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LEGISLATIVE ACTS AND OTHER INSTRUMENTS

Subject:	Annexes to COUNCIL RECOMMENDATION on a European framework to attract and retain research, innovation and entrepreneurial talents in Europe

ANNEX I

Examples of occupations for researchers across sectors along the R1-R4 profiles

With due regard to national competences and to facilitate the use of references to the profiles in all vacancies specifically addressed to researchers, this annex provides examples for each sector with the aim to make researchers' careers comparable and interoperable across employment sectors and countries.

Entities concerned should be mindful of the understanding of the Researcher's definition and its profiles as reflected in the Recommendation 1, 2, 5 and 6.

Table 1: Examples of Occupations in the European Framework for Research Careers

R1 - First Stage Researcher	R2 - Recognised Researcher
doctoral candidate junior academic junior research analyst junior research engineer junior researcher/scientist junior scientific officer research apprentice/intern	junior academic junior lecturer junior research analyst junior research engineer junior researcher/scientist junior scientific officer postdoctoral researcher

R3 - Established Researcher	R4 - Leading Researcher
accredited researcher assistant professor associate professor associate researcher principal investigator principal researcher/scientist reader research fellow research specialist scientific councillor senior academic senior lecturer senior research and development associate senior research engineer senior researcher/scientist senior scientific officer	chief scientific officer distinguished professor full professor principal investigator principal researcher/scientist reader research fellow research professor research specialist scientific councillor senior academic senior lecturer senior research and development associate senior research engineer senior researcher/scientist senior scientific officer

About the examples of researcher occupations per the R1-R4 profiles listed in Table 1, it is important to signal that:

– The examples are not intended to be exhaustive but serve as an indication of the types of titles for researchers across the R1-R4 profiles and across all sectors

– The examples consist only of titles in English although it is acknowledged that titles will differ across sectors and countries and that titles will differ across different languages

– Some researcher occupations may appear in multiple R1-R4 where the decision of profile will be dependent on the level of independence, experience, and recognition

– The final decision on whether an individual and occupation is to R1-R4 will be determined case-by-case and will be dependent upon the individual and occupation

ANNEX II

European Charter for Researchers

The European Charter for Researchers is a set of principles underpinning the development of attractive research careers to support excellence in research and innovation across Europe. The focus of the European Charter for Researchers ('Charter for Researchers') is the rights and responsibilities of researchers, employers, funders and policy makers; it consists of 20 key principles. These are classified under the following four pillars:

(a) Ethics, Integrity, Gender and Open Science;

(b) Researchers' Assessment, Recruitment and Progression;

(c) Working Conditions and Practices;

(d) Research Careers and Talent Development.

The Charter for Researchers is directed at all researchers, research performing sectors and respective umbrella organisations (stakeholders). This includes:

(a) Researchers in all sectors – academia, public and private organisations performing research;

(b) Employers of researchers in the public and private sector;

(c) Funders of research and researchers in the public and private sector;

(d) Policy makers concerned with policies relevant to the Charter.

It addresses researchers across all disciplines including Science, Technology, Engineering, Mathematics (STEM) and Social Sciences and Humanities (SSH). It covers all types of research from frontier, targeted, strategic, applied and close to market.

PILLAR 1 – ETHICS, INTEGRITY, GENDER AND OPEN SCIENCE

1. ETHICS AND RESEARCH INTEGRITY
2. FREEDOM OF SCIENTIFIC RESEARCH
3. OPEN SCIENCE
4. GENDER EQUALITY
5. EMBRACING DIVERSITY
6. THE RESEARCHER
7. FREE CIRCULATION OF RESEARCHERS
8. SUSTAINABILITY OF RESEARCH

This pillar gathers the fundamental principles of the Charter for Researchers and its commitment towards supporting excellence in research, understood in this context as fostering the best possible research teams and projects, free from gender and other biases. The principles under this pillar are expected to contribute to the foundations of the vision of a revitalised European Research Area, and to inspire European researchers, research employers, funders and policy makers. Because of the transversal nature of all these values, they are expected to be mainstreamed and taken into consideration in the deployment of the rest of the principles.

(1) Ethics and Research Integrity[1]

Researchers should comply with strict ethics rules and approach their work with honesty; reliability; objectivity; impartiality and independence; open communication; duty of care; fairness and responsibility for future science generations. These are the foundations of responsible and trustworthy research free from undue influence (including foreign interference and conflict of interest). They are a prerequisite for achieving excellence, and they underpin the responsibility of researchers to guard against biases and methodological shortcuts.

Researchers should adhere to the recognised ethical practices and fundamental ethical principles appropriate to their discipline(s) as well as to ethical standards as documented in the different national, sectoral or institutional Codes of Ethics.

[1] Research Integrity – Council conclusions (adopted on 01/12/2015) – Council doc. 14853/15.

The primary responsibility for research integrity is with researchers themselves. Researchers should be supported by an institutional culture of research integrity to create and respect rules, procedures and guidelines as well as training and mentoring based on the exchange of best practices.

In order to foster good research practices and a culture of research integrity, a number of dimensions need to be considered by all stakeholders involved, such as research integrity in research environments; training and capacity building on research integrity; research processes and policies embedding research integrity; data, publication, dissemination, review, evaluation and editing policies. Equally, mechanisms to identify, report and deal with research misconducts should be put in place.

Researchers should avoid plagiarism of any kind. Particular attention should be paid to the principles of joint ownership when research is carried out in collaboration with supervisors and/or other researchers – as appropriate to the discipline – as well as to intellectual property rules. This should apply at all stages of the research process including conception, prepaation of funding applications and the development and delivery of results. The need to validate observations by showing that findings are reproducible should not be interpreted as plagiarism, provided that the data to be confirmed are explicitly referenced.

The values of ethics and integrity are also of great importance when researchers are in a supervisory role. These shoud be applied promptly to ensure a safe, inclusive and gender equal research environment for all involved and especially when discrimination, sexual or moral harassment, hindrance to learning or research work, or unjustified personal appropriation of data or results occur.

(2) Freedom of Scientific Research

The freedom of scientific research is a common core value and principle for research cooperation within the European Research Area and with international partners. Researchers should focus their research on the good of humanity and expanding the frontiers of human knowledge, while enjoying freedom of thought, opinion and expression, the freedom to define research questions, the freedom to identify methods by which problems are solved, the freedom to choose and develop theories, the freedom to question accepted wisdom and bring forward new ideas and the freedom to associate in professional or representative academic bodies. Researchers should have the right to disseminate and publish the results of their research including through training and teaching. Researchers should, however, recognise the limitations to this freedom that could arise because of particular research circumstances – including supervision/guidance/management – or legal or operational constraints, e.g. intellectual property rights, budgetary or infrastructural reasons.

(3) Open Science

Researchers should target engagement in all aspects of Open Science[1] and be facilitated by their employers and funders in this regard. They should share their results openly, e.g. through open and FAIR-Findable, Accessible, Interoperable and Reusable data, open access publications, and open software, models and algorithms. They should take measures to ensure reproducibility of research results. They should aim at practicing Open Science methodologies and at engaging in open peer review. Employers and funders should support, provide the necessary tools and infrastructure, and reward a true Open Science culture across the Union, including mainstreaming open access to scholarly publications, research data and other research outputs – i.e. following the 'as open as possible, as closed as necessary' principle – and the diffusion and uptake of Open Science principles and practices, while considering differences among disciplines and cultural differences, including multilingualism, supporting the development of Open Science skills, and further developing and integrating the underpinning digital infrastructure and service.

Citizen Science

Researchers should incorporate citizen science into their projects as much as possible and where relevant. This means involving citizens in the concept, design and implementation of research projects in STEM and SSH. This is an ideal means to democratise science, build trust in science, and leverage the vast societal intelligence and capabilities to conduct excellent research and innovation.

[1] The transition towards an Open Science system – Council conclusions (adopted on 27/05/2016) – Council doc. 9526/16.

(4) Gender Equality

All stakeholders should foster gender equality and gender balance in research teams, managerial and decision-making bodies, recruitment and promotion committees, and advisory groups. This includes fostering the integration of the gender dimension in research, teaching and innovation content in order to improve the scientific quality, excellence, and societal relevance of the produced knowledge. Gender equality also aims at combating gender-based violence and sexual harassment. Gender equality should be understood from an intersectional perspective, where different systems of power among gender and other social categories and identities intersect and reinforce each other. Sustainable institutional changes, channelled through Gender Equality plans[1] or similar, that allow for proper reporting of infringements and include monitoring and evaluation systems, are adequate mechanisms to promote gender equality.

A key component of the transformation of an organisation's culture for advancing gender equality is work-life balance. Work-life balance is relevant for both women and men and involves ensuring that all staff are properly supported to advance their career alongside personal responsibilities that they may hold outside of the workplace, including caring responsibilities.

[1] See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – A Union of Equality: Gender Equality Strategy 2020-2025, COM(2020) 152 final.

(5) Embracing Diversity

A core principle of the European Research Area is to take account of diversity in the broad sense, including, *inter alia*, gender, racial or ethnic origin, religion or belief, social diversity, disability, age, sexual orientation and combating discrimination on all grounds. Employers and funders should embrace diversity in their researchers, since different life experiences add valuable perspectives to research projects. Also, diversity in participants can inform research results applying to and enriching the diverse societies we live in. Acknowledging unconscious biases, for instance in hiring, promoting and reviewing tasks, and compensating for them where possible is also needed, particularly in the realm of science.

(6) The Researcher

All researchers are engaged in the conception or creation of new scientific knowledge based on original concepts or hypotheses. Researchers are profesionals whose work should be valued, independently of the sector in which they operate. This should commence at the beginning of their careers, namely at postgraduate level, and should include all levels, regardless of their classification at national level.

Employers and funders should encourage and support non-linear and multi-career paths, to be understood as paths characterised by geographical, disciplinary, inter-sectoral, and inter-organisational mobility – e.g. secondments. They should also encourage hybrid paths combining simultaneously different sectors, which should be considered on a par with linear career paths.

Professional Attitude

Researchers should be familiar with the strategic goals governing their research environment and funding mechanisms and should seek all necessary approvals before starting their research or accessing the resources provided. Researchers should make every effort to ensure that their research is relevant to society by allowing a better understanding of the world, and does not needlessly duplicate research previously carried out elsewhere. This involves efficient research results' valorisation.

There should be clear communication among researchers and employers, funders, or supervisors when a research project is delayed, redefined or completed; notice should be given if a research project is to be terminated early or suspended for any reason.

Accountability

Being accountable means taking responsibility for one's actions when carrying out research. Researchers need to be aware that they are accountable towards their employers, funders or other related public or private bodies as well as, on more ethical grounds, towards society. Researchers funded by public funds are also accountable for the efficient use of taxpayers' money. Consequently, they should adhere to the principles of sound, transparent and efficient financial management and cooperate during any authorised audits of their research, whether undertaken by their employers/funders or by ethics committees. This expectation requires them to serve as examples of ethical behaviour for their peers and for the broader society.

Methods of collection and analysis, the outputs and, where applicable, details of the data should be open to internal and external scrutiny, whenever necessary and as requested by the appropriate authorities. This is also important to make the data open and help ensure the reproducibility of results.

(7) Free circulation of researchers

Employers and funders should promote free circulation of researchers, scientific knowledge and technology, while attracting talent and avoiding potential talent drain. They should recognise the value of geographical, inter-institutional, inter-sectoral, inter-disciplinary and trans-disciplinary mobility as important means of enhancing knowledge and professional development at any stage of a researcher's career and fully value and acknowledge any mobility experience within their career progression/appraisal system. Virtual mobility has been proved as a valid asset and can also be considered. This also requires that the necessary administrative instruments be put in place to allow the portability of both grants and social security provisions, in accordance with national legislation.

(8) Sustainability of Research

Researchers, employers and funders should promote the sustainable implementation of research activities in line with current and future policy initiatives adopted to progress society such as the European Green Deal, the United Nation's 2030 Agenda and the Sustainable Development Goals. Researchers should be supported by an institutional culture of sustainable research management, as well as training and mentoring based on the exchange of best practices. They should take the lead in reducing their carbon emissions in a way that sets a positive example to others within the research community.

The European Commission's 'MSCA Green Charter', developed in the framework of the Marie Skłodowska-Curie Actions (MSCA), can be used as reference point.

PILLAR 2 – RESEARCHERS ASSESSMENT, RECRUITMENT AND PROGRESSION

1. RESEARCHERS' ASSESSMENT
2. RECRUITMENT
3. SELECTION
4. CAREER PROGRESSION

Researchers' assessment should ensure an equal recognition and reward of researchers' careers regardless of the sector of employment or activity and follow an unbiased talent-based approach. Fair recruitment and selection of researchers' policies are fundamental for achieving an open labour market for researchers, contributing to the advancement of the European Research Area.

(1) Researchers' Assessment

Researchers' assessment should enable evaluating the performance of researchers and research to achieve the highest quality and impact. This requires recognition of increasingly diverse activities, practices and research outputs. Consequently, assessment should be based primarily on qualitative judgement, for which peer review and review by other pertinent experts is central, supported by the responsible use of quantitative indicators. Contributions to innovation should also be recognised, particularly for candidates from an industrial background.

Employers and funders should support a system for the assessment and reward of researchers that considers the overall quality of their impact on society, science and innovation, the diversity of activities performed, Open Science practices, and the value of geographical, inter-disciplinary and inter-sectoral mobility. Such a system should:

(a) be based on qualitative unbiased judgement provided by peers and pertinent experts, supported by the responsible use of quantitative indicators;

(b) reward quality and the various potential impacts of research on society, science and innovation;

(c) recognise a diversity of outputs, *inter alia* publications, datasets, software, methodologies, protocols, patents, models, theories, algorithms, workflows, exhibitions, strategies, policy contributions; a diversity of activities, *inter alia* mentoring, research supervision, leadership roles, entrepreneurship, FAIR data management – following the principles Findable, Accessible, Interoperable and Reusable –, peer review, teaching, knowledge valorisation, industry-academia cooperation, support for evidence-informed policy-making, interaction with society, management and leadership, supervision, teamwork, services to society, science communication and methodological rigor; and a diversity of practices, *inter alia* Open Science, early knowledge and data sharing, and open collaboration, in addition to all mobility experiences including geographical, inter-sectoral, inter-institutional, inter- and trans-disciplinary;

(d) ensure that researchers' activity meets high standards of ethics and integrity, applies appropriate conduct of research, and values good practices, including open practices for sharing research results and methodologies, whenever possible;

(e) use assessment criteria and processes that respect the variety of research disciplines and national contexts;

(f) support a diversity of researcher profiles and career paths, and value individual contributions, but also the role of teams, collaborative work, and inter-disciplinarity;

(g) ensure gender balance, gender equality, equal opportunities and inclusiveness.

To ensure coherence in the implementation of these principles, employers and funders should foster continuous training for the actors involved in the assessment and reward process.

(2) Recruitment

In accordance with the principles of academic freedom and institutional autonomy, employers and funders are recommended to establish recruitment and selection procedures which are open, transparent and merit-based, without penalisation for career breaks or non-linear, multi-career and hybrid paths. They should seek excellence, gender equality, diversity, and be tailored to the type of position advertised. Advertisements should include a comprehensive description of the knowledge and competencies required, including a description of the working conditions and entitlements, career development prospects and an overview of the timeline. Candidates should be informed, prior to the selection, about the recruitment process and the selection criteria, the number of available positions and career development prospects. Committee members should also be made aware of and trained about fair recruitment principles.

Variations in the chronological order of CVs

Career breaks or variations in the chronological order of CVs should not be penalised, but regarded as an evolution of a career, and consequently, as a potentially valuable contribution to the professional development of researchers towards a multi-dimensional career track. Candidates should therefore be allowed to submit evidence-based CVs, reflecting a representative array of achievements and qualifications appropriate to the post for which they are applying.

Seniority

The level of qualifications required should be in line with the needs of the position and not set as a barrier to entry. Evaluation of qualifications should focus on judging the achievements of the person rather than their circumstances or the reputation of the institution where the qualifications were acquired. As professional qualifications may be acquired at an early stage of a long career, the pattern of lifelong professional development should also be encouraged and recognised.

(3) Selection

As part of recruitment, the selection process should take into consideration the whole range of experience of the candidates. While focusing on their overall potential as researchers, their creativity – as assessed on the basis of their innovative research methods, approaches and outputs – and level of independence should also be considered. Selection committees should bring together diverse expertise, competences and experience relevant to assess the candidate. Selection committees should also have adequate gender balance and, where appropriate and feasible, include members from different sectors – public and private – and disciplines, and from other countries. Whenever possible, a wide range of selection practices should be used, such as external expert assessment and face-to-face and online interviews. Members of selection panels should be adequately trained especially for minimising gender bias or any other possible unconscious biases. All candidates should be informed after the selection process about the strengths and weaknesses of their application.

Non-discrimination

Employers and funders of researchers should not discriminate against researchers in any way based on gender, age, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, social or economic condition.

(4) Career progression

Employers and funders should introduce for all researchers, including senior researchers, evaluation/appraisal systems for assessing the performance of their duties on a regular basis and in a transparent manner by an independent – and, in the case of senior researchers, preferably international – committee. Non-linear and multi-career paths, characterised by geographical, sectoral, and inter-organisational mobility, or hybrid paths, characterised by the simultaneous combination of sectors, deserve full recognition and consideration on a par with linear career paths – to be understood as careers following a straight line of progression from one position to another, usually within the same field or discipline.

Such evaluation and appraisal procedures should take due account of researchers' overall potential, their research creativity, their research output – e.g. publications, data, software, models, algorithms, methods, protocols, patents, policy contributions –, their activities – e.g. management and leadership, teaching/lecturing, peer review, supervision, mentoring, entrepreneurship, knowledge valorisation, national or international collaboration, administrative duties, service to society, science communication and interaction with society –, their research behaviour – e.g. ethics and integrity practice, methodological rigour, early knowledge and data sharing, open collaboration – and their mobility, and should be taken into consideration in the context of career progression.

A transparent, structured, inclusive and gender-equal career accession and progression system is needed to reinforce careers in academia, up to the top positions. The development of tenure-track-like systems – to be understood as defined frameworks where a fixed-term contract has the prospect of a progression to a permanent position subject to positive evaluation – could be considered for this purpose at the level of the Member States and research performing organisations.

Co-authorship

Co-authorship should be viewed positively by institutions when evaluating staff, as evidence of a constructive approach to the conduct of research. Employers and funders should therefore develop strategies, practices and procedures to provide researchers, including those at the beginning of their research careers, with the necessary framework conditions so that they can enjoy the right to be recognised, listed and/or quoted, in the context of their actual contributions, as co-authors of papers, co-inventors of patents, etc., or to publish their own research results independently from their supervisors. They should also offer training and workshops to researchers, especially early-career researchers, on ethical authorship practices, including the understanding of individual contributions and their rights and responsibilities.

Recognition of mobility experience

Any relevant mobility experience, e.g. a stay in another country/region or in another research setting – public or private – or a change from one discipline or sector to another, whether as part of the initial research training or at a later stage of the research career, or virtual mobility experience should be considered as a valuable contribution to the professional development of a researcher.

PILLAR 3 - WORKING CONDITIONS AND PRACTICES

1. WORKING CONDITIONS, FUNDING AND SALARIES
2. STABILITY OF EMPLOYMENT
3. CONTRACTUAL AND LEGAL OBLIGATIONS
4. DISSEMINATION AND EXPLOITATION OF RESULTS

Improving researchers' working conditions should be at the core of the Union policy framework for research careers. Within this area several actions are proposed to contribute to the stability of employment and to the definition of researchers' labour rights and obligations, subject to national legislation and circumstances. The need for employers and funders to develop a research culture for research excellence and facilitate a thriving researcher community is also emphasised.

(1) Working conditions, funding and salaries

Employers and funders should ensure that the working conditions for researchers, including those with disabilities, provide, where appropriate, the flexibility and accessibility deemed essential for successful research performance, in accordance with existing national legislation and circumstances, and with national or sectoral collective-bargaining agreements. They should aim to provide working conditions for combining personal life, family, caring, health, safety, and overall wellbeing, without prejudice to research careers. Particular attention should be paid, *inter alia*, to flexible working hours, part-time working, remote working and sabbatical leave, as well as to the necessary financial and administrative provisions governing such arrangements. Employers should provide working conditions and environment that promote the mental health and physical wellbeing of researchers, including appropriate procedures for preventing and tackling gender-based violence, including sexual harassment.

Research environment

Employers and funders of researchers should ensure that the most stimulating research or research training environment is created which offers appropriate equipment, facilities and opportunities, including for remote collaboration over research networks, and the highest level of health and safety in line with Union, national and sectoral regulations. Funders should ensure that adequate resources are provided in support of the agreed work programme. In particular, it is important to have qualified support staff – e.g. research managers and administrators.

Complaints/appeals

Employers and funders of researchers should establish, in compliance with relevant national, Union or international law, rules and regulations, appropriate procedures, possibly in the form of an impartial ombudsperson, to deal with complaints/appeals of researchers, including those concerning conflicts among supervisors and First Stage (R1)/Recognised (R2) researchers. Such procedures should provide all research staff with confidential and informal assistance in resolving work-related conflicts, disputes, and grievances, with the aim of promoting fair and equitable treatment within the institution and improving the overall quality of working conditions and environment.

Participation in organisation governance

Employers and funders of researchers should recognise as wholly legitimate, and indeed desirable, that researchers be represented in the relevant information, consultation and decision-making bodies of the institutions for which they work, to protect and promote their individual and collective interests and to actively contribute to the workings of the institution.

Funding and salaries

Employers and funders of researchers should ensure that researchers, irrespective of their status, enjoy fair and attractive remuneration conditions – funding and salaries – with adequate and equitable social security provisions – including sickness, healthcare and parental benefits, pension rights and unemployment benefits, old-age and survivor's benefits, invalidity benefits and benefits in respect of accidents at work and occupational disease – in accordance with existing national legislation and with national or sectoral collective bargaining agreements.This should include researchers at all career stages, including First Stage Researchers (R1), commensurate with their legal status, performance and level of qualifications and responsibilities. Researchers should be made aware of their rights and obligations when it comes to understanding how their salaries are being taxed, and should be provided with transparent information on social protection rights such as national pension rights.

(2) Stability of employment

Employers and funders should take resolute actions to counter the phenomenon of precarity and to support job security and stability. This could, on a voluntary basis, include the establishment of a maximum threshold for the number of fixed-term contracts per organisation in the overall researchers' human resources. Whenever permanent, long-term or highly recurrent research tasks are being fulfilled, permanent or open-ended contracts are recommended as the appropriate instrument. Researchers under fixed-term contracts should benefit from specific career development and advisory services to ensure career continuity.

Early-career researchers (R1-R2)

Precarity of employment is a particular issue in academia. To counter this situation is recomended the implementation – subject to national legislation and circumstances – of specific measures in support of early-career researchers with regard to providing First Stage researchers (R1) with social protection and working conditions applicable to researchers in other career stages and with adequate income, promoting involvement of early-career researchers into research teams avoiding the demand of tasks unrelated to their scientific training and recognising inter-institutional, inter-sectoral, inter-disciplinary and geographical mobility, including virtual mobility. Additionally, appointing institutions should establish clear rules and explicit guidelines for the recruitment and appointment of recognised researchers (R2), including the maximum duration and the objectives of these appointments. Such guidelines should consider time spent in prior postdoctoral appointments at other institutions and take into consideration that the postdoctoral status should be transitional, with the primary purpose of providing additional professional development opportunities for a research career in the context of long-term career prospects with fixed-term contract or tenure.

Employers and funders should make their best effort as regards informing early-career researchers about career opportunities, within and beyond academia, offering broad professional development, especially during the R2 stage, more transparent and predictable career prospects, and work-based learning opportunities in a diversity of sectors.

(3) Contractual and legal obligations

Researchers at all levels should be familiar with the national, sectoral or institutional regulations governing training and working conditions. This includes intellectual property rights regulations, and the requirements and conditions of any sponsor or funders, independently of the nature of their contract. Employers and funders should provide copies of these documents in English. Researchers should adhere to such regulations by delivering the required results – e.g. thesis, publications, patents, reports, new products, etc. – as set out in the terms and conditions of the contract or equivalent document.

Given the increasing focus on knowledge security, researchers should always adopt safe working practices, in line with relevant national and Union legislation, including taking the necessary precautions for health and safety and for recovery from cybersecurity attacks, and information technology disasters, e.g. by preparing proper back-up strategies. They should also be familiar with the current national and Union legal requirements regarding data protection and confidentiality protection requirements and undertake the necessary steps to always fulfil them.

(4) Dissemination and exploitation of results

Open Science should be practiced by all researchers to ensure, in compliance with their contractual arrangements, that the results of their research are disseminated, made openly available and exploited, e.g. communicated, transferred into other research settings and, if appropriate, commercialised. Senior researchers are expected to take a lead in ensuring that research is fruitful and that results are either exploited commercially and/or made accessible to the public whenever the opportunity arises.

Researchers should be facilitated in this regard by their employers and funders through the relevant skills training and access to the appropriate funding, infrastructure and support. The engagement of researchers in Open Science practices should be recognised, incentivised and rewarded by employers and funders in recruitment, career progression and funding programme assessment.

Intellectual Assets including Intellectual Property Rights

Employers and funders should ensure that researchers at all career stages are adequately compensated for the benefits resulting from the exploitation – if any – of their research and innovation activities results, where appropriate by guaranteeing co-ownership of the intellectual property rights such as copyright. Employers and funders should address this explicitly in their intellectual assets management strategy and should make the strategy publicly available. The intellectual assets management strategy should cover the creation, management, ownership and utilisation of all types of intellectual assets – including peer-reviewed publications, data, know-how, standards –, and support Open Science practices.

The strategy should explicitly refer to ownership provisions and access rights to researchers and/or, where applicable, to their employers or other parties, including industry partners, as possibly provided for under specific collaboration agreements or other types of agreement.

Public Engagement

Researchers should ensure that their research activities are made known to society at large in such a way that they can be understood by non-specialists, thereby improving the public's understanding of science. Direct engagement with civil society and citizens will help researchers to better understand public interest in priorities for research and the public's concerns, and to harness the potential of co-design and co-creation with society where relevant.

PILLAR 4 -RESEARCH CAREERS AND TALENT DEVELOPMENT

1. VALUING DIVERSE RESEARCH CAREERS
2. CAREER DEVELOPMENT AND ADVICE
3. CONTINUOUS PROFESSIONAL DEVELOPMENT
4. SUPERVISION AND MENTORING

The research community is diverse in talents, skills, competences and capacities and roles. The more these talents are fostered and developed, the better the research quality and societal relevance of the produced knowledge. Encouraging continuous professional development along with skills training is needed to maintain competence and provide researchers with a broad range of career opportunities in the public and private sectors.

(1) Valuing Diverse Research Careers

Employers and funders should recognise that researchers may have highly diverse careers both in research and in other functions. Diversification typically includes mobility in all its forms: inter/intra-national, inter-sectoral, inter-institutional, inter- and trans-disciplinary and virtual mobility. This requires more talent-based and diversity-sensitive quality assessment, fostering responsible use of metrics, considering diverse contributions and their potential impacts, diverse activities and practices like teaching and skills, peer review, management and leadership, supervision, mentoring, knowledge valorisation, and technology transfer activities, entrepreneurship and collaboration with industry, developing evidence-informed policymaking activities, science communication and interaction with society, and Open Science practices, team science, among others as well as mobility.

Employers and funders should put measures in place to make researchers, in particular early-career ones, aware of opportunities available in all relevant sectors and to promote a culture of diversification of careers for better personal and professional development. This will require career advisory, mentoring and support services to stimulate inter-sectoral, inter-disciplinary and geographical mobility, as well as the creation and development of entrepreneurial activities.

(2) Career Development and Advice

Employers and 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 career, regardless of their contractual situation, including for researchers on fixed-term contracts. In this context, researchers should be supported to develop an individual career plan to identify the necessary training and research required to attain their career goals. 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 and be proactive and responsible for their career development.

Employers and funders should ensure, either in the institutions concerned or through collaboration with other structures, accessible and up-to-date career guidance and job placement assistanceproviding information, guidance and support for career development both within and beyond the institution concerned. This should be offered to researchers at all stages of their careers, regardless of their contractual situation.

(3) Continuous Professional Development

Researchers at all career stages should seek proactively and be given opportunities by their employer/funder 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 or collaboration within a team and the respective networks. Particular attention should be paid to the training of First Stage Researchers (R1), the majority of whom are PhD candidates at the beginning of their research career.

Access to research training and continuous development

Employers and funders should ensure that all researchers at any stage of their career, regardless of their contractual situation, are given the opportunity for professional development and for improving their employability through access to measures for the continuing development of skills and competencies. Employers and funders should take action to support the development and provision of targeted training, to encourage up-skilling and re-skilling opportunities for researchers with a lifelong learning perspective and to foster inter-sectoral and inter-disciplinary mobility. Such measures should be regularly assessed for their accessibility, take-up and effectiveness in improving competencies, skills and employability.

Employers and funders should attribute adequate relevance to the need to foster entrepreneurial competences in researchers, with the objective of allowing those who undertake an entrepreneurial career path to couple their knowledge production capabilities with knowledge valorisation proficiency, turning innovative ideas into business and fostering innovation and progress.

Employers and funders should take steps to ensure that doctoral training is compatible with interoperable careers in all relevant sectors and for the practice of Open Science, including by making use of the European Competence Framework for Researchers (ResearchComp), the Principles for Innovative Doctoral Training, the European Code of Conduct for Research Integrity, and of any other future initiatives taken for the purpose of strengthening transversal skills of researchers.

Validation of skills

As part of broadening researchers' skills sets, employers and funders should provide for the appropriate assessment and evaluation of formal and informal training, including on-the-job skills and training, particularly within the context of international, intersectoral and inter-disciplinary mobility. The assessment should be done in a fair and transparent manner within a reasonable timeframe.

Teaching

Teaching is an essential means for the structuring and dissemination of knowledge and is a valuable option within a researcher's career path. Teaching should benefit from and make use of scientific knowledge and promote research interest among students. Involvement of researchers in teaching should be fully supported and recognised, and might vary at different moments within a career. Special attention should be paid to researchers at the beginning of their careers, ensuring that they are rightly supported and that teaching responsibilities – including lecturing, tutoring, supervising and mentoring – are compatible with their research activities or research training.

Employers and funders should ensure that teaching duties are adequately remunerated and considered in the evaluation/appraisal systems from an early stage of researchers' careers. It should also be ensured that time devoted by senior members of staff to the training and mentoring of early-career researchers – R1, R2 – is counted as part of their teaching commitment. Suitable training should be provided for teaching and coaching activities as part of the initial training and professional development of researchers.

(4) Supervision and Mentoring

Proper people and team management are crucial in research working environments as science is by definition a joint endeavour. The necessary training, tools and evaluation mechanisms should be put in place so as to ensure that senior and leading researchers manage their staff and teams in a fair and non-discriminatory manner, free of gender bias and other types of biases – such as biases based on religion, sexual orientation, race, ethnicity, socioeconomic background, etc. –, and establish fruitful and cooperative working relationships with their peers. This should contribute to healthy, fair, creative environments where every individual is respected, duly motivated, recognised and their well-being fostered.

Employers and funders should ensure that a person or a group of persons is clearly identified to whom First Stage (R1) and Recognised (R2) researchers can refer for the performance of their duties and should inform researchers accordingly.

Such arrangements should clearly stipulate that the proposed supervisor have an adequate level of expertise in supervising research and have the time and commitment to offer the research trainee appropriate support; moreover, they should provide for the necessary progress and review procedures, as well as for the necessary feedback mechanisms.

Specific provisions for the integration, research support and career development of researchers, for their mentoring and wellbeing, for communication and conflict resolution as well as for the training and professional development of supervisors are provided in the MSCA Guidelines on Supervision. The MSCA Guidelines on Supervision are a set of recommendations for individuals and institutions who receive MSCA funding. The Guidelines promote effective supervision, mentoring and appropriate career guidance.

Relations with supervisors

Researchers in their training phase should have a structured and regular relationship with their supervisor(s) and faculty/departmental representative(s) and take full advantage of their relationship with them. Supervisors should also actively support especially early-stage researchers by organising feedback meetings with them and promoting training activities relevant to their work.

This includes keeping records of all work progress and research findings, obtaining feedback by means of reports and seminars, applying such feedback and working in accordance with agreed schedules, milestones, deliverables and/or research outputs.

Senior researchers

Senior researchers – R3 and R4 – should devote particular attention to their multi-faceted role as supervisors, mentors, career advisors, leaders, project coordinators, managers or science communicators. They should perform these tasks to the highest professional standards and have access to the appropriate training. Regarding their role as supervisors or mentors of researchers, senior researchers should build up a constructive and positive relationship with First Stage (R1) and Recognised (R2) researchers, in order to set the conditions for efficient transfer of knowledge and for the further successful development of their careers. Supporting the career development of R1 and R2 researchers in communicating experience and values in a trusted and confidential environment is a high-responsibility role.