

49

Science Policy Briefing • April 2013

New Concepts of Researcher Mobility

– a comprehensive approach including
combined/part-time positions

Contents

- 3 • Scope
- 3 • Challenges
- 3 • Researcher Mobility – types, concepts, challenges and recommendations
- 5 • Combined/Part-time Researcher Positions – types and new concepts
- 6 • Transnational Institutional Research Collaboration
- 6 • Other Initiatives Stimulating Researcher Mobility and Scientific Quality
- 7 • Conclusions

Foreword

The mobility of researchers is of growing importance for the current global science system. However, “mobility” can no longer be seen only in physical and geographical/international terms. The European Science Foundation’s Member Organisation Forum ‘European Alliance on Research Careers Development’ has been a platform for the discussion of adequate treatment and development of “new concepts of researcher mobility”.

As the increasing diversification of careers is recognised, research organisations need to revisit their policies towards both mobility and evaluation of researchers’ achievements. We therefore suggest new concepts of mobility and their acknowledgement, including combined part-time positions as a means to support different forms of mobility.

Mobility is not a goal in itself, but rather a means for international research collaboration across fields and sectors.

The internet opens up possibilities for virtual mobility and establishing virtual multidisciplinary network research centres. Centres of Excellence no longer need to be established as one physical geographical location. Virtual network centres, as well as databases and registries accessible by eScience, may combine excellent and synergetic research groups across the world without the need for physical mobility. Flexible opportunities should be encouraged, stimulating a more effective use of human and financial resources.

Overall, we recommend that whatever the type of mobility (international, intersectoral, interdisciplinary or virtual) researcher mobility should never be seen as an end in itself but rather should focus on the value of effects derived from different types of mobility.

Mr Martin Hynes
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Scope

Research quality is associated with international research collaboration, ‘critical mass’, frontline infrastructure and competition for funding. This paper presents a comprehensive concept of researcher mobility¹ including combined/part-time positions that may meet researchers’ individual needs, foster scientific excellence, facilitate knowledge transfer across disciplines, sectors and countries and even counteract brain drain from less scientifically attractive areas. We also suggest novel approaches to acknowledging these new concepts of researcher mobility in peer review, staff appraisal or other forms of researcher assessment.

Challenges

Access to international frontline research and innovation is a prerequisite for globally competitive economies in high-cost Europe. Meeting the grand societal challenges requires new knowledge generated through increased interdisciplinary research cooperation across academia, sectors and countries. Facilitating international researcher mobility and cross-disciplinary research collaboration will be keys to success. Professional/transferrable skills will be increasingly requested. Research in the humanities and social sciences and governmental knowledge will be essential for societal adaptation to, for example, new technologies, climate change and ageing populations. Diverse career paths including industrial and governmental practice should be stimulated and esteemed in peer review, selection procedures and career advancement schemes.

Core prerequisites for realising a successful and competitive European Research Area (ERA) include a critical mass of skilled researchers and diversity of research groups, including gender diversity – also in senior positions and selection committees. By allowing individual choices and balance with private life, the attractiveness of the research profession must be improved and obstacles to free mobility of researchers reduced. Europe must be able to attract, retain and network world-leading researchers across fields and sectors in an increasing global competition for scientific talent. At the same time

brain drain from less scientifically attractive areas should be counteracted. New concepts of researcher mobility including combined/part-time positions may contribute to achieving these goals.

Researcher Mobility – types, concepts, challenges and recommendations

Overall, we stipulate that, no matter what type under consideration, researcher mobility should never be seen as an end-point itself. What we should rather focus on is the value of the outcomes of any form of mobility.



International mobility:

Physical mobility across countries

- **Challenges:**

We see the need to smooth immigration and work permit procedures for incoming researchers and to make work permits, grants, social benefits and (supplementary) pension rights portable across borders for researchers and their families, including for researchers from third countries, i.e., from outside Europe. Further, to facilitate procedures for returning home, and ensure fair recognition of experience abroad (closed recruitment).

- **Recommendations:**

Above all, physical mobility has to be seen as a means to foster international collaboration. Given the increasing variety of researchers’ careers and the demand for balancing private life and work we advocate to **allow for more flexible forms of physical mobility**, e.g., by

- means of short-term stays or split stays over a certain time period;
- integrating international mobility in national grants;
- offering combined/part-time positions on time bank terms (for details, see below);
- acknowledging physical mobility based on documented stays abroad or signs of collaboration and participation. (The source of information about the researcher’s achievements should always be from sources independent of the researcher him- or herself.)

1. See also the report from the European Commission Expert Group on the Research Profession: *Excellence, Equality and Entrepreneurialism – Building Sustainable Research Careers in the European Research Area*, Brussels, 20 July 2012. http://ec.europa.eu/euraxess/pdf/research_policies/ExpertGrouponResearchProfession.pdf

Intersectoral mobility:

Mobility across academia, industry and public sectors

Challenges:

Mobility from academia to industry is today often a one-way issue as lack of high-ranked scientific publications in industry often prevents return to an academic position. Considering that research organisations in Europe increasingly stimulate intersectoral mobility of researchers as well as public/private cooperation, we see an urgent need for coherent policies regarding the acknowledgement of intersectoral mobility.

Recommendations:

Recognition of merit and achievements should be acknowledged by parameters recognised in both directions. Industrial PhD programmes² (partly) funded by industry are a good solution for R1 (early stage) researchers.³ Given the strong emphasis on publications in peer review we encourage researchers working in companies to publish to the widest possible extent in compliance with IPR rules. Research organisations should have a closer look at existing contractual regulations between independent or governmental industry-oriented research institutes and industry to see if the terms for scientific publishing can be improved. Based on this, research organisations should provide guidance on how to set up transfer agreements and contractual regulations enabling publications in private enterprise environments. In cases of stated intersectoral mobility in a researcher's CV, peer review and assessment procedures should give stronger emphasis to research proposals, organisational achievements and acquired professional skills rather than to scientific merits only.

Interdisciplinary mobility:

Mobility across research fields

Challenges:

In view of existing discrepancies between the claim for inter- or transdisciplinarity in research projects on the one hand and sometimes persisting disciplinary assessment procedures on the other, we see the need for coherent approaches by research organisations in Europe. Issues to be addressed concern:

- recognition of diverse, nonlinear careers;

2. E.g., CIFRE in France, IRC Employment-based PhD in Ireland, Nordic Industrial PhD

3. European Commission: *Towards a European Framework for Research Careers*, EU Commission DG Research and Innovation, Directorate B-Skills, 21.07.2011

- problems for expert evaluators to judge and acknowledge achievements outside their own mainstream field;
- how to evaluate multidisciplinary versus new borderline concepts and new knowledge created by combining fields;
- persisting problems to get papers published outside mainstream fields or own former field.

Recommendations:

We explicitly welcome the trend towards international interdisciplinary journals in specialised thematic areas. We see the need, using bibliometric approaches, to take note of such journals and to incorporate them in relevant indices. Evaluations of research with emphasis on thematic rather than disciplinary terms could be recommended. In addition, research organisations should give more importance to review panels rather than individual written review as was advocated by the ESF Member Organisation Forum on Peer Review. We especially encourage international panel reviewing in order to avoid predominant national trends and biases.

Virtual mobility:

International, interdisciplinary and intersectoral research collaboration acknowledged by outcome parameters (e.g., co-publication, co-patenting) without (need of) physical or interdisciplinary or intersectoral mobility

Challenges:

Recently, the notion 'virtual mobility' is used more and more, although the underlying concept might not always be clear. The internet opens possibilities for virtual mobility and the establishing of virtual multidisciplinary network research centres. Centres of Excellence no longer need to be established as one physical geographical location. Virtual network centres and databases and registries accessible by eScience may combine excellent and synergetic research groups across the world without physical mobility. Flexible opportunities should be encouraged, stimulating a more effective use of human and financial resources in research, in line with the core idea of ERA. It is therefore essential to agree on a common definition and to develop a set of indicators on how to measure individual contribution (counteract strategic 'invited in' co-authorship).

Recommendations:

In order to achieve a common understanding we suggest the following definition: *What we understand by 'virtual mobility' refers to cross-border research coop-*

eration based on verifiable signs of collaboration and participation. The source of information should always be independent of the researcher to be considered.

Assessment should be based on elements such as:

- co-publications, co-patenting;
- cross-border grants;
- conference papers;
- organising boards;
- international peer review panels;
- appointments based on merit by an official third party, e.g., invited in on expert groups.



Cross-cutting recommendations

In order to reach the above mentioned goals we suggest:

- providing standardised CV in publicly available information systems (such as EUROCRIS) stating different forms of mobility;
- recognising non-academic achievements in peer review, e.g., project management, people management, budget management, acknowledging the European Alliance on Research Careers guidance on researchers' professional development;
- normalising a researcher's achievements by normalising the absolute experience to the time actually spent in research (e.g., be aware that the H-Index⁴ is usually not normalised).

Combined/Part-time Researcher Positions – types and new concepts

A researcher engaged in two institutions simultaneously will facilitate knowledge transfer between the institutions 'in person'. Combined, part-time researcher positions will allow mobility and direct knowledge transfer and cooperation and may link institutions, disciplines, countries and sectors (industry/academia/public). If the adjunct position is made on time-bank terms, i.e., a part-time position defined by a certain %

4. "A solid record of publications: bibliometric indices are increasingly used for assessing publication track records. Care should be taken when applying these quantitative measures; these must be used as complementary information and not as sole determining factors in valuing publication track records", ESF (2011): *European Peer Review Guide*, p.25 at <http://www.esf.org/publications/member-organisation-fora.html>
Reference to H-index definition: "The h-index is based on a list of publications ranked in descending order by the Times Cited. The value of h is equal to the number of papers (N) in the list that have N or more citations." At http://images.webofknowledge.com/WOK45/help/WOS/h_citationrpt.html

of full position per year allowing the work-load to be flexibly distributed in short or long periods over the year according to need, the two positions may be easily combined in practice and open for short- or long-term mobility.

The Norwegian 'Professor 2' 20% combined/part-time position scheme is a well-established example,⁵ said to be modelled on a Harvard University/MIT scheme. Full Professor academic merit is required. Typically, employees in industry, hospitals, etc. may have a +20% 'Professor 2' position at a university as add-on to their main position – financed by either party. A full professor also may have a 20% position at another university, either in the same or a different field, i.e., across institutions, disciplines, sectors and countries. The 'Professor 2' position may be permanent and linked to a main position (e.g., for consultants in hospitals, the candidates being simultaneously evaluated for both positions). It may also be personal (linked to the person regardless of change of main position), permanent or time-limited (e.g., four years), established upon personal invitation, or by open call by the university, in most cases linked to a specific faculty and institute. Several countries have corresponding models.⁶

The scheme has proven effective for knowledge transfer, networking and research collaboration. Flexible time-bank-based part-time positions attract frontline researchers who want to collaborate, but don't want to leave their main position or family for a longer period. Norwegian Centres of Excellence (CoEs) typically have flexible part-time 'time-bank' agreements with foreign frontline researchers, attracting top researchers for long-term collaboration beyond single project duration. This also facilitates researcher exchange and increasing cooperation between the institutions. Corresponding schemes also exist on lower academic levels, but to a lesser degree.

Such schemes should be introduced as part of ordinary employment conditions (not limited to project duration) as well as in scholarships and grants both nationally and in EU instruments (Marie Curie Actions and other European support instruments). Combined/part-time cross-sectoral/ -disciplinary/-national researcher grants are included in the Commission's proposal for Horizon 2020.⁷ Combined/part-time positions could be established at all levels in the hierarchy to stim-

5. Around 1,350 Professor 2 positions in Norway 2011 (NIFU 2012)

6. E.g., 'shared instruments' offered by the Karlsruhe Institute of Technology, further info at: http://www.kit.edu/downloads/Research_Flyer_Kooperation.pdf

7. E.g., COM(2011) 809 final 2011/0401(COD) p. 37-38

ulate ‘double careers’. They are effective initiatives for direct knowledge transfer by bridging institutions, disciplines, sectors and countries, stimulating new knowledge through diverse careers and, as they often include teaching, strengthen the Knowledge Triangle. The scheme might also be suitable for implementation of the COM-proposed ‘ERA Chairs’ (attracting excellent researchers to build scientific quality in low-performing institutions) and to counteract brain drain from less attractive areas by keeping them connected and cooperating.

Existing examples of combined/part-time researcher positions include national and international main position/part-time position agreements (e.g., 100/20% or 20/100%, i.e., both ways), within or across fields/disciplines/sectors, between a university and, e.g., another university or Higher Education Institution, a R&D institute, an industry or a public/governmental body (e.g., the Armed Forces). Co-location of university, hospital, biotech centres, R&D institutes and industry, e.g., in science parks makes it easier to combine such positions nationally.

Transnational Institutional Research Collaboration

This includes

- Nordic EMBL Partnership for Molecular Medicine (= EMBL-associated virtual network CoE combining frontline researcher groups from three Nordic countries, national basic funding);
- Nordic Centres of Excellence (NCoEs) (= virtual network centres combining frontline researcher groups from three or more Nordic countries, one centre coordinating, Nordic common pot funding on top of national basic funding);
- Nordic master degree (between universities in two different Nordic countries);
- Nordic PhD (in process, between universities in two different Nordic countries);
- Nordic industrial PhD (between university and industry in two different Nordic countries).

Corresponding transnational initiatives might be of benefit within Europe, in line with the European industrial PhD programme.

Other Initiatives Stimulating Researcher Mobility and Scientific Quality

To make European research careers attractive for scientists from different fields and from all parts of the world, Europe should develop an integrated strategy for researcher mobility, including *opening up national funding* to foreign applicants, “*money follows researchers*” – schemes and facilitation of *dual careers* (i.e., facilitate spouse employment opportunities by pre-established networking in a variety of surrounding institutions and industries). Europe should establish and finance global common use of *frontline research infrastructure* to attract researchers worldwide and contribute to scientific excellence, and establish and finance *open access* to (governmentally sponsored) research literature, databases and registries.

Mobilising the potential of women researchers is a key element for increasing the number of researchers in Europe and utilising the now partially wasted potential of women researchers. Today women outnumber men at graduate level, represent around 50% at PhD level, but only around 20% at Grade A (e.g., full professor) level.⁸ Incentives should ensure proper and balanced gender recruitment to research positions and committees – including leading researcher positions. In addition to making better use of the quantitative research potential in both genders, this will also contribute to greater scientific quality and innovation through greater gender diversity in research groups manifested by diversity of ideas and cognitive strategies.⁹

Combined/part-time position may be attractive for women researchers as it might be easier to combine with family life, e.g., by keeping the part-time position – and career continuation – during periods of increased family demands. Contributing to research continuity, this may also increase recruitment of women to leading research positions.

8. European Commission: *She Figures 2012: Gender in Research and Innovation, Statistics and Indicators*, Eurostat, 2012. See more at: <http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=1282&lang=1>

9. GenSET report 2010: *Recommendations for Action on the Gender Dimension in Science* at http://genderinscience.net/downloads/genSET_Consensus_Report_Recommendations_for_Action_on_the_Gender_Dimension_in_Science.pdf

Conclusions

Recognising the increasing diversification of careers, research organisations need to revisit their policies towards both mobility and appraising researchers' achievements. We suggest new concepts of mobility and their acknowledgment including combined part-time positions as a means to support different forms of mobility: International, Intersectoral, Interdisciplinary and Virtual.

Mobility is not a goal in itself, but rather a means to foster quality and support (international) research collaboration across fields and sectors. Researcher mobility should no longer be associated with physical and geographical mobility only. Long-term physical mobility may be needed for the education and build-up of researchers from less-favourable scientific environments, but is hardly necessary to set up collaboration between frontline labs and research groups. Combined part-time positions may also counteract brain drain from less favourable locations by preserving the link to frontline research institutions for future collaboration.

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Acknowledgements:

ESF is grateful to the authors and contributors of this Science Policy Briefing as well as to the Reviewers and to the members of the ESF Member Organisation Forum 'European Alliance on Research Career Development'.

The European Science Foundation (ESF) was established in 1974 to provide a common platform for its Member Organisations to advance European research collaboration and explore new directions for research. It is an independent organisation, owned by 67 Member Organisations, which are research funding organisations, research performing organisations and academies from 29 countries. ESF promotes collaboration in research itself, in funding of research and in science policy activities at the European level. Currently ESF is reducing its research programmes while developing new activities to serve the science community, including peer review and evaluation services.

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ISBN: 978-2-918428-96-1
April 2013 – Print run: 1500