CARDEA Matrix Framework for Research Manager Careers

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Policy Invitation

The Treaty on the Functioning of the European Union[1] states in article 187: "*The Union may set up joint undertakings or any other structure necessary for the efficient execution of Union research, technological development and demonstration programmes.*" The Council of the European Commission on [Deepening the European Research Area](#) "*RECOGNISES that researchers and* other research and development *(R&D) personnel across the public and private sectors* are at the heart of research and innovation *(R&I) systems.*"

In the Council conclusions on the New European Research Area the council recognises "*the growing need for the professionalization of science management at research performing and funding organisations, including through digital skills in order to improve their ability to participate in ERA-wide collaboration networks;*" It is now broadly recognised that Research Managers are an integral part of the Union research infrastructure and as per Article 187 the Union may set up "any other structure necessary for the efficient execution of Union research."

Furthermore, the Council of the European Commission "*NOTES the diverse and essential roles of highly skilled talents play in successful research and innovation systems across the ERA like data stewards, research (e-)infrastructure operators, research facilitators, knowledge brokers, innovation and technology transfer managers and coordinators, among others; NOTES that these roles need to be acknowledged and supported via training and career development instruments to optimise job opportunities; and INVITES Member States and the Commission to develop measures in support of career diversification and multiple career paths.*"[2]

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[1] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:12012E/TXT:en:PDF
[2] https://www.era-learn.eu/news-events/news/new-pact-and-governance-structure-for-the-european-research-area-era

Introduction

Currently there are no European Union structures for Research Managers and Europe lacks an acknowledged Research Manager Career profile with accompanying competency, official accreditation and training architecture. Even though there are professionals performing this role throughout Europe it is not acknowledged from a policy perspective. According to a recent survey (CARDEA) the vast majority of Research Managers are female which is interesting to consider in light of equality, diversity and inclusion needs. It is noted that "the researchers' labour market is fragmented" and "that it can be very difficult to move between sectors." Evidence suggests (inclusive of the CARDEA Survey both qualitative and quantitative) that Research Managers transition from Post-Doctoral (Researcher) Roles to Research Manager Roles within the European Research Area enhancing Europe's Research Agenda. The importance of Research Managers in the institutional and policy knowledge space plus continuity of expertise cannot be overestimated within the current context of the "suboptimal balance between institutional and project-based funding led to short-term, project-based contracts that do not give a long-term perspective for researchers."[3]

ERA Action 17 as a priority within the New ERA Policy Agenda (*Enhancing the strategic capacity of Europe's public research performing and funding organisations*) creates a mechanism to introduce a framework to provide empowering career architecture for Research Manager Careers. This framework will enhance and strengthen the quality of R&I systems, create better working conditions and foster employability, and other relevant framework conditions at all levels of the European Research Area.

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[3] https://www.era-learn.eu/news-events/news/new-pact-and-governance-structure-for-the-european-research-area-era

This framework aims to communicate the various characteristics that Research Managers (included in "other research and development personnel" in the EU Treaty) may have throughout their careers. It intends providing a classification that is independent of a particular sector. It defines characteristics typically required for highly diverse careers in Research Management in the education, research and innovation activities in both the public and private sectors. Please see the accompanying CARDEA Competency Framework for Research Managers.

CARDEA MATRIX
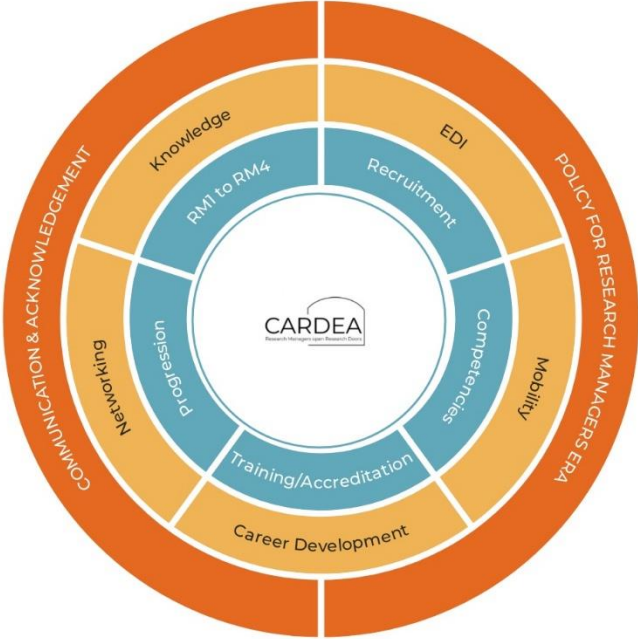
The CARDEA Framework for Research Managers

Profile Layout

There are four broad profiles for research managers, which are independent of any particular sector with the following working titles:

RM 1 First Stage Research Manager

RM 2 Recognised Research Manager

RM 3 Established Research Manager

RM 4 Senior Research Manager

The framework identifies both necessary and desirable characteristics which could be applicable across a wide range of careers including those in higher education, the private and public sectors. The necessary competencies focus on those that are associated directly with research manager activity regardless of whether it is in the public or private sector. Many of these are transferable to other careers, for example, Project Managers, Data Analysts, Scientific Communicators etc. Clearly there are other skills that are sector dependent and are classified under the heading of desirable competencies. These may include HR Research Specialisation, Research Finance Specialisation etc.

The Framework is "sector neutral." The descriptors apply to all Research Managers, independent of where they work in the private or public sector (i.e. companies, NGOs, research institutes, research universities or universities of applied sciences). Regardless of any particular profession or specialisation, one can outline broad profiles that describe the different characteristics Research Managers possess.

It is envisioned that direct entry through open competition (recruitment) can occur at any level. Opportunities for career development and progression are integrated into the Framework. It is envisaged that qualifications will not be a barrier to entry into the profession.

Profile Descriptors

First Stage Research Manager (RM 1)

The term First Stage Research Manager refers to research managers in the first two years (full-time equivalent) of their research management activity whilst demonstrating the competencies and skills for successful performance in the role. The role requires a basic understanding of the research/business structures, operations, and includes responsibility for implementing and achieving results.

Recognised Research Manager (RM 2)

The term Recognised Research Manager refers to research managers with an intermediate level of experience in their research management activity whilst demonstrating competencies and skills for the successful performance in the role. The role requires a moderate understanding of overall research/business operations including responsibility for monitoring the implementation of research strategy. This has limited or informal responsibility for colleagues and / or needs to consider broader approaches or consequences through own actions rather than through others.

Established Research Manager (RM 3)

The term Established Research Manager refers to research managers with an advanced level of experience in their research management activity whilst demonstrating competencies and skills for the successful performance in the role. The role requires strong understanding of the organisation's environment, operational plans, current strategic position and direction with strong analytical skills and the ability to advise on strategic options for the research/business. This includes formal responsibility for colleagues and their actions; and that their decisions have a wider impact.

Senior Research Manager (RM 4)

The term Senior Research Manager refers to research managers with an expert level of experience in their research management activity whilst demonstrating the competencies and skills for successful performance in the role. The role requires expert knowledge to develop strategic vision and provide unique insight to the overall direction and success of the research/organisation. This is formal responsibility for

research/business areas and his / her actions and decisions have a high-level strategic impact.

For the purposes of the Framework, RM 1 and RM 2 profiles should be considered early to mid-stage research managers and RM 3 and RM 4 profiles should be considered leadership level research managers.

Connection with Existing and Proposed EU Policy

Research Manager Career architecture is emerging at sector-specific, national and institutional level in an ad hoc fashion answering specific institutional and research needs. Some Member States have started to develop national professional development mechanisms for their Researchers and are in some instances including Research Support Professionals such as Research Assistants and Research Officers, for example the IUA Researcher Career Development Framework in Ireland. However, this is rare. As a result, many individual research organisations have established their own frameworks directly related to job descriptions within those institutions and companies. The focus and terminology of the various frameworks differ, but there is a substantial overlap in content and purpose.

The CARDEA Matrix Research Manager Framework is expected to have a bridging function for the sector-specific, national and institutional frameworks, EU Policies and Recommendations providing a common language to a wide variety of actors across the continent and beyond. The obvious connectivity and synergies between existing EU frameworks and policies is an invitation to include the interoperable and key role of Research Manager within existing and recognised architecture.

A. The European Charter for Researchers and the Code of Conduct for Recruitment

The European Charter for Researchers and the Code of Conduct for Recruitment of researchers (hereafter Charter and Code) has been revised. It states that "The profiles R1-R4 are strictly of relevance for researchers and are not relevant for research management. Similar types of profiles might be considered for research management once the category is adequately framed"[4] it also goes on to say, "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., professionals including

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[4] **EUR-Lex - 52023DC0436 - EN - EUR-Lex (europa.eu)**

research managers and administrators)." The CARDEA matrix (RM1 to RM4) is the similar type of framework. Within it there are obvious synergies to the existing career architecture for researchers incorporating inclusivity and recognition of the role of Research Manager as "performing high-level research and innovation requires the support of a multitude of research management roles, undertaken by researchers or other professionals. These highly valuable professions deserve proper recognition, including by way of further analysis and alignment at European level, with a view to strengthening their capacity, developing relevant training, fostering comparability, and allowing them to effectively manage and support research and innovation."

The current inclusion of the role of Research Manager within the New Charter and other Commission Policy paves the way for a connected Charter for Research Managers. Introducing the CARDEA Framework at this juncture is a forward-thinking and proactive step in ensuring futureproofing and recognising the pivotal role of Research Manager within ERA Research and Innovation systems. By connecting with the inclusion of the role of Research Manager in the revised Charter and Code, the CARDEA Framework is pre-emptively paving the way for acknowledging the significance of Research Manager roles and setting a solid foundation for the future of this career. Thus, the introduction of the CARDEA Framework aligns perfectly with this EU strategic vision. In addition to this high-level research is supported by research managers. Therefore, the research environment must include and acknowledge the role of Research Manager.

B. HR Excellence in Research[5]

As with the revision of the European Charter for Researchers and the Code of Conduct for Recruitment[6] of researchers, so the HR Excellence in Research Award is being revised to move with the times, and evolve as required, informed through evidence-based data and research. **It is an important step to include the role of Research Manager in this revision.** This will enable HRS4R to connect with other ERA actions (e.g., action 17) and

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[5] https://euraxess.ec.europa.eu/jobs/hrs4r
[6] https://euraxess.ec.europa.eu/jobs/hrs4r

future proof efforts to encompass, and support the proposed but not finalised policy framework for Research Managers at EC level.

The existing architecture of HRS4R is sympathetic and easily adaptable to the role of Research Manager. In fact, very little amendment would be required to include Research Manager Roles in the process. The HR Strategy for Researchers supports research institutions and funding organisations in the implementation of the Charter & Code in their policies and practices. Hence the inclusion of Research managers in the new Charter and Code is an invitation to render the Role of Research Manager more attractive to all stakeholders within the ERA Research Ecosystem.

Including the role of a research manager in the HR Excellence in Research policy process promotes EU policy interoperability by aligning research-specific policies (Action 17) with broader HRS4R architecture. It leads to streamlined processes, effective implementation, and acknowledgement of the role. By incorporating the expertise of research managers within the HRS4R framework, practicing organisations in Member States can work within a cohesive policy framework that supports both research management and researcher objectives, ultimately enhancing the research environment and the success of research initiatives.

C. The Fifth Freedom

The CARDEA Framework also connects in with a "**fifth freedom**"[7] based on making the labour market for researchers more mobile between sectors, open, competitive, and inclusive of better career structures and transparency. The results of the CARDEA Survey and others recognise the choice to pursue a career in research management was mostly influenced by a perceived match between the profession and their skill profiles. This suggests that the participants actively seek roles in line with their qualifications and experience. There is also clear evidence of an affiliation with research **management as an alternative to a research career.** Further evidence of this type of career mobility is

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[7] https://www.consilium.europa.eu/media/49980/st09138-en21.pdf

provided by the RAAAP-3 Survey[8] results which suggest that 44.5% of respondents[9] in the EU indicated that they moved from a research career to a Research Manager career. Interestingly, there is little intersectoral transfer from other management administration functions to research management.

D. The European Skills Agenda

The European Skills Agenda adopted by the Commission on 30 June 2020 called to develop a European Competence Framework for researchers (ResearchComp), supporting the development of a set of core skills for researchers, skills taxonomies, and related training, in line with the European Pillar of Social Rights. As reported in the Agenda, "researchers are at the forefront of science and innovation and require a specific set of skills."[10] So too Research Managers. The CARDEA Framework provides this by defining the levels, core competencies and training required for a successful career in Research Management. The Framework enables people to acquire the skills they need for the role of research manager by providing up to date information on the skills required for the role. The Framework is accessible, easily understandable, interoperable between sectors and thus compliments CEDEFOP as it will promote the skills and qualifications required for the role of Research Manager. It also compliments ESCO as the CARDEA Matrix Research Manager Framework supports role mobility across Europe by offering a "common language" on research manager skills and competencies that can be used by different stakeholders on employment and education and training topics.

E. EURAXESS Network and ERA Talent Hubs
The interoperability of the CARDEA Matrix for Research Manager Careers, which echoes the promotion of attractive and sustainable research careers, balanced talent circulation, and international, transdisciplinary, and intersectoral mobility across the European Research Area (ERA), is supported by the broadening of the EURAXESS services, network, and portals into an ERA Talent Platform.

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[8] https://inorms.net/activities/raaap-taskforce/raaap-survey-2022/
[9] Based on responses 4 or 5 on the 5-point Likert type scale
[10] https://ec.europa.eu/migrant-integration/sites/default/files/2020-07/SkillsAgenda.pdf

The EURAXESS[11] services, network, and portals serve as a comprehensive resource for researchers and innovators seeking to advance their careers and personal development by moving to other countries. By providing tailored information and support, free of charge, to researchers, entrepreneurs, and research performing organizations, EURAXESS facilitates the circulation of talent and fosters a vibrant research ecosystem. The expansion of EURAXESS into an ERA Talent Platform, an online one-stop-shop, further enhances its structure and governance, leveraging links to Europass and the EURES network of European public employment services.

The ERA Talent Platform, with its improved structure and governance, will ensure a seamless integration with Europass, the EU platform for managing learning and careers, and the EURES network. This integration enables researchers to efficiently manage their learning, careers, and mobility opportunities through a single platform, promoting interoperability and simplifying administrative processes. Researchers will have access to a wide range of resources, including job and funding opportunities, career development guidance, and free tools, facilitating their international, transdisciplinary, and intersectoral mobility.

The ERA Communication emphasizes the importance of supporting research careers and fostering open science, inclusiveness, and access to excellence. The toolbox of support measures proposed aligns with the goals of EURAXESS and the CARDEA Matrix for Research Manager Careers, as they rely on frameworks and attractive career opportunities to enhance the overall quality and attractiveness of the research system in the ERA which aligns with the CARDEA Matrix, highlighting the need for interoperable and attractive careers for research managers.

Additionally, the ERA4You policy initiative aims to promote a geographically balanced circulation of research and innovation talents. By strengthening retaining, attracting, and return activities through favourable working conditions and improved access to mobility funding programs, ERA4You seeks to boost the permeability and employability of research and innovation talents across sectors. It also emphasizes the importance of

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[11] https://euraxess.ec.europa.eu/

enhancing interaction between ecosystem actors for training and career development, which aligns with the objectives of the CARDEA Matrix for Research Manager Careers.

In conclusion, the interoperability of the CARDEA Matrix for Research Manager Careers is supported by the broadening of EURAXESS into an ERA Talent Platform, which offers researchers comprehensive support for their careers and mobility. This integration, along with the ERA4You policy initiative, fosters attractive and sustainable research careers, balanced talent circulation, and international, transdisciplinary, and intersectoral mobility, ultimately enhancing the overall research system within the European Research Area.

Benefits of the Framework

A commonly understood European Framework for Research Manager Careers will serve several practical purposes for different categories of users but is mainly intended to provide some reference to Research Managers and their employers. The framework could notably:

Help Research Managers
- identify job offers close to their individual profile in diverse employment sectors, including academia and industry.
- present themselves (some of their individual characteristics) in a commonly understood language.
- understand what - in general terms - is expected of them throughout their career.
- benchmark with other RM's and gain directions for self-development.
- networking and training.

Help Employers
- define job profiles, identify candidates close to the job profile on offer ensuring the best candidate for each position.
- identify candidates from different employment sectors (academia, industry etc.).
- set priorities for staff training.
- organise career guidance.
- inform their overall institutional human resources strategies, for instance as regards the portfolio management of research management staff.

In addition, the framework could serve to:

Help public authorities
- inform strategies to train research managers to meet their regional and national R&D targets and to promote attractive employment conditions.
- make international comparisons and benchmark their research manager population.

Help Society

- appreciate research manager capacities.

Help the European Research Area

- promote more mobility across borders and employment sectors, by enhancing comparability and transparency on career opportunities, thus also helping to:
    - better attract highly skilled talent from third countries and, ultimately,
    - contribute to the establishment of a single market for knowledge, research, and innovation.

Actors using the Framework.

The intention of having a Research Manager Framework is to support the research community: research managers, researchers, their employers (universities, research institutes and companies), funders and public authorities. These actors can voluntarily use the framework as they see appropriate within their own institutional or national context. There is no central assessment mechanism for research managers and there are no central rules on how to apply profiles.

At European level there may be an exchange of good practice, resulting in non-binding guidance for interested parties. The Commission envisages introducing the Framework in the future as a helpful categorisation of research manager job opportunities. This would create an opportunity for employers and funders to start using the framework when publishing their job and funding adverts on a European scale. Commission programmes could soon start using the framework as a consistent categorisation for different funding instruments. It may also assist the proposed Observatory on Research Careers which will use a range of quantitative and qualitative methods to gather data on researchers and Research Managers.

Nomenclature European Research Manager Careers

Broad use of ESCO for the definition of Research Managers:[12] "research managers oversee the research and development functions of a research facility or program or university. They support the executive staff, coordinate work activities, and monitor staff and research projects. They may work in a wide array of sectors, such as the chemical, technical and life sciences sector. Research managers can also advise on

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[12] https://esco.ec.europa.eu/en/classification/occupation_main

research and execute research themselves." **This section will be updated further. There is currently a lot of work underway to define the role of Research Manager.**

CARDEA definition of Research Manager

Research Managers enable the performance of research in all its applications. Research managers hold specialised or generalist roles within the research ecosystem. (*To be confirmed by CARDEA consortium partners*).

Nomenclature Used in Research Manager Job Adverts.

https://www.zippia.com/research-manager-jobs/

https://climbtheladder.com/research-manager/

https://www.calhr.ca.gov/state-hr-professionals/pages/5734.aspx

https://www.zippia.com/senior-research-manager-jobs/what-does-a-senior-research-manager-do/

Training Certification and Micro-Credentials[13]

The results of the CARDEA[14] survey demonstrates that Research Managers need and want training in the competency areas that they think are the most important to carry out their role and that they are eager to engage in professional development initiatives that will enhance their capacities and their effectiveness as research management professionals. This is especially true for transversal skills such as attention to detail, critical thinking, decision making and relationship management skills such as collaborating for success. Developing and managing partnerships with internal and external stakeholders is also an area where there is a lack of training for Research Managers.

The inclusion of a training in the CARDEA Framework is critical. These modules will be developed further on in the Project. However, the need of upskilling for research management staff is in line with the empowerment of training and lifelong learning enshrined in the European Skills Agenda, launched in July 2020. The agenda sets ambitious, quantitative objectives for upskilling (improving existing skills) and reskilling (training in new skills) to be achieved within the period 2020-2025, through 12 actions. The implementation of these actions is further promoted via the launch of the initiative of 2023 European Year of Skills, whose aim is to make sure that European workforce skills are relevant for labour market needs. Member States have endorsed the EU 2030 social targets that at least 60% of adults should participate in training every year, already presenting their national contribution to meeting this target.

Among its 12 flagship actions of the European Skills Agenda, new initiative on a European approach to micro-credentials aims to support the quality, transparency and take-up of micro-credentials across the EU, in order to encourage people to upskill and reskill in a

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[13] Chiucconi Barbara, Feliziani Erica, CARDEA Training and Development WP 7
[14] https://www.ucc.ie/en/media/research/cardea/Cardea_Report_Summary_FINAL.pdf

fast and effective way, in line with needs of the labor market and a fast-changing society. The micro-credentials answer to the need to reskill and upskill through more flexible alternatives than a full degree in order to overcome the gap between the learning outcomes of initial formal qualifications and emerging skills needs in the labor market.

Within the CARDEA survey the participants were asked to rate the importance of specific skills for an effective research management activity and whether they had been offered training in these skills. Respondents chose among a list of 90 skills, that were grouped into 9 families, based on a comprehensive review of the literature on research management and RM roles.

Within the target group of RMs, CARDEA training modules will target both senior and early-stage research managers, including newcomers. The goal is to develop several training modules that are all together a comprehensive training to people new in the profession – a sort of core learning common to all categories of RMs - but concomitantly useful to more expert staff that could choose some topics according to their own needs. Also, CARDEA training will provide support to those RMs migrating to other Research Management tasks or specialisation (inter-area mobility).

The CARDEA training programme will consist of 16 modules to be delivered through free on-line webinars. The format of webinar embraces both the possibility to attend it in real time, but also the possibility to record the training and enjoy it on-demand.

CARDEA training modules will be certified through micro-credentials which are, according to the EU definition, the record of the learning outcomes that a learner has acquired following a small volume of learning (an EU approach to micro-credentials, December 2021). The micro-credentials will be recorded in an open badge that will be issued by the University of Macerata, leader of CARDEA WP 7 "Training and development". The choice of micro-credentials and open badge are justified by its flexibility and practicality, especially for the participants to the training. Indeed, they can select the modules according to their needs and easily show the competences acquired though the open badge. The micro credentials recorded in the open badge will be a proof of the acquired competences.

Conclusion

Research Managers may be involved <u>fully or partially</u> in different types of activities (e.g., project management, funding/grant adviser, research communication, technical transfer, data steward etc.) in any sector of the economy or society.

Researcher Managers identify options to support and/or contribute to new Research and Development activities and plan for and manage them by using high-level skills and knowledge developed through formal education and training or from practical experience in performing and/or supporting research.

For the category of Research Managers:

- The CARDEA Matrix is flexible and recognises that an individual may be involved in hybrid combinations of roles as researcher, research manager, and/or research support.
- The CARDEA Matrix also recognises that some roles may involve combinations of aspects of research, research management, and/or research support activities within the research manager job family.
- The CARDEA Matrix recognises that training in the competencies as identified by the CARDEA Survey will be included in this framework as further developed.
- This is a living document and more work in the definition and classification of the role of research manager within the ERA is currently underway.

A simple and interoperable career framework for Research Managers within the European Research Area (ERA) offers a multitude of benefits. The CARDEA Matrix Framework provides clarity and transparency, allowing research managers to navigate their careers from entry level. By clearly defining levels (RM 1 to RM4), proficiency levels, job families, competencies and training, it establishes a clear pathway for professional growth and development. Moreover, an interoperable framework ensures consistency and comparability across different research institutions, universities, and Member States, enables implementation, mobility, and exchange of talent within the ERA. The CARDEA Matrix Framework is a fair, open, and transparent framework for all research managers.