REFLEX
euraxess

Main Elements of the Career Development Framework

Prepared by Bay Zoltán Nonprofit Ltd. for Applied Research

December 2016

SAIA, n.o.

Bay Zoltán Nonprofit Ltd. for Applied Research

ETH zürich

NTNU – Trondheim Norwegian University of Science and Technology

UNIVERSITY OF COPENHAGEN

The REFLEX project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under the grant agreement no 643510.

Contents

1. Introduction

The REFLEX project aims to increase the impact of existing career development tools in Europe. For this purpose it summarizes the already existing best practices in this career development framework in order to give researchers a brief overview on the main issues related to career development. The inputs to this framework are based on a desk research as well as scenario workshops organized in the frame of the REFLEX project.

The framework targets researchers of various backgrounds and career stages by enabling them to identify their appropriate career path and provide support to their career planning process. The Scenario Workshops of the REFLEX project provided inputs through the involvement of relevant actors in the workshop. The scenario workshops aimed to collect the main career development factors in country-specific context in the project countries: Denmark, Norway, Switzerland, Slovakia and Hungary. The Scenario Workshops were organized through the involvement of researchers and other stakeholders of career development, for example representatives of HR departments and PhD students, policymakers and business representatives. During the workshop, after plenary sessions homogeneous stakeholder groups were created and their blockers and boosters on career development identified. The result of the Scenario Workshops took the local approaches into consideration with an adequate size of 25-30 participants and a duration of 1-2 days in each project country.

Career development factors are important issues determining the advancement of researchers' career. The development of researchers' career has several components including increase in their professional responsibility and remuneration and diversification of their research topic if they are more interested in other fields. The career development framework focuses on the internal motivation of the researchers as well as the external factors influencing researchers' pathways. It can be differentiated according to the priorities of knowledge and intellectual abilities, personal effectiveness, research governance and organization, engagement, influence and impact.

The career development framework first introduces the ERA policies. It provides an overview of the European policy initiatives introducing a stable research network in Europe and the possibility for the researchers to develop their career. The career development factors and groups are only listed in this document but not organized according to priority. The framework then details the main factors with elements like mobility, networking, advisory on developing academic skills and company interaction.

The career development framework is used as an input to a training model in order to provide guidance for the career planning process of researchers. Based on all collected inputs, specialized trainings will be provided as well to further enhance the career development of researchers.

2. ERA policies' background: from “careers in research” to “researchers‘ careers”

“Careers” have been in the focus of EU research policies since the foundation of the European Research Area (ERA). The Commission´s Communication Towards a European Research Area (European Commission, 2000) of January 2000, introducing ERA as a guiding principle for the design of all research and development policies in the European Union, calls for introduction of a European dimension into scientific careers and giving the young a taste for research and careers in science.

Mobility of researchers was identified as one of the main keys to fostering of the European dimension of scientific careers (and as an increasingly inevitable part of any career in research). (European Commission, 2001). This mobility was hindered by a number of administrative and practical obstacles. In order to help researchers to overcome these obstacles, in 2003 the European Commission launched two initiatives aimed at improving information and assistance to researchers: the European Researcher’s Mobility Portal, intended to help researchers identify training and job opportunities throughout Europe and ERA-MORE, the European Network of Mobility Centres (from 2008 EURAXESS network) intended to provide mobile researchers assistance with the issues from visa through social security or employment to daily practicalities such as accommodation or car registration. Removal of these barriers should make mobility easier and careers in research more attractive for top talents from within and outside Europe.

Apart from these external barriers, non-transparent recruitment practices and working environment at many research institutions in ERA decreased the attractiveness of careers in research. In order to encourage organizations employing and funding researchers to introduce institutional policies leading to the development of not only excellent research conditions but also to the creation of excellent working environments The European Charter for Researcher and The Code of Conduct for the recruitment of researchers (Euraxess, 2015) were adopted in 2005. One of the principles included in the Charter is an introduction of career development strategies for researchers. According to the Charter, employers and/or funders of researchers should draw up, preferably within the framework of their human resources management, a specific career development strategy for researchers at all stages of their careers, regardless of their contractual situation, including researchers on fixed-term contracts. It should include the availability of mentors involved in providing support and guidance for the personal and professional development of researchers, thus motivating them and contributing to reducing any insecurity in their professional future. All researchers should be made familiar with such provisions and arrangements.

Later initiatives announced comprehensive approach towards human resources in ERA and included realising a single labour market for researchers as one of the six central objectives of ERA. Enhancing the training, skills and experience of researchers was identified as one of

the four areas related to the development of this labour market in which measurable progress should be achieved. Partnership between the Commission and the Member States was proposed to ensure real ownership of objectives and actions. (European Commission, 2010)

Such common action is, however, hindered by the considerable differences in the career structures existing in the ERA member states. Innovation Union Flagship Initiative from 2010 therefore, besides calling for actions ensuring the quality of doctoral training, attractive employment conditions and gender balance in research careers, calls for comparable research career structures. (European Commission, 2008)

European Framework for Research Careers created in 2011 should address this fragmentation (European Commission, 2011a), trying to describe the generality of the research career in commonly understood terms. The Framework is a voluntary transparency instrument intended to make research career structures generally comparable across employment sectors and countries. The Framework also describes the competencies necessary for the researchers´ careers at all career stages.

Competences that should be acquired in the process of doctoral training were described in the Principles of Innovative Doctoral Training drafted in the same year (European Commission (2011b). Transferable skills training, exposure to industry and other relevant employment sectors, international networking and interdisciplinary research options are listed among the key elements of PhD students training and confirm the increasing importance given to the inter-sectoral mobility.

The skills and competences of researchers should be improved in order to enable them to identify career opportunities wherever they are. The focus is no more on the careers in research but on the researchers´ careers in their variability. This puts increasing requirements on the career development support for researchers. A Reinforced European Research Area Partnership for Excellence and Growth from 2012 therefore invites various stakeholders to develop strategies to support the career development of researchers in line with the HR Strategy for Researchers.

ERA Roadmap for 2015 - 2020, the last strategic document determining the direction of ERA, confirms open labour market for researchers as one of the priorities of ERA. (European Commission 2011c) And points out the necessity to improve inter-sectoral mobility between public and private sector research bodies in both directions and at all career stages. This might be addressed in a number of ways, including adoption at national level of the Innovative Doctoral Training principles, generalising the adoption of the European Framework for Research Careers and strengthening initiatives on the professional development of researchers, particularly at an early stage in their careers.

But how have these initiatives and political declarations so far been translated into the practice in the ERA member states?

Two working groups mandated by the ERA Steering Group on Human Resources and Mobility (ERA SGHRM) did research in this issue. The SGHRM Working Group on Skills in 2012 found out that while there is a high level of activity in providing skills training for researchers on R1(researchers up to the point of PhD level) there is a sharp decrease in skills training beyond this group. From recognised researchers through established researchers to Leading Researchers, what little training exists is dominated by academic careers skills. (ERA SGHRM, 2012)

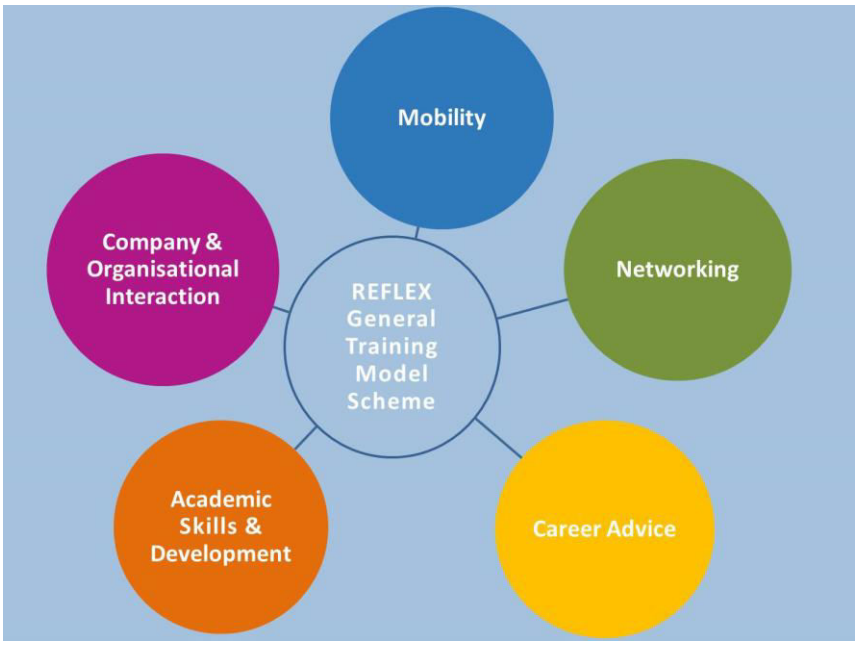
In 2014 The SGHRM Working Group on the Professional Development of Researcher was mandated to find out to what extent research institutions are aware of the competencies needed to be an effective researcher; have structured Professional Development Frameworks made available to them; and are equipped to review and evaluate their competencies and career development. (ERA SGHRM, 2014) The survey conducted within the activities of the working group concluded that many countries appear to have nothing in place. More support is available for early career researchers (particularly at the R1 stage) but many survey respondents referred to the use of frameworks across all stages R1 to R4. The WG identified the need for professional development framework of some sort which should include employability issues and stressed the importance of self-reflection by researchers should feature in the tool and it should be rooted in systematic approaches within research performing organisations.

Being aware of the gap between the political declarations and reality European Commission has lately decided to encourage the member states and research organisations to actively implement researchers' career development strategies. One of the most effective tools that could contribute to the wider implementation of the HR Strategy for Researchers is Article 32 of Grant Agreement (Recruitment and working conditions of researcher) for Horizon 2020 projects. This article commits all beneficiaries of Horizon 2020 to take measures to implement the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers including the career development of researchers. (European Commission, 2015) European Commission also decided to broaden the mandate of the EURAXESS network that should not only focus on the mobility issues in the future but should also get involved in the provision of career development services. And finally the Commission has also supported several projects focusing on development of researchers' career development tools and services (one of them being also REFLEX).

3. The main factors of career development

This chapter lists and summarizes the main factors to be considered by researchers as well as by research institutions and universities when planning to support the career development of researchers. These factors, including mobility, networking, advisory on developing academic skills and company interaction, are relevant for researchers on all career levels,. There is a comprehensive overview of factors provided by introducing the blockers and boosters for developing their career by considering the specific career development factors. Some examples of services and measures and also good practices are introduced.

Picture 1: Basic elements of REFLEX Career Development Framework



The tools on career development were collected via questionnaires from the countries of the project partners (Slovakia, Hungary, Switzerland, Denmark and Norway. Some of the best practices are also listed in this chapter in order to show examples for each career factor.

3.1 Mobility - The ability to move freely and easily

Mobility and the international cooperation of researchers enable the exchange of experiences among researchers working in different countries and environment.

By enhancing the mobility of researchers, added value is gained, like working for an employer of higher reputation and experiencing the cultural and professional differences, as well as differences in the work environment in a new country, which might be quite appealing, especially for a young, early-stage researcher. Therefore treating mobility with a high priority in the career development framework will enhance objective and internal factors. Objective factors include financial issues, the location of the higher paid job and the location of a higher reputation employer. The internal motives are: the need for environment and cultural change, attractiveness of the "new" country and the willingness for and adventure to live and work in another country, especially for young researchers before finishing their PhD. (IDEA Consult, 2013)

Blockers related to mobility

The objective barrier of mobility is the scarce availability of funding, e.g. the lack of scholarships for PhD students or maintaining the level of remuneration for advanced researchers. Due to a lack of an international personal network, it may also be hard to find a professionally appropriate host institution. Researchers may also fear losing their already existing local professional network after relocation and dual career couples may experience a setback in their careers, as finding professionally challenging positions for both people can be extremely difficult. Practical reasons, such as language barriers, expensive or low-quality accommodation, an inadequate social system and a variety of administrational problems, such as difficulties of obtaining a visa can also discourage researchers.

Boosters related to mobility

Researchers at different career stages have different priorities in mobility. For example, for a mobility of a PhD student, the availability of a PhD position in another country, the quality of education and professional support are the main motives. Experienced researchers are motivated by new challenges, research autonomy, family reasons, culture and the level of training.

Especially for young talents, the main motivational factors when moving to a new country is building an international network in their scientific field and building an international career on a long run. The mobility support services should target several groups: PhD students, experienced researchers, outgoing, returning and incoming researchers and their families. (SAIA, 2015)

Tools related to improving one's work-life balance – a healthy balance of pursuing a career and maintaining private life - can also make a country quite attractive when considering mobility. Such tools can be provided by the state (creating a favourable environment for

part-time employment, a possibility of paternity leave or a family-friendly social system in general) or employers themselves (Dual Career Strategies to attract dual career couples or establishing part-time and remote positions). (IDEA Consult, 2013)

Examples for mobility services

Mobility is a requirement for researchers to advance in academia but they may face difficulties before and during their mobility, e.g. when trying to integrate into the local communities. Some services on integration in order to help the researchers in their mobility:

- Legal issues: Providing support on legal issues including the information and access about working and residence permits for the whole family. It helps the integration of mobile researchers.
- Help with administrative and practical issues (as offered by the EURAXESS Services Network)
- Cultural courses: Providing information about unwritten rules and how to act in various cultural settings.
- Language courses: Learning a specific language can be key in moving to or staying in a particular country. PhD students may have language problems (their work requires the knowledge of the local language) and this is one of the barriers of international integration.
- Mobility coaching: Getting information about new opportunities in specific countries. For example: What should one do to be able to move, are there limitations, contacts, grants available etc.

Examples of existing good practices

- *MTA (Hungarian Academy of Sciences):* The main aim of the Momentum Program is to ***foster the homecoming of outstanding young researchers to Hungary.*** The program also aims to decrease the emigration of young researchers, and extends career possibilities and increases the competitiveness of MTA's research institutes and participating universities. The impact and success of the model is highly acclaimed by the international scientific community

- *NTNU (Norwegian University of Science and Technology):* The University launched the Onsager Fellowship programme, which is designed to ***recruit young, internationally recognized researchers*** to strengthen the university's academic staff.

- *MTA (Hungarian Academy of Sciences):* The Hungarian Academy of Sciences launched its visiting scientist programme in 2012. The programme fosters the involvement of outstanding foreign researchers in order to support MTA's research centres and strengthen its teams. As a prerequisite, there is a research plan required from the applicants, which is evaluated by independent experts and a professional jury. Successful applicants may spend three to twelve months in Hungary ***as visiting professors.***

Examples of international funding schemes and tools promoting research mobility

- https://euraxess.ec.europa.eu/jobs - EURAXESS jobs database lists thousands of vacancies and fellowships from more than 40 European countries and other regions in the world.

- https://ec.europa.eu/jrc/en/working-with-us/jobs/vacancies/function-group-iv-researchers - job opportunities for research fellows at the European Commission

- https://www.embl.de/training/postdocs/06-funding_opportunities - EMBL provides a comprehensive selection of postdoc scholarships provided by a variety of foundations and institutes

- http://academicpositions.eu - academic positions in Europe with a search engine and many prestigious future employers

- http://www.eurosciencejobs.com - academic positions in Europe with a search engine and an alert function

- http://www.society-in-science.org/?gclid=CK687bS_h9ECFcafGwodd7wHcw - a postdoc scholarship that awards young researchers around the world with a generous personal research grant, giving them the freedom to work on whatever topic they choose anywhere in the world

- http://jobs.sciencecareers.org/jobs/europe/#browsing - a broad range of research positions in academia, mainly in the fields of life sciences, physical sciences and health science

- http://scholarship-positions.com - a worldwide listing of scholarships up to postdoc level

- http://www.eui.eu/ProgrammesandFellowships/MaxWeberProgramme/Index.aspx - Max Weber Fellowships offer training to develop professional skills such as teaching, academic writing and publishing, and job market presentation

- http://www.hfsp.org/funding/postdoctoral-fellowships - HFSP postdoctoral fellowships encourage early career scientists to broaden their research skills by moving into new areas of study while working in a new country

- http://www.embo.org/funding-awards/fellowships - EMBO offers two year fellowships with a focus on international exchange -as such, movement between countries is a prerequisite of this biannual fellowship

- http://www.wallenberg.com/kaw/en - being one of the largest private financiers of research in Europe, the KAW Foundation grants funding in two main areas; research projects of high scientific potential and individual support of excellent scientists

- https://wellcome.ac.uk/funding/scheme-finder - Wellcome is a global charitable foundation, both politically and financially independent that supports scientists and researchers, takes on big problems and sparks debate

3.2 Networking

However marginal it may seem in a researcher's career development, networking may contribute to great steps forward in research simply by connecting important actors – within a scientific field, interdisciplinarily, or between industry and academia. Therefore, the greatest advantage of increasing networking activities is the enhanced visibility of researchers and their research projects both within and outside academia.

Blockers related to networking

One of the main blockers related to networking is the significant amount of resources required. A researcher's ability to attend networking events, such as conferences abroad, may solely depend on the availability of financial means. Even when a sufficient amount of money is accessible, one may find it difficult to fit networking into their schedule on top of several research projects.

Boosters related to networking

Forms of collaboration among universities are one of the most common methods to enhance interdisciplinary collaborations and create collaborative research environment (IDEA Consult, 2013). The most promising would be to enhance the involvement of industry actors and the collaboration of the academic – non-academic sphere as well (LERU, 2014) in research.

Collaboration and communication within the same institution are also necessary for enhancing the level of research results. (SAIA, 2015) Interdisciplinary collaborations can be created by fostering the possibility of the PhD students to participate at conferences, workshops, team work, creative interdisciplinary projects, and transferable skills training for researchers with different interdisciplinary backgrounds to expand their network and be updated on novel technologies. (UCPH, 2015) Creating an association can stimulate interdisciplinary collaboration. This network could open up for new career options in other disciplines as well.

Examples of services and measures

Possible types of networking initiatives:

- *Alumni association:* Association of former university students
- *Network of colleagues:* Informal networks are sometimes formalized, giving researchers valuable information within their research topic. They can be institution based or can have a wider geographical coverage (e.g. expat / diaspora networks).
- *Conferences:* Networking with other experts at conferences provides the option of interacting at many levels.

- *Former researchers' database:* Researchers who were involved in the same topic at the current university could share their ideas about job openings and new career opportunities.
- *Mentoring:* Mentoring of researchers creates the opportunity of sharing knowledge between peers, seniors, inside and outside academia and across borders of countries or disciplines. According to the definitions, mentoring is for supervising and advising a researcher on a long term, while coaching is to supervise the implementation of a task on a short term, in align with its duration. (Brockbank, McGill, 2006)
- *Academy-industry cooperation:* The involvement of PhD students in academy-industry research projects (which also fosters interdisciplinary collaborations) is essential in the career development of researchers. Their participation would enhance the number of high-quality publications developed. PhD students are not always aware of their capabilities, which they can provide for the industrial actors. The option to choose a supervisor with knowledge within the industry and a performance development review (individual talk with a manager at least once a year) should be further developed. The participation of academic actors in career workshops and visit companies would also help in building the academia – industry cooperation and transferring the knowledge of researchers to the academic sphere (UCPH, 2015)

Examples of existing good practices

- *Aarhus University:* The "Empower Talent!" ***program matches staff at the assistant professors' (assistant professor/researcher/postdoc) level with more experienced colleagues*** at associate professor level or above. The purpose of the scheme is to contribute to supporting and developing the professional and personal career potential of the academic staff.

- *MTA (Hungarian Academy of Sciences):* MTA offers a programme to foster the cooperation between Hungarian universities and MTA. Its objective was primarily to ***establish scientific workshops led by outstanding researchers at Hungarian universities*** and at certain other public institutions (typically libraries or archives) involved in research activities, as well as to support the operation of such workshops. Other aims of the programme include boosting the efficiency of research work in the initial and intermediate phases of a research career by means of striking a balance between researches and teaching activities; to provide room for the elaboration of research topics which prove to be novelties as they are not among the topics covered by MTA's research network.

- *MTA (Hungarian Academy of Sciences):* The "Researcher Professor Emeritus" programme is designed to ***support senior representatives of all scientific domains***. It provides additional remuneration and the necessary infrastructure for the continuation of researchers' scientific work after retirement. It is especially recommended for researchers that were employed by one of the institutions of MTA for a period of at least ten years and possess an outstanding scientific record. The "emeritus" title and the rights it entails are awarded for a definite period and for a definite scope, fixed by the President of MTA on a case-by-case basis.

- *Pavol Jozef Safarik University in Kosice:* SOFOS – The "Knowledge and Skills Development of the Staff and Students" project aims to increase the erudition of researchers for international cooperation by special interdisciplinary education and international fellowships. Development of interdisciplinary knowledge is supported via the creation of the ***network of training workplaces for the interdisciplinary education***. These workplaces organise the practical trainings (or in some cases training modules) focusing on state-of-the-art theoretical knowledge, methodological tools and research methods applied in the interdisciplinary research focusing on the specific problems and topics.

- *Technical University of Denmark (DTU):* The University organizes a three-day

workshop, which aims ***at preparing postdocs for their next career steps and complementing their technical qualifications with essential soft skills***. As such, it provides an intensive, highly interactive and fun crash course in the soft skills underlying professional success, in both academic and non-academic careers. At the same time, the workshop provides a great opportunity to network and establish collaborations among the participants.

3.3 Career Advice and Academic Skills & Development

Writing, teaching, applying for grants, planning, grant management including administration, publishing etc. are all academic skills which researchers need to master and constantly improve in order to be able to pursue a successful scientific career. Advisory services and career advices are provided by research institutions and universities, intending to develop the career of hosted researchers. Helping and encouraging researchers to create opportunities for progress in their current and future work including tools for career clarification has significant importance in gaining funding. The development of soft skills can also be targeted by career development courses and its added value emphasized for the students. (SAIA, 2015)

Blockers related to academic skills

It is quite paradoxical that a lot of information (an "ocean of information") is available around us for support but there is a lack of relevant or streamlined resources for efficient orientation (BZN, 2015). There is a need on the researchers' side to gain specific information about the jobs and transferable skills available in order to have knowledge of writing applications for scientific grants, knowledge about the defined academic career path, to speak the local language of the country where the researcher is working, and also specific, country related knowledge on practical issues such as taxes, legal specifications especially in employment contracts are also necessary to perform successful research tasks. The lack of any of the former factors can be a blocker.

Boosters related to academic skills

Intellectual challenge is a subjective but significant motivational factor of the researcher. It has several components: the opportunities which are provided by a new workplace of the researcher, new fields of research, higher expectations of project (industry) partners and the risk of implementing the research. Subjective factors are the focus of trainings, level of responsibility, the degree of independence and also the innovativeness, research fields of high academic or societal prestige.

Examples of services and measures

Some tools to support the career of researchers:

- *Labour unions:* An organized association of workers, often the same trade or profession, formed to protect and promote their rights and interests. These associations often assist with career support which can be quite different in each country, though.
- *Career coordinator:* A person at a university whose job is to organize events or activities and to negotiate with others in order to assist researchers' career support.

- *Personal development review (PDR):* An annual or bi-annual talk with a senior research manager/supervisor where researchers get the opportunity to review the past year, identifying successes and challenges. Moreover to plan for the future, taking into consideration the objectives of the department and its possibilities, and identify learning and development opportunities including dialogue about career development/career paths.
- *Career center:* A career center consisting of counselors specialized in various career development and self-assessment tools. They help individuals to make informed career choices.
- *Career planning tool:* Tests, programmes, models and assessment tools which help researchers to reflect on their career and create new perspectives.
- *Career coach:* A trained person who guides researchers in planning and managing their careers.
- *Career development workshops:* A workshop where researchers are informed on how to look for a job: where to look, how to write an application and CV, how to network, how to use transferable skills etc.
- *Introduction to early career dialogue:* A workshop where researchers with temporary contracts get information about career options, limitations and possibilities on where and how to get career support, hear stories from former colleagues etc.
- *Facts and statistics:* Information on the job market, on researchers' career paths, options where to work, salary in different sectors etc.
- *Funding & grants:* A workshop about how to write a successful application and where and how to apply for research grants. In the early stage of the researcher's career, scholarships provide the possibility for career development. Experienced researchers are mostly motivated by a position at a non – academic actor, where they can gain more salary, than in the academic sphere. (LERU, 2014)The difference between the career stages of researchers (R1-R4) (LERU, 2014) is also relevant, when considering financial issues. The security of the job and the stability of the work are also taken into consideration by the researchers. The lack of funding and the instability of the research system is also an obstacle. (SAIA, 2015).
- *Project planning & management:* A course developing researchers' project management skills and ability to implement and evaluate projects where concrete tools assist researchers in their future project work.
- *Information on academic publishing:* A workshop about where researchers can publish their articles, who to contact and eventually how to submit a successful publication.
- *Academic writing:* How to write a good and solid paper, what techniques can be used, who is the target group, what is your key message, how to use references etc.

- *Leadership course:* Courses about leadership skills and how to lead project partners, how to manage a research group and how to manage people focusing also on the researchers own development as a manager, e.g. strengths and development points.
- *Teaching course:* A programme on how to transfer scientific knowledge to a class room, how to teach different generations and differentiate teaching, how to teach in an intercultural setting, develop pedagogical knowledge etc.
- *Teaching competency profile:* A pedagogical competency profile is a description of a number of areas that are important for mapping teachers' overall teaching competences. Focus is on the teacher's mapping of own basic knowledge of the subject as well as academic and teaching qualifications.
- *External teaching (open university):* Researchers can get experience in teaching at for example an open university
- *"Branding" of researchers:* Academic skills need to be communicated to a variety of organisations and companies. Researchers need to publish their research results to a wider audience in order to reach potential collaboration partners. Overview of the researcher career hierarchy: A document where it is clearly stated what the career options are within an institution and what the requirements are to reach these positions, not just in legal terms but also in more concrete terms.
- The motivation and the performance of researchers is highly dependent on *personal characteristics and future perspectives*. The work overload (administration, public procurement, meetings, teaching) and lack of support services (including the services for international researchers) are some of the elements of the working atmosphere. (SAIA, 2015) Besides the work overload, the general environment of the employees, like the number of employee working in the same office, the general working culture and collaboration at the workplace is also a significant element in the development of a career. There are other determinants of the working atmosphere, like the lack of diversification, the pressure of publication and the "taboo" of the topic to leave the academic sphere to industry. (UCPH, 2015)
- *Removing the restrictions* (age limitations, necessity for international experience, and individual research grants for early stage researcher's right after PhD) is a key to enhance the career of researchers.

Examples of existing good practices

- *Copenhagen Business School:* The university provides ***sessions with a career coach***, where professional and personal competences, future career or job goals, personal values, and the methods in identifying the career of researchers are the topics. All PhDs who are 18 months into their PhD have the opportunity to have 2 clarification sessions with a career coach.

- *University of Copenhagen:* Students can apply for coaching (up to 5 sessions) by chosen coaches that ***have special experience with the situations that PhD students may encounter***. If 5 sessions are not enough, the students must make a renewed application. Any problems, personal or academic, can be dealt with. Typical challenges for PhD students are stress, time and project management, difficult relations to supervisors or other, writing blocks, insecurity of career choice, high expectations to themselves and from others.

- *Aalesund University College (AAUC):* The ***Training course in R&D administration*** organized by the university is relevant for all who works with, or have plans to work with research projects and/or scientific publications. Topics: AAUC Research guidelines, budget and accounting, projects step by step, templates, procedures, applications, contracts, research ethics, IPR

- *Geological survey of Denmark and Greenland:* Mentor programme aims at supporting young researchers. The mentor and mentee cooperate for one year (which can be extended) and holds regular meetings. The mentor is chosen from a different department than the one of the mentee. The talks are confidential, and contents are decided by the mentor.

- *Ministry of Agriculture, Hungary:* The aim of this programme is supporting young people to start their research career in the institutes of NARIC. Young postgraduate students (under the age of 35) ***can work in the institutes with the leadership of a mentor***. In the first stage of the programme, selected young people are offered a 6 month, full-time contract (Phase 1). This phase can be considered as a “test”: grantees try themselves as researchers. After this phase there is an opportunity to extend the contract for another 2-3 years (Phase 2). Under the contracts, grantees work under the supervision of a mentor, receive salary, costs of their PhD studies are covered by the programme and may receive contribution for their accommodation costs and fund for participating at conferences. Mentors receive a bonus for their work. Both grantees and mentors are obliged to prepare reports.

- *MTA (Hungarian Academy of Sciences):* The Young Scientists Programme is supposed to promote the inclusion of new generations of scientists in the research system of MTA and to support the training of young scientists. The calls for applications within the programme are published annually, for a period of three years. Since 2006 priority research topics have been set for applicants to choose from. In the evaluation of the applications such aspects as priorities of the given scientific domain, the essential requirements for a globally competitive basic research project as well as potential social and economic benefits are taken into account. Participants of the programme do not only carry out research activities but they also ***attend at training courses, hold lectures, and attend at conferences.***

- *NTNU (Norwegian University of Science and Technology):* The University offers ***leadership training for institute leaders and other leaders,*** mentoring programs for women and leaders. Each faculty has EU advisers that can help with applications for EU funds. The NIRS (NTNU International Researcher Support) offers different support services for foreign academics –Accommodation, Dual Career, Social events, culture training.

- *University of Basel:* During and after a course of studies or a PhD, the ***Career Service Centre*** helps graduates to successfully launch their careers.

- *University of Copenhagen, Faculty of Science:* ***The JTI profile*** consists of an online questionnaire and a 3-hour workshop. It aims to improve students' communication and collaboration skills e.g. in a study group, with a present or future supervisor or future colleagues. The programme aims to get to know their own strengths and weaknesses when they do a project or assignment, and gain a greater understanding of their own and others' resources and the different ways they solve tasks.

- *University of Bern:* The Vice-Rectorate Research supports outstanding professional achievement by researchers at the University of Bern with a variety of programs. It launches and coordinates initiatives and projects that support the work of early career researchers across all faculties.

- *University of Lausanne, University of Fribourg, University of Geneva, University of Neuchatel, HES-SO:* The REGARD program offers ***workshops for young female academics and for women professors*** of the universities of French-speaking Switzerland. Its aim is to develop competences and propose concrete tools for career management and supervision. These workshops also create opportunities for discussion and the exchange of experience between women researchers. They also aim to increase awareness about gender equality in the academic career.

- *University of Lucerne:* ***Individual coaching for female researchers*** is organized, in order to target academic career planning, finding a job, a new career goal, to write application documents to find funding for a proposal or a new research. There is also coaching offered for own time and self-management, or about the compatibility of academia, care and children. Coaching for young female researchers offers coaching for those that aim at eradicating a difficult or unclear situation on her own career path. The main goal is to contribute to the career development of female researchers and to motivate them for a permanent position at UiO.

- *University of Oslo:* The ***mentoring programme for female postdocs*** is a project where a mentor with integrity and influence in the academic environment takes a role as advisor and conversation partner for a younger, female postdoc, who intends to develop her career and know more of the organisation's formal and informal structures.

- *University of Tromsø – the Arctic University of Norway:* The project of the institute improves ***gender balance in senior scientific positions*** by enhancing career development, motivating women and reducing the time needed to reach professor level.

- *University of Oslo:* ***The Education Leadership Programme*** at the UiO is a leadership training programme where various leadership roles of the education field are in focus and participants learn about their role, their organization and about how they can use the room for maneuvering as an education leader provides.

- *University of St. Gallen:* CSC-HSG Programme addresses career relevant topics such as the preparation of professional application documents or preparation for job interviews. The programme also provides ***support to a successful entry into professional life as well as with goal-oriented career planning.*** Promotion of Young Scientists focuses on supporting the new generation of academics on career and research-funding opportunities. Closely connected with this are questions of research strategies, vocational guidance and career planning. Science Peer Mentoring grants development funds to groups of emerging researchers wishing to actively further their academic careers. This is adapted to their own needs and should enable them to examine the requirements of an academic career, reflect on their own career development and expand their essential interdisciplinary skills and relationships.

3.4 Company & Organisational Interaction

Many researchers will have a career or part of their career outside of academia. They might start running their own businesses or join a company as a researcher. Researchers need information about the possibilities in the industrial sector. They have to know more about the available positions, the actual research field in the industrial sector and the persons responsible for running the programs. The participation of researchers in technology transfer processes also requires knowledge of intellectual property (IP) issues and providing a stable base for the commercialization of research results.

Blockers related to company interaction

Different value systems exist in the academia and the industry, which makes the move between them more difficult and affects networking opportunities and capabilities as well.

Researchers often do not have enough time to manage their careers because of teaching and doing their research in the meanwhile. Some of the researchers have reluctance to leave their own 'comfort zone', to discover new things and challenges for themselves. Hidden or openly communicated age limits hinder career opportunities of early stage researchers. Some researchers avoid gaining experience in the industry, in fear that they will be considered "too old" to continue their careers in academia or that they make irregular career steps. In order to tackle the 'time' factor, the researchers have to learn to delegate and prioritise tasks. It is also important to communicate more actively, ask for feedback from the experts, tackle the missing visibility through social media, conferences, blogs and chaining sessions. Researchers have to become more aware of the career opportunities outside academia. The tools for facilitating the process are counselling services, career websites and forums.

When joining the industry sphere as a researcher it is important to be aware of the rights and responsibilities on IP issues. IP issues may also affect publication opportunities negatively. Besides IP, the control of human resource rights is also to be considered. As an example, the type of contract and the prospects of a permanent contract should be taken into account. The participation of researchers in academic research projects conducted with the involvement of the private sector may be hindered by the undefined or under-defined legislative background. (SAIA, 2015)

Boosters related to company interaction

The active cooperation of the academic and industry sphere provides opportunities for the researchers to have an active role in technology transfer. Researchers in the industrial sector receive higher remuneration and acknowledgement, and may open new professional perspectives, (new fields of research, funding). Many academic institutions have a technology transfer office, which deals with the commercialization of research results. The role of researchers cooperating with such offices is to provide their research results for the

experts in business creation, and make further modifications on their product or technology if required. For example, if, according to a potential investor, the technology needs further development, the first person asked for professional advice, or for the further development will be the researcher or inventor him/herself, as he possesses most of the information required for technology development. As for technology transfer in the academic sphere, by working together with an industrial actor the researcher can gain almost the same motivations.

Examples of services and measures on company interaction

- *Company matchmaking:* An event where researchers and companies "speed meet" to get acquainted and find out if they can collaborate together in the future. These events can also be more informal without establishing specific "corporate agreements".
- *Company visit:* An event where researchers visit a company to get insightful information that can help them make decisions concerning their future career paths.
- *Technology transfer:* The transfer of new technology from companies to researchers and vice versa in an attempt to create future collaborations.
- *Employment panel:* Collaboration between universities and companies and industry where the latter will explain what their needs are in connection to knowledge and research.
- *Company/Job fair:* An event for employers to meet with job seekers. Attending to a job fair is an easy way to connect to numerous employers quickly.
- *Internship (industry + academia):* The position of a trainee who works in an organization, sometimes without payment, in order to gain work experience or satisfy requirements for a qualification.
- *Workshops with the topic of »How to be attractive for the labour market«:* A workshop where researchers get concrete information on how to apply for jobs while being a researcher. What transferable skills are needed, how to communicate specific detailed research knowledge in a comprehensive way to people who do not know the specifics and what extra courses to take to qualify for a specific career.
- *Workshop with the topic »How to become an entrepreneur«:* A workshop about how to starting company or selling one's knowledge as a consultant. Practical information on how to create a business plan, create funding, register a business, how to deal with taxes, how to get customers and how to sell a product or service.
- *Workshop with the topic »Business understanding«:* A workshop about the details of working in the industrial sector.
- *Workshop with the topic »Leaving academia«:* A workshop about concrete options on where to work outside academia. Company representatives will explain their needs and show how researchers can be valuable in academic jobs in organizations outside academia, where and how to apply etc.

Examples of existing good practices

- *Aarhus University:* The University programme provides bridge building activities between PhD students and industry in order to support transition from university to the industry. The program aims at preparing the students for ***solving industry-specific problems and successfully finding a relevant company to conduct a research of high added value***. The tools are individual counselling and coaching, career workshops and seminars, company visits, company events and mentoring.

- *Central European University:* The Career Services Unit assists individually or in groups through exploring career options (in academia, government, not-for-profit, business), CV/resume and cover letter advice, internship or job search strategy, preparing for interviews, job offer or salary negotiation, networking, seeking mentoring from alumni, using social media tools in job search. The unit also organizes various programs and events such as an ***annual career fair with international employers on campus or the Alumni Speaker series***. Specific services are offered for PhD students: a Professional Skills Program with open enrolment workshops for doctoral students beyond their second year.

- *Centre for the Development of PhD Students (Centrum rozvoja doktorandov):* The mission of the Centre is to help improving the quality of doctoral scientific research and teaching processes at the Faculty of Economics through creative activities and to establish and strengthen the collaboration with practice. The centre develops activities contributing to the commercialization of the research results and linking the results of PhD students with the needs of economic practice. The centre supports the participation of students in domestic and international projects; encourages ***networking between doctoral students and business, and their collaboration on joint thesis projects***; organises international conferences and workshops for PhD students and young researchers; collects and distributes information on upcoming conferences and other scientific events and develops cooperation between PhD students and young researchers.

- *Graduate School of Social Sciences, University of Copenhagen:* A two-and-a-half-day course prepares PhD students to work with real-life problems, ***makes companies understand the skills of PhD students*** and offers general matchmaking with companies. The course targets questions such as: “What problems can you solve for companies and organizations and how to find answers for them based on your own expertise and knowledge?” „What value can you create with your expertise to the private sector and public organizations?”
- *SUPSI - University of Applied Sciences and Arts of Southern Switzerland:* ***Advisory***

services offered by the University create a closer link between the business and university spheres.

- *The Lucerne University of Applied Sciences and Arts:* The University helps students to get started on their chosen career path and plan their career trajectory. The Careers Service publishes job adverts and organizes ***recruitment fairs for graduates.***

- *University of Copenhagen, Faculty of Science:* A ***matchmaking event*** brings together companies presenting concrete problems/project ideas and researchers. The Matchmaking event is held 4-6 times a year. Each time with a different topic e.g.: Geo Water Environment, Innovative Food, Biobased Solutions, Data and Biotech.

- *University of Copenhagen, Science Faculty:* There is a 4-day course organized by the University where ***PhD students work on self-understanding, career models***, analyzing job advertisements, creating and maintaining networks, mapping competences, CV management, writing job and grant applications, training job interviews and career planning.

- *University of Geneva:* The "Uni-Employment Centre" offers a range of services free of charge, including courses and seminars for finding a job, computing resources and internships. The University also organizes conferences and meetings with companies. It provides ***assistance for those who need to help finance their studies, including teaching, baby-sitting, tutoring and secretarial work.***

- *University of Lausanne*: **A non-academic workshop reviews the current employment situations** and helps participants prepare for a non-academic career path, whether in the private or public sector. The academic workshop targets researchers at postdoctoral level.

- University of Zurich: The career service programme of the University provides a variety of services like ***helping people towards finding a job outside academia***. The office of the University also offers career advice, coaching and training and supports the development of transferable skills for students.

4. References

1. Anne Brockbank, Ian McGill (2006): Facilitating Reflective Learning Through Mentoring and Coaching, Kogan Page Ltd.
2. BZN (2015): REFLEX scenario workshop series: National scenario workshop in Hungary, Outcomes report, Hungary, Bay Zoltán Nonprofit Ltd. for Applied Research
3. European Commission (2000): Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions - Towards a European research area. http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52000DC0006
4. European Commission (2001): Communication from the Commission to the Council and the European Parliament - A mobility Strategy for the European Research Area /* COM/2001/0331 final */ http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52001DC0331
5. European Commission (2008): Communication from the Commission to the European Parliament, the Council, the European Economic and Social Commitee and the Commitee of the Regions, http://ec.europa.eu/research/innovation-union/pdf/innovation-union-communication_en.pdf#view=fit&pagemode=none
6. European Commission (2010): Communication From The Commission to the Council and the European Parliament: Better Careers And More Mobility: A European Partnership For Researchers, http://ec.europa.eu/euraxess/pdf/research_policies/comm_pdf_com_2008_0317_f_en_communication.pdf
7. European Commission (2011a): Towards a European Framework for Research Careers http://ec.europa.eu/euraxess/pdf/research_policies/Towards_a_European_Framework_for_Research_Careers_final.pdf
8. European Commission (2011b): Principles for Innovative Doctoral Training http://ec.europa.eu/euraxess/pdf/research_policies/Principles_for_Innovative_Doctoral_Training.pdf
9. European Commission (2011c): Council conclusions on the European Research Area Roadmap2015-2020. http://data.consilium.europa.eu/doc/document/ST-8975-2015-INIT/en/pdf
10. ERA SGHRM (2012): Professional Development of Researchers – Provisions for the Future http://ec.europa.eu/euraxess/pdf/research_policies/Professional_Development_of_Researchers_Provisions_for_the_Fut.pdf
11. ERA SGHRM (2014): Report of the 2014 SGHRM WG on Professional Development of Researchers, http://ec.europa.eu/euraxess/pdf/research_policies/Final%20Report%20of%20the%20ERA-

SGHRM%20WG%20on%20Professional%20Development%20of%20Researchers%202014.pdf

12. Euraxess (2015): The European Charter for Researchers, http://ec.europa.eu/euraxess/index.cfm/rights/europeanCharter
13. European Commission (2015): AGA – Annotated Model Grant Agreement (2015) http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf
14. IDEA Consult (2013): MORE2 final Report: Support for continued data collection and analysis concerning mobility patterns and career paths of researchers, http://ec.europa.eu/euraxess/pdf/research_policies/more2/Final%20report.pdf
15. LERU League of European Research Universities (2014): Good practice elements in doctoral training report, http://www.ub.edu/escola_doctorat/sites/default/files/internacionalitzacio/LERU_good_practice_doctoral_training_final.pdf
16. SAIA (2015): REFLEX scenario workshop series: National scenario workshop in Slovakia, Outcomes report, Slovakia
17. UCPH (2015): REFLEX scenario workshop series: National scenario workshop in Denmark, Outcomes report, Denmark, University of Copenhagen
18. CRAC (2012): Vitae - Realising the potential of researchers, Researcher Development Framework

5. Contact information

This report has been written by the Bay Zoltán Nonprofit Ltd. project team. For more information about the report please contact:

Katalin Kovács
katalin.kovacs@bayzoltan.hu

Ádám Molnár
adam.molnar@bayzoltan.hu

For more information about the REFLEX visit the project website www.euraxess-reflex.eu.