Luxembourg 2020 Strategy*²⁸ identifies a need for more qualified researchers, especially in the public research sector. One measure aimed at making researchers' careers more attractive is the AFR programme, which supports PhD and postdoctoral students by offering better work contracts, working conditions and training opportunities. The national Research Fund of Luxembourg already mentions in its 2013 annual report that the AFR PhD & post-doc grants received training sessions on project management and training entitled "From Learning to Earning". Also, some of these beneficiaries attended an AFR Networking Day, on the subject of careers as researchers.

NORWAY

The Norwegian Association for Higher Education Institutions (UHR) has developed a *Career Policy for Academic Personnel*²⁹, a strategy for a holistic career policy specific for academic personnel at Norwegian HEI's. Here much emphasis is laid on aligning the motivation for incoming PhDs and Postdocs to regard alternative career paths as attractive as well, given that many of the Postdocs and most of the PhDs will work outside academia after completion.

POLAND

The Foundation for Polish Science (FNP) is a non-governmental, non-political, non-profit institution which pursues the mission of supporting science. It is the largest source of science funding in Poland outside of the state budget, and among other activities, supports its beneficiaries with training and mentoring initiatives for example through the "Skills programmes", which is composed by several strands supporting RPD:

- *Skills Coaching*³⁰: Aimed at providing support to young scholars in tackling professional challenges and moving forward with their scientific careers, in terms of decision making and solving the problems that arise in their work. The individual nature of the coaching makes the scope of specific areas it can cover very broad, including planning the path of professional development, building one's own team, managing a research team (also interdisciplinary), mentoring, administering research projects, negotiation skills and communication of research results to various audiences, etc.
- *Skills-science popularizing science*³¹: Aimed at developing skills in popularizing science among young scientists (R1-R2 researchers). The call is open to scientists representing any field of science and it offers the possibility to win a prize in the competition for presenting an interdisciplinary scientific project.



- *Skills training*³²: It addresses academics and R1-R2 researchers. The beneficiaries of the programme are offered with:
 - Training improving skills in management of scientific research
 - Training in technology transfer and enterprise
 - Training workshops in scientific communication
- *SKILLS – IMPULS competition*³³: A competition for the best innovative ideas and research concepts with commercial potential. It aims at promoting applied research and developing scientists' skills related to the commercialization of research and development results. Also aimed at R1 and R2 researchers.
- *SKILLS_Engage*³⁴: The main objectives of the Engage competition are development of skills in popularisation of science or presentation of the results of scientific research for various non-scientist target groups, especially young people and students. The competition offers funding for innovative popularisation ideas, and encompasses all areas of science. There are also no restrictions on the method of popularisation. It may involve planning a series of lectures or meetings, writing a blog or designing a smartphone app popularising science.
- *SKILLS-FNP*³⁵: The programme's aim is to enable its participants (young scientists working in Poland) to make contacts and gain mentors among experienced scholars – in Poland and abroad – with recognised academic achievements to their name.
- *SKILLS-Interships*³⁶: The programme's aim is to enable researchers from Poland to improve their work skills by completing an internship at a research performing organisation or a company abroad. The programme focuses on following areas: research project management, research team management, interdisciplinary collaboration, technology transfer and entrepreneurship.

PORTUGAL

*Portugal 2020*³⁷ is the partnership agreement with the EU that puts into action the national strategy for economic, social and territorial development in the period 2014-2020.

Portugal 2020 builds on thematic operational programmes, regional operational programmes and sector operational programmes that aim at fostering competitiveness and internationalization, employment and social inclusion, human capital and resources sustainability and efficiency. COMPETE, the programme dedicated to competitiveness and internationalization, incentivizes types of collaboration and networking through the innovation cycle, that are very relevant to skills, as they effectively reinforce the



immersion of researchers into the industry environment and vice versa with the consequent acquisition of transferable skills.

SPAIN

The basic legal framework *Science, Technology and Innovation Act 14/2011*³⁸ establishes the rights for researchers. Among them, the right to professional development through the access to continuous training to develop capacities and competencies is highlighted. Also, researchers are entitled and encouraged to move between disciplines, sectors and geographically to reinforce their scientific knowledge and career development.

Also, the *Spanish Strategy of Science, Technology and Innovation 2013-2020*³⁹ which is the framework instrument that establishes the general objectives linked to fostering and developing RTDI activities in Spain during 2013-2020, has human resources as a key priority. Together with a better definition of the research career, the strategy aims at improving the employability of researchers in national and international academic organizations and private companies.

In the region of Galicia, the *Fundación Barrié* is a privately-funded foundation with the main objective of promoting the sustainable development of Galicia, and particular emphasis on initiatives concerning education and the development of talent. Thus, it has identified research career development as one of their priorities in the area of science⁴⁰. Barrié acknowledges that the development of

competencies and skills by researchers correlates with a better research career and outputs, so in 2012, Barrié launched a training programme on competencies targeted to researchers from the 3 public universities in Galicia (a grad school programme for R1 researchers and a leadership programme for R3-R4 researchers). In 2013, they opened the targeted audience to doctors (R2 researchers) from the regional health system and technologists from technological centres, research centres, etc.

UNITED KINGDOM

The United Kingdom is one of the countries with a more structured national approach to RPF. The *Concordat to Support the Career Development of Researchers*⁴¹ is the general agreement between funders and employers of research staff to improve the employment and support for researchers and research careers in UK higher education. It sets out clear standards that research staff can expect from the institution that employs them, as well as their responsibilities as researchers. The Concordat, widely adopted by UK research funding and performing institutions defines the national strategy and objectives in regards to researcher professional development.

The non-profit programme Vitae, initially mainly funded by Research Councils UK, is responsible for (i) raising awareness of the concordat; (ii) knowledge building around research career development; (iii) defining the Research Development Statement and Framework (RDS and RDF): a definition of the

knowledge, behaviours and attributes of researchers; (iv) organizing consolidation activities; and (v) research career development practice sharing.

Research Councils UK share a joint statement on skills training requirements for PhD candidates funded by them. The purpose of this statement is to give a common view of the skills and experience of a typical research student, thereby providing universities with a clear and consistent message aimed at helping them to ensure that all research training is of the highest standard, across all disciplines. It is not the intention of this document to provide assessment criteria for research training, but it does include specific requirements on transferable skills and the uptake of continued professional development. The *Researcher Development Statement*⁴² defined by Vitae is an evolution of the Research Councils' Joint Skills Statement (JSS) and is the key reference statement for the development of postgraduate researchers' skills and attributes and researchers employed in higher education in the UK. All the skills and attributes of the JSS have been incorporated into the RDS. A two-way mapping of the RDS and the JSS is available on the RDF section of the Vitae website.

It is worth mentioning that Vitae counts with invaluable data to evaluate progress of their work. On one hand, the *Careers in Research Online Survey (CROS)*⁴³ gathers the anonymous views of research staff in UK higher education institutions about their experiences, career aspirations and career development

opportunities. On the other hand, *The Principal Investigators and Research Leaders Survey (PIRLS)*⁴⁴ gathers anonymous views and experiences from principal investigators in relation to their role as managers and leaders of researchers and research groups.

NON-EUROPEAN COUNTRIES:

AUSTRALIA

The Australian government published in 2011 the *Research Skills for an Innovative Future report*⁴⁵ settings up the research workforce strategy to cover the decade to 2020 and beyond. Among its aspirations to meet the research challenges of the decade, research skills definition and career development is identified as key. Specifically the objectives identified regarding research skills and the country's vision for the future research workforce are:

- Australian firms have access to the research skills and experience that will enable them to move up the value-chain and be globally competitive.
- Australia's public sector research organisations have a sufficient research skills base to support their diverse roles.
- Australia's higher degree by research (HDR) graduates have the skills and attributes to both engage in world-class research and make productive contributions in a wide spectrum of professional roles.



- Australian universities, as the major providers of research training in Australia, have sufficient numbers of research qualified staff to develop the next generation of researchers.
- Australian research students, researchers and research support staff are provided with clear and equitable pathways for career progression and supported to meet individual career needs and objectives.
- Australian research employers have in place the communication channels and linkages which promote the effective diffusion of knowledge (both codified and tacit) across the economy.
- Australia effectively draws on and harnesses the potential contributions of all research qualified individuals

This implies that Australia's research workforce faces 5 challenging areas over the coming decade:

1. Meeting anticipated demand for research skills in the workforce;
2. Strengthening the quality of supply through the research training system by improving the standard and relevance of research training programs;
3. Enhancing the attractiveness of research careers;
4. Facilitating research workforce mobility; and

5. Increasing participation in the research workforce

CANADA

The National Research Council (NRC) is the Government of Canada's premier research and technology organization. Working with clients and partners, its goal is to provide innovation support, strategic research, and scientific and technical services. Among the services offered, it includes Career tools and resources for researchers, including Behavioural Competencies⁴⁶.

JAPAN

The *Japan's committee for Human Resources in Science and Technology* (of the council for science and Technology) has released several recommendations that implicitly and explicitly set directions for enhancing transferable skills training in doctoral and postdoctoral settings, indicating that the need for research career development is indeed a priority of the committee⁹.

REPUBLIC OF KOREA

The Korea Institute of R&DB Human Resources Development (KIRD) is a training and educational institute funded by the Korean government.

It offers transferable skills training programmes for researchers and Master's-level students, under its *Long-Term Development Strategy for 2020*⁹:

- Programmes for researchers: Basic competency; Leadership competency;
- R&D competency

- Master's-level training: English academic paper writing; Research experimental planning methods; Research data analysis
- Workplace experience: KIRD offers work-relevant courses on R&D project management, intellectual property management, and research performance
- Commercialization

UNITED STATES

The National Science Foundation (NSF) has a broad mandate in supporting the science and engineering fields. It has general requirements that *proposals for funding to support*

*postdoctoral researchers*⁴⁷ must include a description of mentoring activities, and each institution that applies for financial assistance must describe its plans for training and oversight in the responsible and ethical conduct of research.

In specific activities, NSF's *Integrative Graduate Education and Research Traineeship (IGERT)*⁴⁸ programme has been developed to educate United States PhD scientists and engineers with interdisciplinary backgrounds, deep discipline-specific knowledge and technical, professional and personal skills.



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ANNEX - References

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