



# CARDEA

Career Acknowledgement for Research  
(Managers) Delivering for the European Area  
Grant Agreement No. 101058572

## Agreed Research Design – WP2

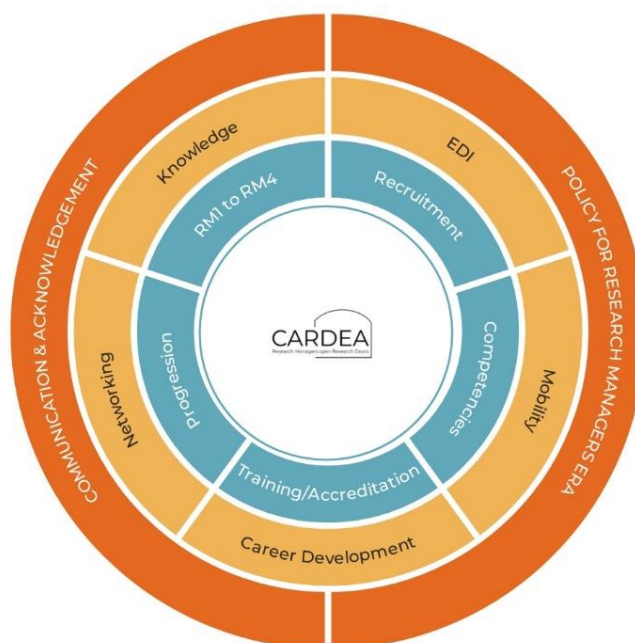


**Funded by  
the European Union**

The CARDEA project is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor REA can be held responsible for them.

<b>Agreed Research Design – WP2</b>	
<b>CARDEA - Career Acknowledgement for Research (Managers) Delivering for the European Area</b>	
<b>Project acronym</b>	CARDEA
<b>Grant No</b>	101058572
<b>Call identifier</b>	HORIZON-WIDERA-2021-ERA-01-20
<b>Start of project</b>	1st June 2022
<b>Duration</b>	48 months
<b>Work Package</b>	WP2
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CARDEA MATRIX



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## Executive Summary

This report on the Agreed Research Design outlines experimental methodologies for CARDEA research. The report details the validated method for all CARDEA research activities, including the questionnaires, instruments, data analysis plan, and research questions. Reference is made to relevant literature where appropriate. This is a living document that will be revised during the project lifecycle. The most up-to-date version will be available on the CARDEA website or on request by emailing [cardea@ucc.ie](mailto:cardea@ucc.ie).

## Introduction

CARDEA is the Ancient Roman Goddess of the hinge and is ideal to describe our project and it stands for Career Acknowledgment for Research (Managers) Delivering for the European Area. Research managers and research support staff make a valuable yet undervalued contribution to Europe's research excellence. Research Manager (RM) is a relatively young career profile, but RM's importance is likely to increase in the next 20-30 years as we tackle more complex problems than ever. These problems require a depth of technical specificity provided by researchers and breadth of visibility, application, and exploitation of results (the so-called T-model of competency). Research managers are ideally placed to develop such range but require structural supports to achieve this. The EU is ideally placed to take a leading role in this development as 22.2% of the world's best researchers are residents in Europe.

Unfortunately, there is a fundamental lack of understanding of European RM profiles, including role characteristics, demographics and career pathways. The profession is almost invisible from a policy, career development and career trajectory perspective compared to a principal investigator. Additionally, there is little consistency across Europe in salary scales, contracts, skills, competencies, and training opportunities for RMs. Finally, RM positions are often tied to individual grants leaving RMs often on precarious contracts throughout their careers. Despite this, RMs play a key role in administering research activities and valorising a range of hidden research outputs.

Additionally, the mobility and networking of Research Managers and those responsible for developing Research Managers will be included to ensure the Research Management ecosystem grows transnationally. We will learn from each other and support one another in bringing RM careers to the next level. Significantly these actions will provide a significant

evidence base to advocate the inclusion of RM exigences in policy, and we will target this proactively, targeting 38 key decision-making organisations.

Amongst the impacts of CARDEA will be an enduring network and Hub that can facilitate RM development and collaboration, a validated methodology to assess RM careers and a well-established baseline against which improvements can be objectively measured. This allows us to develop an RM Charter and offer a Concordat to institutions and organisations that make significant commitments to developing RM activities in a structured, mature manner.

**Our ambition is to create:**

- Improved knowledge for policy making about the training and networking patterns of research support staff and research management
- Measures to increase awareness amongst research management staff about existing training, networking and mobility opportunities at EU, national, and regional levels
- Ultimately, increase capacity and compatibility of cooperation and funding systems throughout the ERA for research management, and support to scientists.
- Improve awareness of the EU policy drivers and the EU research peculiarity in the Higher Education Institutions and Research organisations
- Preparation of the establishment of a central hub to provide the EU research system with the most appropriate “fit for purpose” skills in EU research management, with active involvement of entities located in widening countries
- Provide recommendations aiming at facilitating a clear career path for research managers at national and EU levels, enhancing their role towards the achievement of the new ERA objectives, including those addressed in the related Council Conclusions on the New European Research Area (13567/20).

CARDEA will develop supports to address these ambitions. Our consortium has enjoyed considerable success doing this for researchers already. We will create a detailed data-driven (500+ participants, 24 countries) knowledge space-defining and characterising the issues associated with the role of Research Manager. Based on this, we will develop a range of

solutions, including a Capacity Maturity Model to assess and improve RM activities, a novel RM Hub for networking and training to include a community of practice. Equality, Diversity and Inclusion, Widening Participation (EU13), Public-Private partnership actions will be at the core of our research, training, and enhancement activities.

**Partners in CARDEA Consortium:**

Universite De Liege Belgium

University of Juraj Dobrila In Pula Croatia

Ethniko Kentro Erevnas Kai Technologikis Anaptyxis Greece

University of Macerata Italy

The Henryk Niewodniczanski Institute of Nuclear Physics, Polish Academy of Sciences Poland

University Politehnica of Bucharest Romania

Institutio Fundacio Centres De Recerca De Catalunya Spain

University College Cork Ireland (Co-Ordinators)

*Figure 1: Partners in the CARDEA consortium*



## Research Introduction

A key element of the project is the development of a comprehensive evidence-driven knowledge space that describes the roles and responsibilities and other employment characteristics of Research Managers in Europe for the first time. This document describes the data gathering and analytic strategy used to develop this knowledge and evidence base.

This approach will support one of the primary aims of CARDEA, to inform European policymakers about the career structures, unique skills, training, networking, and mobility patterns of Research Managers in Europe. The results of this Survey will inform the development of a Research Manager Framework and complementary policy for consideration by the European Commission

### Research questions

In addition to the specific analytic outputs described below, the research was informed by three core research questions:

1. What are the roles, responsibilities, and skill sets that are described by the job title 'research manager'?
2. What are the identities experienced by research managers?
3. What are the career paths available to research managers?

### Unique aspects of this research

The CARDEA research aims to supplement previous research (e.g., the RAAAP initiative from INORMS) by

- Viewing the Research Management Ecosystem through Human Resource and Human Capital Development lenses
- A focus on EU Research managers to articulate internal and external similarities and differences with other states
- Inclusion of workplace well-being and professional identity data



### Data analysis techniques

The data was collected using an online survey on Qualtrics. Data was downloaded from the secure platform to MS excel, screened, cleaned, and uploaded to IBMs SPSS for analysis. Several calculations and groupings were developed. These are described below. Linear regression, ANOVA and MANOVA calculations are all included in the data analysis.

### Data Types

The data types and treatment for the CARDEA project are described in the associated Data Management Plan (D1.4). For the Survey, stored data is quantitative and qualitative responses to survey questions. No personally identifiable information was collected.

The following attributes were collected: racial or ethical origin, political opinions, religious or philosophical beliefs, trade union membership, genetic data, biometric dates, data concerning a person's sex life or sexual orientation, data from minors, criminal convictions/offences, or family status.

No data concerning name, photo, email address, bank details, posts on social media, medical information, or computer IP addresses for participants was collected.

However, data concerning health will be collected; namely, the CSO measure of disability (long term) will be collected.

The Survey was designed in August 2022 and piloted with CARDEA partners and select collaborators (n = 21) at this time. The link to the Survey was then circulated widely, and Data collection commenced for a general Research Manager Audience in September 2022. The instrument closed to responses in December 2022.

### Analytic strategy

The responses to each question were examined for response distributions and frequency characteristics. In addition, several grouping variables were calculated to facilitate inferential statistics to be calculated according to group characteristics. These are described in the calculation tables in the Playbook.

Analysis of the Free text responses proceeded with a word frequency analysis in the first instance. This analysis will be followed by thematic analysis where appropriate.

## Survey design and development

The CARDEA 2022 survey is an online questionnaire designed to develop an understanding of the role of RM in Europe in 2022. It was presented in English and hosted on the [Qualtrics](#) platform. The questionnaire consisted of 12 sections. Section 1 introduced the questionnaire and obtained informed consent. Sections 2-10 contained the core questions (see **Error! Reference source not found.** for a summary). Section 11 offered respondents an opportunity to provide any additional information they felt was relevant, and section 12 gave the debrief. Full details of the ethical approval process for the research are given elsewhere (D1.4). In total, the questionnaire contained 422 response options. The average time to complete the Survey was 30 minutes.

### Development process

The questionnaire had a deliberate focus on quantitative data but integrated extensive opportunity to resolve issues of definition, and individual understanding of response through the use of "please explain" boxes. The survey design involved a literature review (see bibliography), a review of previous instruments and consultation with the Cardea consortium. Where possible, published instruments were used to allow comparisons with other findings. Ethical approval for the research was provided by the UCC Social Research Ethics Committee (2022-149). The consortium piloted the questionnaire (n = 19) and revised to clarify working and remove redundancies.

## Section 1: Introduction and consent

Figure 2 shows the elements of the informed consent used. Figure 3 gives the detail of the background introduction that appears at the start of the CARDEA survey 2022.

Figure 2: Introduction section of CARDEA survey 2022

Consent statement: If you have read and understood the information above and are happy to continue to the questionnaire, please complete the following confirmations.

I have read the Information Statement above (or had it read to me).

I understand the information provided.

I am 18 or older.

I have read and understood the information provided. I consent to take part in this research project.

Yes

Figure 3: Information provided to potential respondents to the Cardea survey 2022.



### Understanding Research Managers roles, careers and professional contexts

#### Information statement

Thank you for your interest in this project. It is being undertaken as part of a Horizon Europe Project 'Cardea'. Cardea is a Horizon Europe funded project aimed at understanding, characterising, training and enhancing the role of Research Managers (RMs). Cardea stands for Career Acknowledgement for Research (Managers) Delivering for the European Area. The project is a joint initiative between Research institutions from Ireland (University College Cork), Belgium (Universite de Liege), Croatia (Sveuciliste Jurja Dobrile U Puli), Greece (Centre for Research and Technology - CERTH), Italy (Universita Degli Studi Di Macerata), Poland (Henryk Niewodniczanski Institute of Nuclear Physics, Polish Academy of Sciences), Romania (Universitatea Politehnica Din Bucuresti), and Spain (Fundacio Institutio Dels Centres De Recerca De Catalunya).

#### The CARDEA project aims to:

- Improve knowledge for policy-making about the training and networking patterns of research support staff and research management;
- Increase awareness amongst research management staff about existing training, networking and mobility opportunities at EU, national, and regional levels;
- Grow the capacity and compatibility of cooperation and funding systems throughout the European Research Area for research management, and support to scientists;
- Improve awareness of the EU policy drivers and the EU research peculiarity in the Higher Education Institutions and Research organisations;
- Establish central hubs to provide the EU research system with the most appropriate "fit for purpose" skills in EU research management, with active involvement of entities located in widening countries;
- Provide recommendations aiming at facilitating a clear career path for research managers at national and EU levels, enhancing their role towards the achievement of the new European Research Area objectives.

### **Purpose and type of research**

As part of this project, **we are interested in understanding your role as a research manager**. In particular, we would like to use a questionnaire to ask about your career journey to date, your skills and work context as well as your career aspirations. To understand these characteristics, we invite you to complete this questionnaire. Also, demographic information will be collected to see if characteristics such as gender and age influence research manager role profiles. No personally indefinable information will be collected.

### **Benefits and risks**

The anticipated benefit of participation in the research is an opportunity to contribute to a better understanding of the roles of research managers in a modern research ecosystem. At an individual level, participation will give you the opportunity to reflect on and quantify your career journey including the opportunity to capture a systematic characterisation of your skills and career experiences to date. No significant risks have been identified with this research but if you wish to discuss any aspect before, during or after participation, please contact us.

### **Participation**

You are being invited to participate in this research as a member of the research ecosystem.

Participation in this research will involve the completion of an 30-minute questionnaire. We recognize that this is a significant investment of time, and thank you for contributing to the body of knowledge in this area. We recommend you complete the survey on a laptop or similar device as several of the questions have multiple parts which may take longer on a mobile device. The topics included in the survey include demographic characteristics, career to date (including career choices), current skills and skills gaps, networking and mobility patterns.

Participation in the Cardea research is entirely voluntary, and you have the right to refuse participation, refuse any question and withdraw at anytime without any consequence whatsoever. You can withdraw from the research at any time by simply closing your browser.

If you wish to be informed about the outcomes of the research, you will have the opportunity to opt in for updates at the end of the questionnaire.

### **Confidentiality and data procedures**

No personally identifiable information will be collected from this questionnaire. Non-identifiable records will be stored indefinitely and archived on an open access repository in accordance with open science requirements. This data may be reused by the Cardea team (or other researchers) in the future (for example to assess improvements in research manager careers longitudinally). Note that the confidentiality of information provided cannot always be guaranteed by researchers and can only be protected within the limitations of the law - i.e., it is possible for data to be subject to subpoena, freedom of information claim, or mandated reporting by some professions.

If you have any questions about the use of your data in this study, you should contact the project team in the first instance. If participants have concerns about the study and wish to contact an independent person, please contact UCC's Data Protection Officer Catriona O'Sullivan ([gdpr@ucc.ie](mailto:gdpr@ucc.ie), +353(0)21 4903949).

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This project has received funding from the *European Union's Horizon Europe Research and Innovation programme* under grant agreement No 101058572.

## Section 2: Demographics

Standard demographic information was gathered in section 1. The questions were informed by [Eurostat](#) and Ireland's [Central Statistics Office](#). The demographic questions included: gender, age, disability, nationality, country of residence, principal language, and other languages (and fluency).

## Section 3: Education

Section 3 contained seven questions to capture the educational profile of research managers. This included the highest level of educational attainment (using the European Framework of Qualifications), disciplinary areas, research management qualifications and other relevant qualifications. This section also asked about professional memberships.

## Section 4: Employment

Section 4 contained 12 questions examining the employment characteristics for research managers, including working hours, contract types, flexible and hybrid working arrangements, out-of-hours working, level of responsibility, length of service, organisation characteristics, salary, and pathway to rm career.

## Section 5: Job profile

Section 5 contains 15 questions examining the nature of the profile role research management beyond the individual and then probed the identification of individual characteristics associated with research management. The role attributes examined include job titles, agreement between title and actual role, national and organisational recognition of RM as a defined role, dimensions of research management roles, relative generality v speciality of Rm roles, funding promotion and progression and salary scales conditions for RM roles. Finally, the section on RM job profiles looks at the organisational context (team size) for research managers and asks if the respondents are committed to a long-term career in research management.

## Section 6: Professional Development

Section 6 is a short section looking at the professional development and professional support activities for RM. The questionnaire examines whether RM has a Professional Development Plan (PDP) and whether they engage in continuing professional development (CPD).

Respondents are also asked about additional supports that would be beneficial in the context of professional development for workplace efficacy. There are no derived variables in this section of the Survey.

#### Section 7: Quality of Work Indicators

Section seven considers a range of workplace quality indicators. These include examining the congruence of individual and organisational values, the fit of the Research Manager role within the organisation and the role of the Research Manager in organisational decision making. In addition, participants were asked about any workplace benefits, irregular working practices and their perception of job security.

#### Section 8: Networks, Mobility, Equality, Diversity, and Inclusion

Understanding the networking, mobility and inclusion characteristics of research management is a vital ambition of the CARDEA project. Therefore, a range of networking and EDI questions are included in the Survey; these include assessing the use of planned networking activities, international professional mobility and the factors that have influenced mobility. We have also evaluated differences between citizenship and country of employment, number of previous employers and job roles and whether Research Managers have changed job type in the past. Finally, of direct importance to the Commission is an assessment of whether Research Managers have availed of any EU mobility schemes.

Beyond mobility, CARDEA has also examined EDI dimensions to Research Management. Participants were asked whether their organisation has a Gender Equality Plan (GEP) or any EDI recognition schemes. Participants were asked to rate their satisfaction with various gendered dimensions of the workplace. Finally, respondents were given free text to elaborate on their thinking about the EDI dimensions of Research Management.

#### Section 9: Professional Identities

A novel aspect of the CARDEA research is that we aim to move the discourse beyond an analysis of demographics and working conditions and develop an understanding of the characteristics of professional identity and lived experience of becoming and being a Research Manager. In section 9, Professional Identities, we asked about the experience RM have working across traditional research boundaries (disciplinary and role). We also examined

workplace engagement and work well-being factors using standard psychometric instruments. Finally, the experience of stress by Research Managers is considered.

#### Section 10: Skills

A final key deliverable for CARDEA is a set of training responses to training needs. Section 10 captures the self-reported importance of RM relevant skills reported in the literature. In addition, participants were asked whether they had ever been offered training in those skills.

For each of the named skills, participants were asked:

- (A) How important do you think this skill is for Research Management? 1 is 'not at all important' and 5 is 'vital for Research Management'.
- (B) Have you ever been offered training in this skill? Yes, No

#### Section 11: Final Comments

In the final section of the Survey, participants were offered the opportunity to offer additional comments and clarifications. The prompt questions are given below. Thematic analysis will be used to analyse the results.

How would you describe your career journey (to date and future aspirations) in your own words?

(4-5 sentences)

Define management, you feel it applies to Research Management in 2022. Our purpose here is to understand what you feel is distinctive about research management, as part of a holistic research ecosystem

What changes would you like to see to the RM profession in the next ten years?

If there is anything else you feel is relevant, please use the space below to let us know.

#### Section 12: Debrief

Thank you for your participation in this project. Your participation will help us understand and characterise the role of researcher managers in the research ecosystem.

The data collected from this questionnaire will be checked to protect anonymity and archived on the Digital Repository of Ireland. You have the right to withdraw future participation retrospectively, without necessity to give a reason by contacting the research team and requesting your data be removed.

If you found any question or aspect of the study distressing, please feel free to contact the research team, arrange to see a career counsellor or member of the human resources team with responsibility for employee well-being within your organisation or contact your closest [EURAXESS](#) career development centre.

If you wish to be kept informed about the findings of this research, please email [cardea@ucc.ie](mailto:cardea@ucc.ie).

Thank you for your participation in this research, on behalf of the Cardea team The UCC Cardea team Dr Joanne Uí Chruálaoich, [j.uichrualaoich@ucc.ie](mailto:j.uichrualaoich@ucc.ie), +353(0)863840587 Mary Kate O'Regan, [marykate.oregan@ucc.ie](mailto:marykate.oregan@ucc.ie).

### **Target populations and Sampling methods**

Non-probability sampling was used to recruit research managers for the Survey using the established network from CARDEA partners, REA at the European Commission, EARMA and social media (primarily LinkedIn). A target of 500 complete responses was established. In addition, recruitment was conducted using a gatekeeper approach where an organisation's HR manager (or equivalent) circulated a link to the Survey via local email lists.

Participation in the CARDEA survey was voluntary, and participant anonymity was protected. This is particularly important for email recruitment within professional organisations as individuals share significant personal material online. A snowballing technique was used to capture responses from various organisations, with participants invited to share the research with other research managers.

The investigators were transparent about the research's aims, risks, and benefits.



Inclusion criteria included a willingness to complete a 30-minute survey and holding a research management role/job. Exclusion criteria were age less than 18. No monetary incentive was provided, although participants will be offered the opportunity to sign up to receive updates from the project. Over 30 respondents opted in to this follow-up.

Informed consent was obtained as a precondition to accessing the survey questions, and responses will be collected anonymously using Qualtrics with data stored on encrypted drives. Participants were made aware that confidentiality of information provided cannot always be guaranteed by researchers and can only be protected within the limitations of the law, i.e., it is possible for data to be subject to subpoena, freedom of information claim, or mandated reporting by some professions. This information will be included in the Plain Language Statement and Informed Consent Form.

### **Ethical Issues**

Participants were informed of the content of the surveys before participation and asked if they were comfortable with the material. Participants were also provided with a debriefing document on the completion of the surveys and were offered contact details of the researchers should they wish to follow up.

As the research measured attitudes in a non-vulnerable adult population, the level of risk is low. However, a risk analysis was conducted to identify physical, psychological, invasion of privacy, and breach of confidentiality as well as membership of at-risk groups in the study cohort. On the basis of this analysis: no physical risks were identified; psychological risks are minimal. Briefing materials were designed to reduce these further. In addition, robust data collection and storage procedures were used to reduce the risks of invasion of privacy. This supplements the anonymity described above. As the target group is the general adult population, no special protections for "at-risk" groups were considered necessary.

Participant well-being is the most important element of any research. The UCC research conduct policies have informed the preparation of this risk analysis and management proposal. These include considering the language used in the briefing and debriefing materials to ensure it is understandable to an international audience. Similarly, the instruments used have been chosen as they are relatively short to minimise the time commitment requested from participants. Where standard or published instruments are available, these have been

used. For example, the CSO census questions have been used to inform the data collection for demographic data, and Gallop Q12 is used to assess career engagement.

Ethical approval for the research was provided by the University College Cork Social Research Ethics Committee (SREC), approval number 2022-149

### **Known Limitations**

Any research has limitations, and the CARDEA survey is no different in this regard. One of the key limitations is the length of the Survey. The researchers have received feedback that the Survey (average time to complete is 30 minutes) is too long. This is reflected in the relatively low completion rate, with almost 50% of respondents who started the Survey not completing it.

### **Communication**

The Cardea consortium will leverage the strength of their international networks to ensure the fullest dissemination. Through HRS4R and EURAXESS networks, we have a much wider base than the 8 core partners, and therefore we can move beyond these core parties and achieve the project ambitions at a fully European level.

Our communication goal is to ensure we capture representation from all stakeholders in the research manager professional sphere and provide regular communication of progress, activities and seek stakeholder engagement through the lifetime of the project.

The communication plan targets underrepresented stakeholders such as wider society (e.g. citizen scientists), regional partners not part of the founding group, underrepresented demographics and SES categories. The project will develop a visual identity and brand to be used on all communication, including the website, blog (LinkedIn), competency framework, and all reports.

A dedicated website will be developed to act as an ongoing landing page to collect, curate and host a wide range of information and opportunities etc for research managers.

A biannual email newsletter will be prepared and circulated to all stakeholders. Each partner will contribute to each newsletter.

The consortium will identify relevant industry, educational and consultation events for participation. This will include geographical targeting events to widen communication opportunities and trade and commercial publications to raise awareness. This will be an ongoing activity.

The main channel for communication will be:

- Website,
- the virtual learning environment,
- newsletter,
- social media (primarily LinkedIn and Twitter),
- interactive factsheets with infographics, and reports.