

Report of the 2014 SGHRM WG on Professional Development of Researchers

Adopted by the SGHRM on 29 September 2014

“Professional development for researchers is an issue on the political agenda in many universities, funding bodies and governments. In the light of the great investments in researcher education and training across Europe it would be beneficial if the EC would go further in investigating how to debate/offer a common framework for inspiration to the institutions working with researcher development and training.”

1. INTRODUCTION

The SGHRM agreed on 11 June 2014 a mandate for a WG on the Professional Development of Researchers in the overall context of the Innovation Union policy target of one extra million researcher jobs in Europe to enhance the research intensity of its economies. The key outcome should be “A map of existing (online) tools for individual researchers' career development guidance with examples in Europe and worldwide.” The full mandate is at Annex 1.

The work of the WG was intended to build on the conclusions from the work of the 2011-2012 SGHRM Working Group on the professional development of researchers¹ and also to take account of the ESF report and recommendations on a pan-European Professional Development Framework for Researchers².

In particular the report of the WG was to contain enough detailed information to support the exchange of information and facilitate exchange of best practices. It should also help the Commission to further develop/promote (online) tools accessible to all researchers across a range of disciplines and professions, wishing to map and develop their competences to move forward in their career.

Previous Working Groups made clear that professional development provision varied significantly in quantity and nature across the different research career categories. In particular there was a sharp decrease in skills training beyond the doctoral (R1) level. Professional development for researchers must also cater for the multiple career options within and beyond academe thus making guidance on their career and professional development essential for wider personal and professional development. The WG was asked to look at institutional examples around Europe that merit specific attention and also to note the specific interesting example of the Vitae Researcher Development Framework in the UK.

2. PRACTICAL ISSUES

Membership and meetings

The group was chaired by an SGHRM member (Iain Cameron, UK) and the aim regarding membership was to be as inclusive regarding stakeholders as practical. The membership was finalised by the EC (DG R&I) in consultation with the Chair along the lines agreed in the mandate. It comprised SGHRM members or their nominees from countries with a particular interest or experience, as well as university associations, EURODOC, Science Europe, and OECD (RHIR).

¹ Professional development of researchers, SGHRM working group, May 2012.

http://ec.europa.eu/euraxess/pdf/research_policies/Professional_Development_of_Researchers_Provisions_forthe_Fut.pdf

² A pan-European Professional Development Framework for Researchers (ESF August 2012)

<http://www.esf.org/coordinating-research/mo-fora/european-alliance-on-research-careers-development.html>

Expert representatives were from Vitae (UK) and Aarhus and Groningen Universities. Ultimately 23 representatives from 15 MS/ACs and 7 other organisations participated at some point (see list in Annex 2). The WG held three meetings on 16 Sept 2013, 21 Jan 2014 and 25 March 2014 with additional exchanges by email.

3. STAKEHOLDER QUESTIONS, ANALYSIS AND RESULTS

Introduction

The WG agreed that it was essential to ask a small number of questions directly to Ministries, Research Funding Organisations and Research Performing Organisations to capture the extent to which researchers working in European institutions:

- are aware of the competencies needed to be an effective researcher;
- have structured Professional Development Frameworks made available to them; and
- are equipped to review and evaluate their competencies and career development.

The online form was created using the Bristol Online Survey³ (BOS - a UK system for which suitable licences were held by the UK participants) - a WORD option was also made available although the majority of entries were online. The questions were sent to stakeholder groups on 19 Nov 2011³ with responses requested by 6 Jan – later extended to the end of February⁴. The aim was to get responses from as wide a range of recipients as possible. At the final count 61 responses had been received from 40 RPOs, 12 Research Funders, 6 Ministries and 3 others across 21 Countries.

Table 1: Summary of responses received by country and organisational type.

Country	Research Performing Organisations	Research Funding Organisations	Ministry	Other	Total
Austria			1		1
Bulgaria	1				1
Croatia	3	1			4
Czech Republic	2				2
Denmark		1	1	1	3
Estonia	1	1			2
Europe				1	1
Finland	7				7
France	1				1
Germany	11	1		1	13
Hungary		1			1
Italy			1		1
Lithuania		1			1
Luxembourg		1			1
Netherlands	1	1	1		3
Norway	7	1	1		9
Poland		1			1
Serbia	1				1
Slovenia	5				5
Spain		1			1
Switzerland			1		1
UK		1			1
Grand Total	40	12	6	3	61

³ Bristol Online Survey - <http://www.survey.bris.ac.uk/>

⁴ Later responses received into April were also included.

The questions

The introduction to the online questions made a number of statements intended to introduce recipients to the topic (see Annex 3). In particular it noted that:

- Competitiveness in the global labour market and successful career development means that researchers must to be able to fulfil a range of new roles
- It is important that Member States prepare national skills agendas to enable researchers, as all other professionals, to acquire new skills throughout their career⁵.”
- The Working Group is considering the opportunity and need for adopting a common Researchers' Development Framework, focusing on individual researchers

Further, for clarity, it included key definitions:

- Researcher: referring to stages R1 to R4 of the European Framework for Research Careers
- Competencies: the knowledge, skills and attributes to be an effective researcher
- Professional Development Framework: A tool to encourage self-reflection by researchers.
- Researchers' Professional Development: a structured approach to the continuous development of researchers' knowledge, expertise and attributes.

Analysis of responses to the questions:

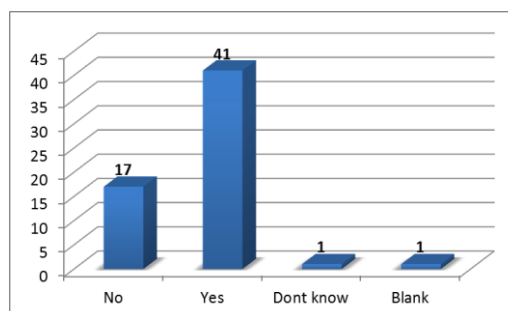
Members of Working Group carried out separate analysis of questions eight through to thirteen. The important findings from this analysis are presented below.

Section B: Researchers competencies (Questions 8 and 9)

Q8. Are there "defined competencies" that you expect researchers to develop and that are set out formally in your country/organisation?

A clear majority of the respondents confirm that they have defined competencies that the researchers is expected to develop.

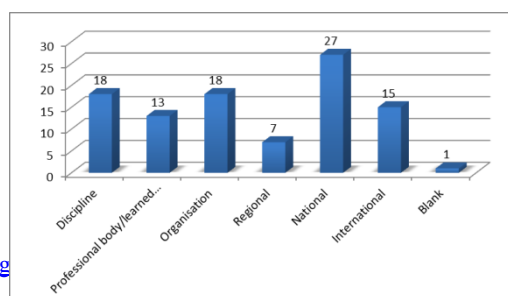
However only 13 of these respondents described some kind of programme aimed at career and competence development (see responses to Q8c below).



8.a. At what level are the competencies applicable? (N = 41, several entries possible)

The answers did not give a clear picture of where the competencies really are applicable.

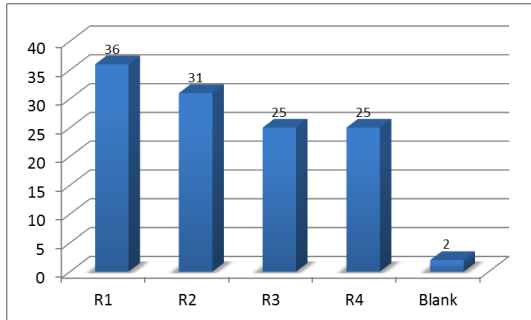
Drawing on the descriptions provided, an interpretation may be that the competencies



⁵ OECD (2012), [Better Skills, Better Jobs, Better Lives: A Strategy](#)

needed for entering positions tend to be national and discipline specific, and systematic policies and instruments on career development seem to be more institutional. In other words institutions may be more proactive in this field than the national/governmental level – although this finding may require some validation.

Q8.b. Who is the target audience? (N = 41, several entries possible)



Early stage researchers are most frequently the target audience. It is however interesting that 20 of the respondents regarded the target as all stages in the research career. It is clear that besides an emphasis on the doctoral and postdoctoral level these programmes are to some extent said also targeted to the R3 and R4-stages. This analysis is not able to say how effectively competencies are used at the higher stages.

It was also noted that 13 of those 20 answering “All stages” are not among the group of 13 mentioned under Q 8. above.

Q8.c. Please provide a brief description, including their relevance to different levels of experience (R1 - R4) and discipline or academic area

As noted above, although 41 of the respondents have answered yes, 24 of these describe qualifications required to enter the positions at the different levels. Out of the 41 that have answered yes, only 13 describe competence programmes that the researchers are expected to develop after they are hired. The WG was looking for the dynamic element that happens after passing the threshold of getting the job and the results argue strongly that there is a real difference between structured career planning and competence requirements for entering the different positions/levels. Out of the 13 respondents describing programmes the most elaborated and to some degree nationally structured systems for competence development seems to be found in Britain, Germany, Finland, the Netherlands and Switzerland.

If, as seems the case, 41 yes responses are given for a range of different reasons, a firm impression from the answers is that researchers in most countries and institutions are expected to continuously develop their competencies. The fact that most respondents regard this as relevant for all stages in the research career confirms the impression that there is a demand for better policies in this field. Nevertheless **most European countries do not have national system of structured professional development**. The challenge is that the means to accomplish this is highly varied, to say the least.

Section C: Personal professional development frameworks for researchers (questions 10 and 11)

Q10. Do you have any "personal professional development frameworks for researchers" in your organisation/country, for example so they can assess their competencies, record their progress, identify their development needs, or consider their career development?








Slightly fewer organisations state that they have a personal professional development framework in place (24) as state that they do not (29) with 8 don't know or blank. It is notable that the number stating yes is fewer than the 41 that state they have defined competencies (Q8). Even though question 10 was related to a framework, some positive answers were given where only a programme was in place.

Q10.a. Who is the target audience?

Of the 18 respondents who answered, the majority (12) selected all four stages (R1-R4). Other responses were: R4-R2 (1), R3-R1 (1), R3-R2 (2), R2-R1 (3), R4 (1) and R1 (1).

It seems that if a personal professional development framework is in place that it will most likely cover the full range of researchers (R4 – R1). This result is similar to that for competencies (Q8)

10.b. At what level is the professional development framework available? (N=24, Several entries possible)

10.b. At what level is the professional development framework available?			
Discipline specific:		n/a	8
Professional body/learned society:		n/a	6
Organisation:		n/a	21
Regional:		n/a	4
National:		n/a	12
International:		n/a	3
Other (please specify):		n/a	3

Most professional development tools are available on the level of organisations in many cases backed-up by the national level. In some cases the national level has much less severe competence requirements that what is asked at the level of the individual organisations. The national level is setting the minimum rules.

Q10.c. Please provide a brief description of its purpose and features/functionality, including their relevance to different levels of experience (R1 - R4), discipline or academic area.

Q11. Any other comments?

While some institutions have a framework for the professional development of researchers in place others implement specific programmes targeting mostly doctoral candidates. For some of the responses it is not clear whether they belong to a framework or a programme.

It is clear that a principal use of professional development tools is in programmes for doctoral candidates (R1, early stage researchers) where the tools are used to monitor and develop skills which the organisation has identified as being important. In most cases these are horizontal skills like entrepreneurial or social skills, professional and management skills. At this level the assessment of progress is not directly linked to salary discussions. There are examples where on the level of a country or region common standards of doctoral education are defined and monitored. Special development programmes may exist for female early stage researchers.

One prominent example for a framework is the Vitae Researcher Development Framework. It articulates the knowledge, behaviours and attributes of successful researchers and encourages them to aspire to excellence through achieving higher levels of development. The framework is a

comprehensive new approach to enhancing the careers of researchers. It was developed by and for researchers, in consultation with academic and non-academic employers.

In Western Switzerland the universities as well as the universities of applied sciences have developed their respective professional development frameworks. Moreover, the doctoral schools provide also for professional development frameworks.

At the national level in Finland, all teaching and research staff is expected to continuously develop their competencies in terms of pedagogical merits, research merits, and university community and social merits. These competence areas are further defined and formally set out in the form of a national system of biannual personal performance evaluation and annual development and assessment discussions, which include a review of progress in relation to previous years, identification of further development needs, and questions on career development.

An interesting example which crosses institutional boundaries is the GUAT, the German University Association of Advanced Graduate Training (GUAT, UniWiND in German) is a network of 32 universities that shares the common objective of advancing the quality of academic education for early stage researchers in Germany (<http://www.uniwind.org/home>).

A special female research mentoring programme from the level of doctoral candidates (R1) up to habilitation (R2) exists between Germany and Switzerland. Mentoring as a professional development tool is also used in other countries like Poland. Such mentoring programmes are likely to support one-to-one mentoring for up to 24 months and may cover training, internships, mentoring and coaching.

Q11. Any other comments?

While in some countries common standards are defined on a national/regional level others give the freedom to define it on the level of the organisation. There are strong arguments in favour of the institutional level e.g. the autonomy of universities or the principle of subsidiarity. In addition the most innovative systems may be driven by individual institutions rather than on the national level.

However, this survey report shows that many higher education institutions do not have a system for the professional development of researchers in place and hence national or even European initiatives could pave the way to a broader acceptance. A possible solution could be to have a common framework on a national level but leaving it to the individual universities to build specific programmes responding to their need. This could help smaller universities not having the resources to establish a framework on their own.

Section D: Other programmes or ways to encourage the professional development of researchers (Questions 12 and 13)

Q12. Do you know of any "other examples of descriptions of competencies or personal professional development frameworks for researchers"? These could be European or Worldwide or from other sectors.

This question was answered by 22 out of 61 respondents. Research performing organisations have shown the highest awareness as 55% (15) of them mentioned one or several possibilities which exist

in Europe or outside. Additionally, 7 other organisations of different type, such as ministries or research funding organisations, listed various available on-line tools.

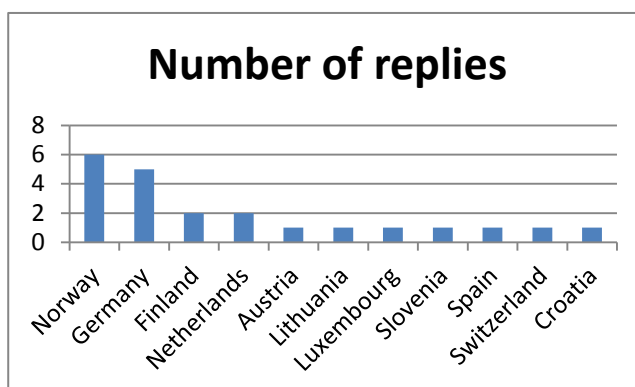
The commonly known instrument is (1) the VITAE’s Researcher Development Framework (RDF) created by the UK⁶, followed by (2) the Core Competencies Toolkit of the American National Postdoctoral Association (NPA)⁷ and (3) the Individual Development Plan (“my IDP”) produced by the American Association for the Advancement of Science’s (AAAS)⁸. Similar in scope, there is (4) the “Relève Académique” website prepared by the Universities of French-speaking Switzerland⁹. (5) The Professional Development Framework (PDF) of the Association of Research Managers and Administrators (ARMA)¹⁰, which focuses on its specific target groups, was also listed. Note that further details of these frameworks are given in Annex

The above frameworks are organised in a systematic way with a common approach of self-assessment of different skills, qualifications, behaviours or knowledge appropriate for their target groups. However, they have been created mainly for individuals with great focus on First Stage (R1) and Recognised (R2) Researchers. They underline a variety of career possibilities to be pursued not only in academia but also in the non-academic sector, such as industry, administration, government, non-profit organisations, and entrepreneurship. As all of them demand a diverse range of skills, great focus is placed on the development of transferable skills. Another important feature underlined, apart from guidance offered for individual researchers, is support needed for individuals, especially early-stage researchers, which should be provided by mentors, advisors, trainers and institutions. The dedicated websites include description of competencies, career advice articles, information on programmes, trainings, relevant events, funding opportunities, researcher’s blogs or forums, links to other useful websites as well as tips and hints from professionals.

What should be distinguished among the above listed instruments is a **website** providing a rich array of information and a **personalised toolkit** allowing to create an own, web-based career-planning account tailored to meet the individual needs. This type of a professional development framework tool is provided by two organisations: VITAE “RDF Planner” (a fee is required) and AAAS “my IDP” (free of charge). The great value of both tools is an easy-to-use application, the possibility to rate skills and knowledge and the keeping records of various activities or monitoring own progress.

Q13. Please give any examples you know of "other programmes" or ways to encourage the uptake of professional development by individual researchers that may be of interest to the Working Group.

From the total of 61 respondents of the questionnaire, only 22 provided additional information on other initiatives known to encourage the uptake of professional development by individual researchers. Most of these replies came from either German or Norwegian organisations.



Regarding the organisations involved in the initiatives mentioned, in most cases, it is the organisation responding who organizes them, either on its own or by collaborating with other national organisations (joint initiatives).

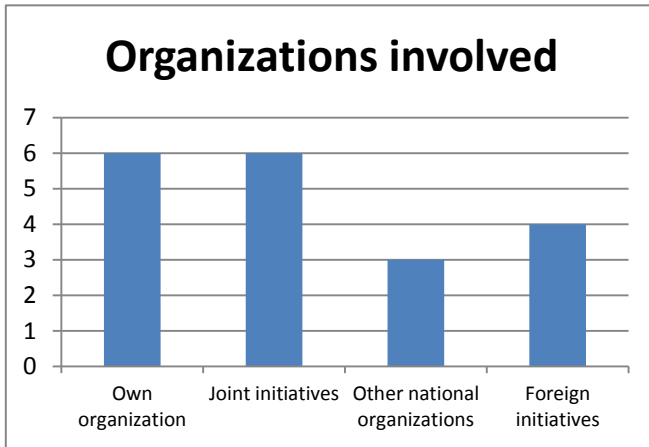
⁶ VITAE RDF: <http://www.vitae.ac.uk/rdf>

⁷ NPA: <http://www.nationalpostdoc.org/competencies>

⁸ AAAS my IDP: <http://myidp.sciencecareers.org/>

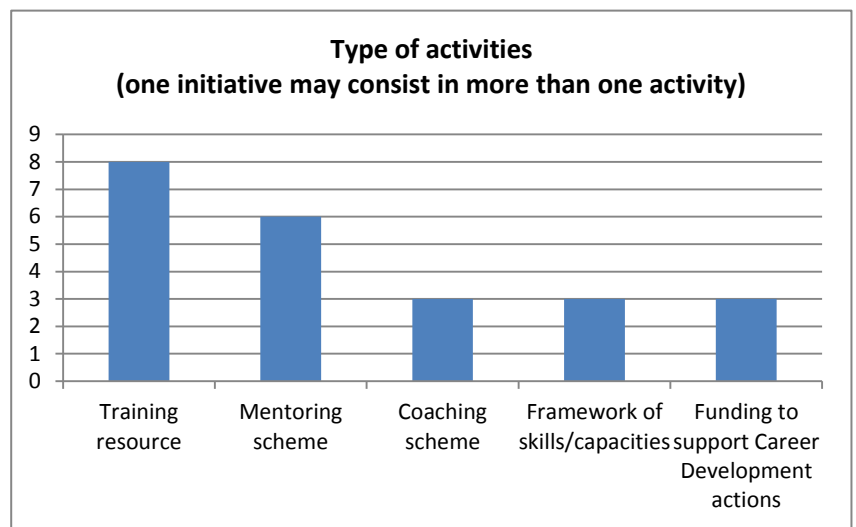
⁹ Relève académique: https://www2.unine.ch/releve/page-24637_en.html

¹⁰ ARMA PDF: <https://www.arma.ac.uk/professional-development/PDF>



From the four foreign initiatives identified, only one of the replies truly points to a known programme in another country which aims directly at supporting the professional development of researchers (reply from Fonds National de la Recherche, Luxembourg; see summary below), while the other three highlight potential international “forums” where the uptake of professional development by individual researchers could be enhanced (namely, through EURAXESS Jobs, Linked-In and the European Centre for Development of Vocational Training).

In terms of the kind of activities contemplated within the initiatives reported, the most common actions where either training resources (i.e. training courses, particularly in transferable skills) or mentoring programmes. In the case of the mentoring programmes, based on the limited number of replies received, it seems that these are particularly preferred for increasing the presence of female researchers in the system (4 of the 6 mentoring schemes mentioned, all taking place in either Germany or Norway).



Conclusions from analysis of question 13.

The detailed analysis of the replies obtained in this particular question point towards a loose understanding of what is exactly an initiative to encourage the uptake of professional development by individual researchers.

The fact that only 11 countries of a total of 22 replied to this particular question, and that of the 19 replies analysed only 7 referred to initiatives taking place outside their own organisation, suggest that there is a very limited knowledge on practices taking place in other organisations and/or countries.

A number of both training resources and mentoring schemes are being implemented in different organisations and countries. This suggests that the need to support career development of researchers is acknowledged. Nevertheless, there seems to be a lack of a structured approach to the issue in most cases. A particular exception noted was that from the Graduate School of Technische Universität München (TUM-GS) which structures its offer of resources for PhD candidates around a previously defined programme (<http://www.gs.tum.de/en/doctorate-with-the-tum-gs/>):

- INTERNATIONAL CONTEXT - exploring the worldwide availability of online professional development frameworks for researchers

The mandate for the SGHRM working group on the professional development of researchers included looking worldwide for any examples of existing (online) tools for individual researchers' career

development. This was achieved through commissioning a member of the working group to undertake a web-based search for examples of definitions of competencies of researchers and the existence of online professional development frameworks. Although this research does not claim to be exhaustive, examples were identified in Europe, North America and Australia. No examples found in Asia, South America or Africa.

The report includes a section of frameworks giving details of the ‘Vitae Researcher Development Framework (RDF)’ - UK; ‘Science Careers MyIDP’ - USA; ‘ABG Intelli’gence’ Doctoral researchers self-evaluation guide – France and; Postdoc training – Australia. It also includes section on competencies: detailing and summarising the examples of their use.

In summary, the following findings emerged from the research:

- more examples of definitions or lists of competencies of researchers were identified than professional development tools
- examples were more likely to focus on the first stage researcher (R1) than other stages of the researcher career, particularly in Europe
- North American examples were predominantly at the recognised researcher stage (R2), and most likely relating to the health profession
- Australian examples were most likely to include progression from undergraduate education
- overall, there are few comprehensive examples of professional development tools for researchers.

The full 7 page International Context report is presented at Annex 5.

5. CONCLUSIONS AND RECOMMENDATIONS

The advantages provided by a Professional Development Framework can be realised for both Research Performing Organisations and Researchers.

For RPOs the advantages could include a systematic approach to professional development skills across the institution. The more widely a framework is used by different institutions the possibilities for sharing of practice and delivery may be increased. The use of a Professional Development Framework could be an advantage in convincing funders and other stakeholders (including employers) that Professional Development is taken seriously by the organisation.

For Researchers the use of a Framework provided by the organisation could assist in identifying their strengths and prioritising areas for professional development. A framework could support a structured approach to career planning and career discussions (e.g. with their supervisor, PI, careers advisor or other professional development provider). It could also assist in preparing for progress reviews, appraisals etc. with their research manager or mentor. Ultimately it could enable the researcher to better articulate their strengths to potential employers and could aid mobility within Europe.

The Working Group agreed the following summary of the results of its survey:

The 61 responses to the questions posed have all been analysed by the WG and it is clear that this forms a good evidence base for the report. The WG observations on the responses include:

- The survey provided a helpful picture of the professional development landscape in Europe. Many Countries appear to have nothing in place.
- There is a need for PD framework of some sort, which should include employability issues. Self-reflection by researchers should feature in the tool and it should be rooted in systematic approaches within RPOs.

- There are few systematic frameworks in place but there appears to be a rising awareness of professional development issues. The Vitae RDF was the most comprehensive framework but others such as the AAAS My IDP (USA)¹¹ and ABG Intelli'gence (France)¹² exist.
- The survey responses demonstrated that there were more examples of competencies being used in job descriptions than references to frameworks. (A survey of worldwide competency approaches is included with the report.)
- More support is available for early career researchers (particularly at the R1 stage), in keeping with previous findings, but many survey respondents referred to the use of frameworks across all stages R1 to R4.

Recommendations

Following from the evidence and its observations the WG has agreed the following recommendations.

1. **A framework for the Professional Development of Researchers should be made available by the European Commission.** This should be used, albeit in different ways, by the following stakeholder groups:
 - a. The European Commission – who should encourage its take-up by MS.
 - b. By MS – who should take ownership of Researchers Professional Development Policy (this may include Funding Organisations).
 - c. By RPOs – who are responsible for the development of their researchers.
 - d. By Researchers – who share the responsibility for their professional development.
2. A clear vision for implementation and sustainable use of such a framework is needed. This should include awareness-raising by the European Commission. Sufficient guidance should be provided for Funding Organisations, RPOs and researchers to use it effectively and understand the benefits to be gained. It is not sufficient to simply make a tool available.
3. In making a tool available the Commission should aim to initiate a change of culture with respect to Professional Development for Researchers. Indicators of this change of culture should assess the extent to which RFOs, RPOs and researchers had taken ownership of the agenda. These could include the extent to which researchers had developed clear career plans and measures of the employability of researchers.
4. Guidelines for the use of a framework and any associated personal planning tools and linkage to associated training should be made available. This should describe a number of options for use ranging from simple to more comprehensive.
5. The adoption of a Professional Development Framework should be part of a well-functioning HR process and it would be expected to feature in an institutions plans for gaining and retaining the HR Excellence in Research Award.
6. The report of this working group is intended to be read by all stakeholders and it should be placed visibly in the rights section of the EURAXESS web pages. The WG recommended that the EC should also consider better accessibility to other reports currently on those same pages.

¹¹ My IDP <http://myidp.sciencecareers.org/>

¹² ABG L'intelli'gence <http://www.intelligence.fr/default.aspx>

Acknowledgement

On behalf of the European Commission and the SGHRM, the Chair wishes to thank all of the Working Group members for their commitment to this work and particular for their help in agreeing the recommendations and drafting the report. The Working Group is extremely grateful to the respondents who have to respond to the short survey. Although the detail of these responses is not being published it was invaluable to the analysis carried out by members of the working group.

Annexes to this draft:

1. Mandate of the ERA-SGHRM WG on Professional Development of Researchers
2. WG Membership
3. Questions posed to Stakeholders (Ministries, Research Funding and Research Performing Organisations)
4. Details of Professional Development Frameworks identified in the survey
5. International context: exploring the worldwide availability of online professional development frameworks for researchers

MANDATE of the ERA-SGHRM WG on Professional Development of Researchers

Outcome: A map of existing (online) tools for individual researchers' career development guidance with examples in Europe and worldwide.

Operational Objective: A short report (10 pages and annexes) of existing practical examples of (online) tools for individual researchers' career development guidance. These examples may come from Europe and beyond and may cover a variety of disciplines. The report could usefully address the practical interface between such tools and the training and development support available from Research Organisations and Research Performing Organisations. The report should contain enough detailed information to support the exchange of information and facilitate exchange of best practices. It should also help the Commission to further develop/promote (online) tools accessible to all researchers across a range of disciplines and professions, wishing to map and develop their competences to move forward in their career.

Working method: The report will require some desk work and interviews by the members of the Working Group in order to document examples of online tools for researchers' professional development in their country and elsewhere, should they be aware of such initiatives. The examples presented by the members will be analysed and as far as possible critically appraised by group members. The work will build on the conclusions of the work previously done by the 2011-2012 SGHRM Working Group on professional development of researchers¹³ and should take account of the ESF report and recommendations on a pan-European Professional Development Framework for Researchers¹⁴. The Working Group will meet in 2013 and in 2014.

The Steering Group could adopt the report of the Working group in its autumn 2014 meeting. Results could be usefully presented at the Lithuanian Presidency conference on young researchers in Vilnius on 14/15 November 2013.

Members and stakeholders profile: SGHRM members of countries with a particular interest or experience, including those with existing professional development frameworks for researchers. The Working Group would also be opened to other DGs, such as DG Education and Culture and DG EMPL, as well as university associations (e.g. EUA, LERU, Coimbra Group, CESAER, EARTO, NordForsk), EURODOC, Science Europe, ESF and OECD (RHIR). The Working Group may include experts from public and private organisations with particular experience in developing researchers' professional development guidance (e.g. Vitae UK or the US National Organization of Research Development Professionals) and RPOs with known expertise such as Aarhus and Groningen Universities) and Lausanne (tenure track).

¹³ Professional development of researchers, SGHRM working group, May 2012.

http://ec.europa.eu/euraxess/pdf/research_policies/Professional_Development_of_Researchers_Provisions_forthe_Fut.pdf

¹⁴ A pan-European Professional Development Framework for Researchers (ESF August 2012)
<http://www.esf.org/coordinating-research/mo-fora/european-alliance-on-research-careers-development.html>

Background

The overall context for this working group is the target of one extra million researcher jobs set within the Innovation Union policy to enhance the research intensity of our economies. Many researchers already use the expertise and competencies and methodologies they have developed through their academic research to carry out research tasks in a non-academic environment or make good use of their research skills in a non-research position. Career development can further enhance the employability of researchers thus helping to achieve this goal.

International studies show that in many countries more than 50% of PhD graduates find employment in the private and public sector, sometimes unrelated to their research topic. A fundamental question arises as to the appropriateness of the professional development support that they have received given the wide range of employment opportunities.

In 2012, the Steering Group adopted a report with recommendations on professional development of researchers in Europe in. It noted that researchers are professionals with multiple career options and that a good professional development provision should equip them to make an innovative and effective transition to a wide range of careers. Both this and the ESF report emphasise the role of organisations in developing the skills of their researchers including the researcher's core expertise to analyse and solve complex problems which comes from the research experience itself.

Professional development provision for researchers has been underlined in recent EU policy documents, notably the Communication "*Investing in skills for better socio-economic outcomes*"¹⁵ and the Communication "*A Reinforced European Research Area Partnership for Excellence and Growth*".¹⁶

The European Research Stakeholders Organisations, EUA, LERU, EARTO, NordForsk and Science Europe have committed themselves to take action in the field of career development and have confirmed these commitments in the *Memoranda of Understanding on ERA*, or unilateral *Statement of Intent*, which they have signed with the Commission on 17 July 2012.¹⁷

The conclusions from the previous Working Group¹⁸ state that professional development provision varies significantly in quantity and nature across the different research career categories. There is a very high level of activity in providing skills training for researchers at doctoral level (R1), while there is a sharp decrease in skills training beyond R1. From Recognised Researcher (R2) through Established Researcher (R3) to Leading Researcher (R4), training is dominated by academic career skills only. Training and development in independence, knowledge exchange and innovation is poor, even at doctoral level.

¹⁵ COM(2012) 669 final of 20.11.2012 http://ec.europa.eu/education/news/rethinking/com669_en.pdf

¹⁶ COM(2012) 392 final of 17 July 2012

http://ec.europa.eu/research/era/consultation/era_communication_en.htm

¹⁷ Science Europe signed a unilateral statement on that occasion

http://ec.europa.eu/research/era/consultation/era_communication_en.htm

¹⁸ 2011-2012 SGHRM Working Group on professional development of researchers

Professional development for researchers was, until recently, focussed primarily on the academic career path. However, the nature and working conditions in Europe and the multiple career options for researchers today make guidance on their career and professional development an essential tool of their wider personal and professional development.

We will look at institutional examples around Europe that merits specific attention. One interesting example in this case can be Vitae in the UK.

Chair:

Iain Cameron - Research Councils UK

Members:

Ana Mafalda Dourada – FCT Portugal

Anna Wisniewska – KPK Poland

Anjana Buckow – DFG Germany

Dorian Carder – European Commission

Adeline Kroll – European Commission

Peter Van Der Hijden - European Commission

Eeva Sievi – University of Helsinki Finland

Eric Foucher – CLORA France

Fulvio Esposito – University of Camerino Italy

Ignac Lovrek - FER Croatia

Isser Peer – Bar Ilan University Israel

Janet Metcalfe – Vitae UK

Jeppe Dørup Olesen – Aarhus University Denmark

Josiane Entringer – Ministry of Science and Research Luxembourg

Olivier Kuttel – EPFL Switzerland

Patrizia Jankovic - Bundesministerium für Wissenschaft, Forschung und Wirtschaft Austria

Ritsert Jansen – RUG Netherlands

Ragnar Lie - UHR Norway

Tiina Lloit – ETAG Estonia

Katrien Maes - LERU EU

Lidia Borrell-Damian - EUA EU

Thomas Jorgensen - EUA EU

Slobodan Radicev – EURODOC EU

Sébastien Huber - Science Europe EU

Xavier Eekhout – FECYT Spain

ERA-SGHRM Working Group on the Professional Development of Researchers

Questions for Ministries, Research Funding Organisations and Research Performing Organisations

The ERA-SGHRM Working Group recognises that to be competitive in today's global labour market and maximise their chance to find rewarding employment and successful career perspectives, researchers must be able to fulfil a range of new roles.

This short questionnaire is designed to capture information on the extent researchers working in European institutions:

- are aware of the competencies needed to be an effective researcher;
- have structured Professional Development Frameworks made available to them; and
- are equipped to review and evaluate their competencies and career development.

The first page describes the background to the project.

On the second page you are asked to provide some basic information about yourself and your organisation (Section A). There are then only three main questions (Sections B to D). Each section is short and is structured to be answered as easily as possible. The 'More Info' buttons provides useful definitions.

It would be most helpful if you could respond by **Monday 6th January 2014**.

Project background

To be competitive on today's global labour market and maximise their chance to find rewarding employments and successful career perspectives, **researchers must be able to fulfil a range of new roles**.

According to the Communication from the Commission to the Council and the European Parliament of 23 May 2008 "Better careers and more mobility: a European partnership for researchers" [1], traditional university education does not prepare researchers for the contemporary knowledge economy, where connections between 'the world outside the academia' and public research institutions are essential for a smart, sustainable and inclusive societal development. It is therefore important that Member States prepare **national skills agendas** to enable researchers, as all other professionals, to acquire new skills throughout their career [2].

The ERA Steering Group on Human Resources and Mobility, via its Working Group on Researchers' Professional Development, is considering the opportunity and need for adopting a common Researchers' Development Framework (RDF), focusing on individual researchers, as a further building block of the European Research Area. In doing this the Working Group wishes to take into consideration that different organisations and indeed countries are at different stages of progress with relation to researchers' professional development.

Definitions

- **Researcher:** "Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned." Four profiles are recognised by the European Framework for Research Careers [3]

R1 First Stage Researcher (up to the point of PhD)

R2 Recognised Researcher (PhD holders or equivalent who are not yet fully independent)

R3 Established Researcher (researchers who have developed a level of independence.)

R4 Leading Researcher (researchers leading their research area or field)

- **Competencies:** the knowledge, skills and attributes to be an effective researcher
- **Professional Development Framework:** A tool for researchers to reflect on their competencies, identify their strengths and prioritise their professional development
- **Researchers' Professional Development:** *"Researchers' professional development is a structured approach to the continuous development of researchers' knowledge, expertise and attributes at all stages of their career to improve their competency, employability and ability to pursue multiple career paths. This may be achieved by a variety of activities, whether formal and structured, or informal and self-directed."* [4]

[1] European Commission (2008) [Better careers and more mobility: a European partnership for researchers](#)

[2] OECD (2012), [Better Skills, Better Jobs, Better Lives: A Strategic Approach to Skills Policies](#)

[3] European Commission (2011), [Towards a European Framework for Research Careers](#)

[4] ESF (2012) [Developing Research Careers in and Beyond Europe](#) – A Report by the ESF Member Organisation Forum 'European Alliance on Research Career Development

Questions

This word document is provided for convenience although the preferred response route is through the online survey at www.survey.crac.org.uk/sghrm. The online version allows you to print your submitted responses using 'Print' from the File menu in your Web browser. If you would like to keep a copy of your responses you can save them to your local machine using 'Save' from the File menu. They can then be opened again by choosing 'File' and then 'Open' from your browser.

For questions relating to this survey or the use of BOS at CRAC, **please contact:** Janet Metcalfe (janet.metcalfe@vitae.ac.uk)

Submission:

Response reference:

1. A. About you and your organisation

1. Surname

2. First name

3. Title

4. Role

5. Organisation name

6. Type of organisation

Ministry

Research Performing Organisation

Research Funding Organisation

7. Contact email

2. B. Researchers competencies

8. Are there "defined competencies" that you expect researchers to develop and that are set out formally in your country/organisation?

Yes

No

Don't know

8.a. At what level are the competencies applicable?
--

Discipline specific

Professional body/learned society

Organisation

Regional

National

International

8.b. Who is the target audience?

R1 First Stage Researcher

R2 Recognised Researcher

R3 Established Researcher

R4 Leading Researcher

8.c. Please provide a brief description, including their relevance to different levels of experience (R1 - R4) and discipline or academic area.
--

8.d. Please provide a url/web link, if possible.

9. Any other comments?

3. C. Personal professional development frameworks for researchers

10. Do you have any "personal professional development frameworks for researchers" in your organisation/country, for example so they can assess their competencies, record their progress, identify their development needs, or consider their career development?

Yes

No

Don't know
10.a. Who is the target audience?
R1 First Stage Researcher
R2 Recognised Researcher
R3 Established Researcher
R4 Leading Researcher
10.b. At what level is the professional development framework available?
Discipline specific
Professional body/learned society
Organisation
Regional
National
International
10.c. Please provide a brief description of its purpose and features/functionality, including their relevance to different levels of experience (R1 - R4), discipline or academic area.
10.d. Please provide a url/web link, if possible.

11. Any other comments?

4. D. Other programmes or ways to encourage the professional development of researchers

12. Do you know of any "other examples of descriptions of competencies or personal professional development frameworks for researchers"? These could be European or Worldwide or from other sectors.
Yes
No
12.a. Please provide a brief description, target audience and scope, including relevance to specific disciplines or academic areas.
12.b. Please provide a url/web link, if possible

13. Please give any examples you know of "other programmes" or ways to encourage the uptake of professional development by individual researchers that may be of interest to the Working Group.
13.a. Please provide url/web link, if possible

1. VITAE's Researcher Development Framework (RDF) resulted from wide consultations carried out among researchers, academic and non-academic sectors. It's structured in **four main domains**, and for each domain additional three sub-domains are defined: **A.** Knowledge and intellectual abilities, **B.** Personal effectiveness, **C.** Research governance and organisation, **D.** Engagement, influence and impact. This structure identifies the sixty-three characteristics of excellent researchers described in a comprehensive manner. Such a structure encourages and helps users to identify their capabilities and expertise, to plan their future steps and monitor the progress of their professional development. The RDF can be used not only by individual researchers, which are the main target group, but also by various types of their supporters, including employers from different sectors or policy makers. The website is a very reach source of various information, data, publications, training, etc. helping to deepen the knowledge of different aspects of career development.

2. NPA, the National Postdoctoral Association addressed its framework to postdoctoral researchers, graduate and PhD students but also to administrators within faculties who support development of researchers. The following **six Core Competencies** have been defined, helping both in constructive self-evaluation and self-improvement of skills as well as in developing trainings and mentoring relevant to postdocs in achieving professional independence: **1.** Discipline-specific conceptual knowledge, **2.** Research skill development, **3.** Communication skills, **4.** Professionalism, **5.** Leadership and management skills, **6.** Responsible conduct of research. The website contains description and resources for each competence and it is expanded by the below "myIDP" tool which helps in proactive creation of the Individual Development Plan (IDP).

3. "myIDP" Science Careers allows individuals, in a **four-step process**, to set up strategic goals for a defined period of time and to develop a step-by-step plan for achieving them. The preparation of a customised IDP starts with (1) evaluation of **skills, values and interests** (score 1-5), based on the NPA's Six Core Competencies which are then (2) self-evaluated in the second step. Here, a list of 60 various research career paths within 20 categories (commonly followed by PhD-level scientists, including for instance "Sales and marketing of science-related products") helps in identifying a suitable or preferred career type according to the defined skills, values and interest. For better understanding of each of them, there is an extensive list of articles, books, and professional organisations. (3) Step three aims at setting specific goals to prepare for the identified path which (4) are implemented within the last step, where the great emphasis is put on appropriate mentoring. Set on request, monthly automated reminders help to catch up with the goals, keep deadlines and check the progress.

4. Relève Académique is addressed mainly to graduate and doctoral students and provides advice, guidelines and resources helpful for an academic career or other career paths. The PhD students are led through different steps of preparing doctoral thesis, including a subject to be chosen, financial resources, organisational aspects as well as skills needed to be developed and activities which should be undertaken for a successful performance. Here is also advice on how to behave in different academic and non-academic environments after obtaining the degree. The website includes a wide and comprehensive set of information guiding first-stage and recognised researchers (R1, R2) through various aspects of personal development.

5. The UK ARMA's Professional Development Framework covers **21 areas under seven themes**, each viewed from an **Operational, Management and Leadership** perspective by research managers and administrators. The themes are: (1) Developing Proposals, (2) Project Lifetime, (3) Translation, (4) Postgraduate Researchers, (5) Policy and Governance, (6) Management Information and Related Functions, (7) Service Organisation and Delivery. The PDF built on the VITAE experience helps

individuals to reflect on their development needs and plan their future career as well as helps institutions to create the appropriate development opportunities for their staff. The PDF describes knowledge, skills, tasks and activities required by different management roles.

Apart from the above comprehensive websites and tools available to researchers on-line, other examples were also given. However, they are focused on different aspects of personal development, such as preparation of professional CV¹⁹, mentoring programme for female researchers²⁰ or focus on a specific research area²¹. Some of them are available in a native language of the organisation which provides this type of guidelines (French²², German²³) or as a document in the pdf format²⁴.

¹⁹ <http://www.tenk.fi/en/template-researchers-curriculum-vitae>

²⁰ <http://www.uni-greifswald.de/foerdern/greifswalder-mentoring/greifswalder-mentoring.html>

²¹ <https://www.eam.uni-erlangen.de/graduate-school/membership/gs-amp-requirements/>

²² <http://www.intelligence.fr/>

²³ <http://uniwind.org/arbeitsgruppen>

²⁴ http://www.hallinto oulu.fi/yhallint/henkil_st_palvelut/www/private/Tenure%20track%20ja%20tutkijanura.pdf

International context: exploring the worldwide availability of online professional development frameworks for researchers

The mandate for the SGHRM working group on the professional development of researchers included looking worldwide for any examples of existing (online) tools for individual researchers' career development. This was achieved through commissioning a member of the working group to undertake a web-based search for examples of definitions of competencies of researchers and the existence of online professional development frameworks. Although this research does not claim to be exhaustive, examples were identified in Europe, North America and Australia. No examples found in Asia, South America or Africa.

In summary, the following findings emerged from the research:

- more examples of definitions or lists of competencies of researchers were identified than professional development tools
- examples were more likely to focus on the first stage researcher (R1) than other stages of the researcher career, particularly in Europe
- North American examples were predominantly at the recognised researcher stage (R2), and most likely relating to the health profession
- Australian examples were most likely to include progression from undergraduate education
- overall, there are few comprehensive examples of professional development tools for researchers.

Approach

To complement the survey of European provision, the web search focused on examples from the rest of the world, aiming to identify comprehensive examples with broad applicability that were publically accessible. It may be that other examples exist that are password protected or hosted on organisation's intranets. The research did not extend into job descriptions for researcher occupations or professional development review/appraisal processes. Both of which were mentioned in some of the European survey responses as proxies for professional development frameworks.

The search was undertaken in December 2013 and examples were categorised as either definitions of the researchers' competencies or as examples of online professional development tools for researchers. They were further identified by their target audience (R1 – R4), their reach (international, national, organisational, subject-specific) and, in the case of the professional development tools, their functionality.

Researcher competencies

Examples of researcher competencies were generally more numerous than professional development tools, Table 1 summarises whether the examples found were applicable at national/international level or at organisational level. It distinguishes between generic competencies covering all disciplines and discipline-specific examples. Finally, it identifies which stages of the researcher career are covered.

The **Vitae Researcher Development Framework (RDF)** is the most comprehensive example of researcher competencies, covering all stages of the researcher's career (R1 – R4) and all disciplines. It describes the knowledge, behaviours and attributes of successful researchers in higher education and was developed in the UK through interviews and focus groups with over 100 researchers and additional advice from specialists and stakeholders. It covers 63 descriptors within four domains: Knowledge and intellectual attributes, Personal

Frameworks

effectiveness, Research governance and organisation, and Engagement, impact and influence.

The RDF has been adopted in the majority of UK universities and is referenced in the UK Quality code for research degrees and research funders training requirements. The Vitae RDF has been used in over 20 European countries, the US, Australia, Africa and Japan. The European Science Foundation (ESF) funded focus groups in 2012 with researchers in six European countries (Estonia, France, Germany, Italy, Luxembourg, and Norway) to explore the relevance, usefulness and potential applicability of a pan-European professional development framework for researchers. www.vitae.ac.uk/rdf

The Canadian Tri-agency incorporating the three major funding agencies ‘**Statement of principles on key professional skills for researchers**’ is another national description of researchers’ competencies covering R1 – R3. This was developed in 2007 through open discussion and wide consultation with various stakeholders with the primary aim of encouraging Canadian research institutions to reflect on their provision of professional development training for researchers. The statement covers nine categories of researcher competencies, identifies behaviours and examples of how these competencies can be developed through training programmes. It is not clear if this statement has been generally adopted in Canadian institutions. www.uoguelph.ca/tss/id/currdev/Tri-university%20graduate%20attributes.pdf

Other national or international examples of generic researcher competencies covered just one level of the researcher career framework, principally R1 or R2. Some examples of note are:

Doctoral level (R1)

- The OECD set of competencies that form an optional module within the Careers of Doctoral Holders (CDH) survey. These 17 competencies were developed from a CDH pilot study in Belgium and the employability lens of the Vitae RDF with the aim of measuring doctoral graduates’ perceptions of their level of generic competencies at the time they completed your doctorate and those most useful in their current employment. www.oecd.org/innovation/inno/oecdunescoinstituteforstatisticseurostatcareersofdoctorat eholderscdhproject.htm
- The Adoc Talent Management Competencies Reference Framework was developed from first principles through a survey of doctorate holders, doctoral candidates and employers in France to identify the competencies developed through doctoral training, the needs of employers in different sectors. The framework covers six categories. www.competences-docteurs.fr
- ABG-Intelli'agence have a list of doctoral competencies covering eight categories within their self-assessment tool, which is to support doctoral graduates in France to be employed by businesses. www.intelligence.fr/Page/Cms/ViewSection.aspx?SectionId=234
- The Irish Universities Association PhD Graduates’ Skills published in 2008 describes the generic desired learning outcomes and skills that doctoral researchers may develop during their studies. www.4thlevelireland.ie/publications/Graduate_Skills_Statement.pdf
- A Group of Eight discussion paper published in 2013 presented suggested list of the generic outcomes and attributes of doctoral graduates covering six categories. www.go8.edu.au/_documents/go8-policy-analysis/2013/the-changing-phd_final.pdf
- The Academy of Finland published a report in 2011 on developing the graduate school system and organising doctoral training. Appendix 2 contains examples of generic transferable skills to be developed as part of doctoral training. www.aka.fi/Tiedostot/Tutkijanura/Towards%20Quality%20Transparency%20and%20Predictability%20in%20Doctral%20Training.pdf

Frameworks

- UNIWIND, the consortium of 35 German universities is currently undertaking a project to develop a practical framework of the competencies that can be developed at various stages in the doctoral degree and what structures and interventions would be beneficial on researchers' professional development. <http://uniwind.org/ag-kompetenzprofile>

Postdoctoral level (R2)

- The National Postdoctoral Association (NPA) in the US has created a list of the core competencies for postdoctoral scholars covering six categories, with guidance on potential resources. www.nationalpostdoc.org/competencies

Examples of generic and subject-specific competences can also be found at institutional level, predominately for doctoral researchers.

Table 1: Examples of researcher competencies

	National/international	Institution/organisation
Generic	<p>R1 – R4 Vitae Researcher Development Framework (UK)</p> <p>R1 - R3 Tri-agency (Canada)</p> <p>R1 OECD Career of Doctoral Holders survey (global) Association Bernard Gregory (France) Adoc (France) UNIWIND (Germany) Irish Universities Association (Ireland) Group of Eight (Australia) Academy of Finland (Finland)</p> <p>R2 National Postdoctoral Association (US)</p>	<p>R1 University of Auckland (NZ) Universities of Sydney, Victoria, etc (Australia) University of North Carolina (US) Michigan State University (US) University of Alberta (Canada)</p> <p>European examples University of Leuven (Belgium) TU Delft (Netherlands) Wageningen University (in progress, Netherlands) Universities of Warwick, UCL, York, etc (UK)</p>
Subject specific	<p>Undergraduate, R1 – R4 Government Social Research competency framework (UK, social science)</p> <p>R1 – R4 Europe (psychotherapy, in progress)</p> <p>R2 – R3 Estonia (teaching) ARMA (UK, research management)</p> <p>R2 National Institute of Health (US, health) American Society of Experimental Biology (US, biology)</p> <p>Undergraduate – R1 European Commission Tuning project (Europe)</p>	<p>R1 Universities of Lausanne/Zurich (Switzerland, occupational health) Purdue University (US, engineering) University of Calgary (Canada, health sciences)</p>

Professional development Frameworks

Although there were few examples of well-established and comprehensive online professional development frameworks for researchers, there were several with national or international application worthy of further investigation. As the term 'professional

Frameworks

development framework can be used to describe a wide variety purposes, these examples were reviewed for their application and functionality. This included a mapping of the key features, such as whether the framework included the facility for individual researchers to:

- Reflect on their career motivations and values
- Assess their competencies
- Identify their career objectives
- Identify potential career opportunities
- Create a career development plan
- Access to development resources
- Reflect and review their progress in their career development plan
- Build their CV.

The professional development frameworks identified that are of interest are described briefly below. Each provides a different profile of functionality, which are mapped against the above list.

Vitae Researcher Development Framework Planner

The UK Vitae RDF Planner is based on the Vitae Researcher Development Framework. It is an online professional development tool, which is designed for researchers working in higher education or research institute at all stages of their career (R1 – R4). It also has a ‘lens’ for users just getting started in research. Access for users is through organisational or individual subscription. Organisational subscription enables institutions to directly link their professional development resources and training courses for researchers.

The process allows researchers to self-assess their competencies against the 63 descriptors, against behaviour statements. Users can add supporting evidence, set developmental objectives, how and when they plan to achieve these. This creates a downloadable career development plan. Vitae resources, providing advice on how researchers can develop their competencies and what would be useful evidence, are linked to all the descriptors. The tool includes a series of ‘lenses’ focusing on different aspects of researcher activities, including leadership, innovation and improving employability outside of higher education.

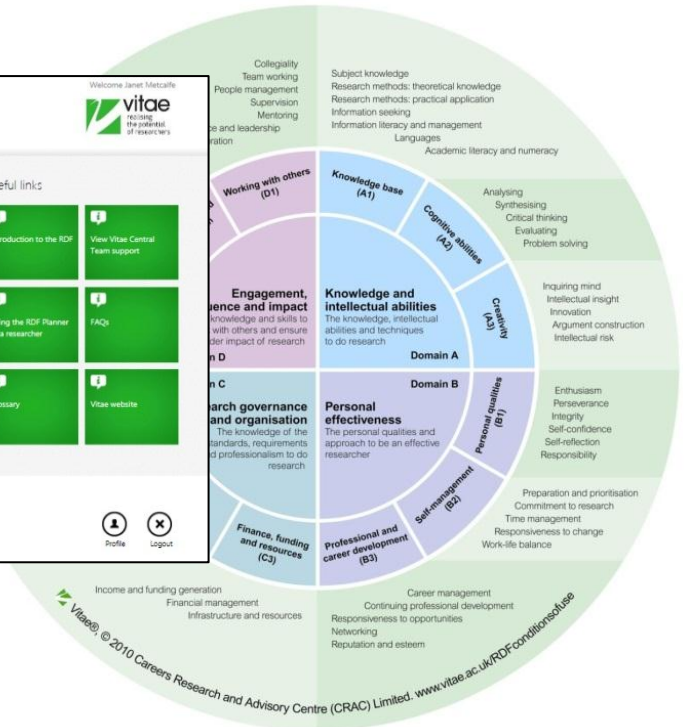
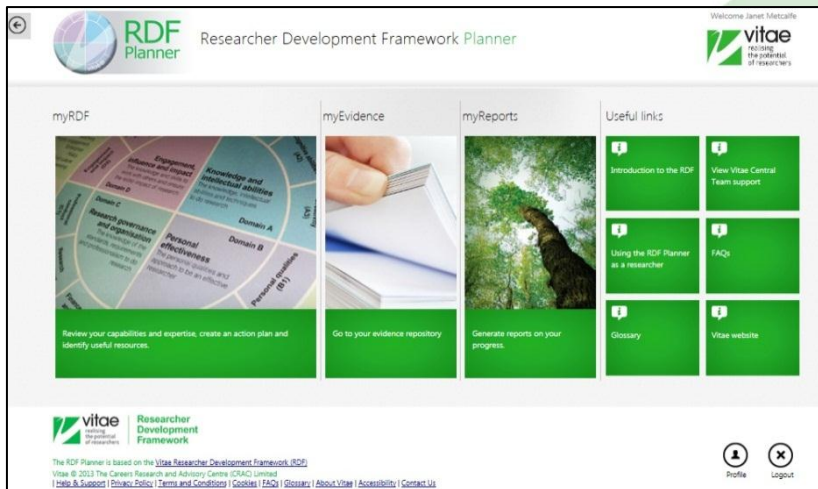
www.rdfplanner.net

Key features

- x Reflect on their career motivations and values
- ✓ Assess their competencies – (63 competencies, 3-5 stages of development)
- x Identify their career objectives
- x Identify potential career opportunities
- ✓ Create a career development plan (action planning and recording evidence)
- ✓ Access to development resources (Vitae resources and courses, institutional provision)
- ✓ Reflect and review their progress in their career development plan
- ✓ Build their CV (evidence repository)

Frameworks

Vitae Researcher Development Planner



Science Careers My IDP

My IDP (Individual Development Plan) has been developed by Science Careers based on the Federation of American Societies for Experimental Biology (FASEB) IDP framework for postdoctoral fellows. It is a web-based career-planning tool targeted at science-based doctoral researchers (R1) and postdoctoral researchers (R2).

It is a useful straightforward process that follows four steps: assessment, career exploration, setting goals and implementation plan. The assessment covers 'scientific skills assessment' based on the NPA core competencies, feature of the ideal job and values. This generates career suggestions based on a match of the assessment results and skills required for particular scientific careers. Users then create a plan A and plan B, and set careers and skills development goals within a twelve month planner.

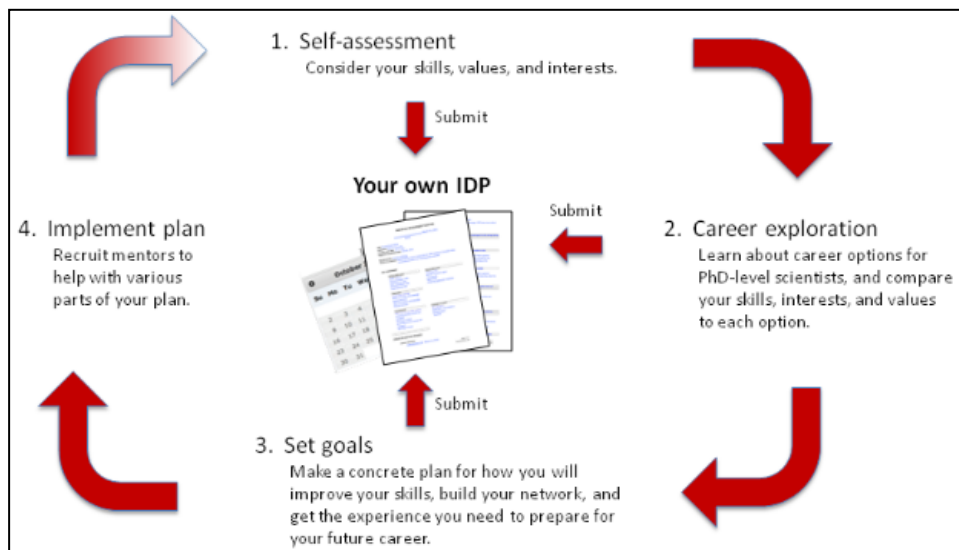
<http://myidp.sciencecareers.org/>

Key features

- ✓ Reflect on their career motivations and values (importance scale)
- ✓ Assess their competencies (based on NPA competencies)
- ✓ Identify their career objectives (assessment of interest)
- ✓ Identify potential career opportunities (20 scientific career paths)
- ✓ Create a career development plan
- x Access to development resources (some recommendations)
- ✓ Reflect and review their progress in their career development plan
- x Build their CV

Frameworks

Science Careers My IDP



ABG-Intelli'agence Doctoral researchers; self-evaluation guide: professional competencies

Previously known as the Association Bernard Gregory, it is a French organisation that facilitates the recruitment of doctoral graduates into businesses in France. It provides support resources for potential applicants, including a downloadable professional development tool (in French) based in Excel. It is targeted at doctoral researchers (R1) and encourages them to use the tool at three points in the doctorate (first six months, year two and six-nine months before submission).

The tool is fairly basic consisting of a series of questions covering different topics, based on the Royal Society of Chemistry's 'Skills record for graduate students'. It starts with assessment of their knowledge of the research environment, then a self-assessment of an extensive list of competences on a 1-4 scale. Users can add evidence, set developmental objectives and how they plan to achieve these. It can be customised to add subject-specific skills.

www.intelliagence.fr/Page/Cms/ViewSection.aspx?SectionId=234

Key features

- x Reflect on their career motivations and values
- ✓ Assess their competencies (at three stages of the doctorate)
- x Identify their career objectives
- x Identify potential career opportunities
- ✓ Create a career development plan
- ✓ Access to development resources (ABG 'Doctoriales' courses)
- ✓ Reflect and review their progress in their career development plan
- ✓ Build their CV (advice on composing a CV)

Frameworks

Example of the questionnaire**A - Information sur votre travail de recherche**

Répondez par Oui (O) , Non (N) ou Non Pertinent (NP) .	Etape 1	Etape 2	Etape 3
Comprenez-vous :			
1) Les objectifs de votre travail de recherche			
2) Comment votre projet s'insère dans un programme plus vaste			
3) Les enjeux de votre travail par rapport aux thématiques des autres chercheurs (de votre équipe ou de la discipline)			
4) Les aspects éthiques de votre recherche			
5) Les modalités et critères d'évaluation de votre unité de recherche			
6) Les techniques nécessaires à votre recherche			
7) Les méthodes nécessaires à votre recherche			

PostdocTraining program

Postdoc training has been developed by a former research fellow and trainer in Australia. It is a web-based step-by-step training programme for postdoctoral researchers, which is a combination of becoming more productive as a researcher and career development delivered through a series of 15 eclasses (modules) over a seven month period at an individual cost of ~ €450, which also includes three mentoring calls.

There are four career related development modules including: 'your motivated science skills', 'your career anchors', 'creating your career plan' and 'your career options'. Key strengths are assessed against a list of 50 'transferable skills', however, it is not possible to access these without subscribing to the programme.

Key features

- ✓ Reflect on their career motivations and values (five values)
- ✓ Assess their competencies (50 competencies)
- ✓ Identify their career objectives (8 career preferences)
- ✓ Identify potential career opportunities (40 scientific career paths)
- ✓ Create a career development plan
- ✓ Access to or recommendations of development resources (e-learning modules)
- ✓ Reflect and review their progress in their career development plan (3 mentoring calls)
- ? Build their CV

