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1. INTRODUCTION

1.1 Context
The overall context for this report is the target of an extra one million researcher jobs set within the Innovation Union policy to enhance the research intensity of our economies. For this extra million researchers there must be maximum opportunities for career development. Many will be using the expertise and competencies they have developed through 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.

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

There is no doubt that significant progress has been made in Europe as part of the development of the European Research Area (ERA). Concrete examples include the European Researchers Charter and Code and growth of structured doctoral education that has rapidly diffused across Europe. In this respect the US lags far behind Europe in career development for researchers. A report published in April 2012\(^1\) by the US Council for Graduate Schools in collaboration with major companies has made the clear recommendation that there must be clearer pathways for PhD graduates into employment. It is interesting to see that at this juncture the US is only acknowledging this challenge where Europe is setting its sights on achieving the ERA by 2014.

The objective of this report is to inform the Steering Group on the full range of issues relating to professional development provision for researchers. The intent is to look to the future and identify the support researchers need to enhance their research expertise and make informed career choices. Based on the work of the Group some general conclusions are drawn along with recommendations.

1.2 Group Composition
Members include Steering Group delegates and experts specialised in skills development designated by MS or Commission. Participants also included the EUA (Council for Doctoral Education), EURODOC, DG Education and Culture and DG Employment. The WG would stay in close contact with related activities by EURAXESS.

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\(^1\)“Pathways through Graduate School and into Careers”, US Commission on Pathways through Graduate School and into Careers (www.pathwaysreport.org), 2012
1.3 Timeframe for Delivery
The WG held three meetings of the full group (2/2/12, 27/3/12, 25/4/23) and a Chairs meeting to finalise the report on 11/5/12. Deadline for the pre-final report is 24/04/2012, to be adopted by the Steering Group on 23/5/12.

1.4 Mandate
The Working Group was given the following mandate by the Steering Group:

"Rationale and Timing: According to IU Commitment #1, by the end of 2011, MS "should have strategies in place to "train enough researchers to meet their national R&D targets". Data on these strategies are currently being collected through the questionnaire developed by the contractor Deloitte and circulated to the SGHRM delegates. Following the deadline for responses of 31 October 2011, the contractor will process the data on responses including those on training strategies. This working group would use these strategies as a starting point for an analysis to verify whether they cover the training needs of researchers with their various profiles.

Concrete Deliverable(s):
1) An assessment of the aggregated effect of the MS/AC training strategies for researchers and the identification of training gaps where applicable (short report, including recommendations, of maximum 5 pages + annexes if necessary)

Focus/Goal is to assess the aggregated effect of the MS/AC training strategies for researchers in academia and industry with the ultimate goal of identifying gaps (with respect to training needs) and developing agreed-upon recommendations.

Operational Objective is to:
- Conduct an analysis of the submitted MS (and AC) training strategies - Identify training gaps and issue recommendations."

Considerations of the WG on the mandate:

Objective: How are we making researchers more employable?

Limitations: The report will not discuss sectoral supply and demand issues at this stage, but may provide pointers for follow-up work in that direction.

Aims:
- Assist researchers in their career' changes.
- Provide recommendations through the exposition of national models of provisions for researchers' skills and an analysis of the quality and pertinence of these provisions.
- Provide a basis of information of the evolution (success) of changes in researchers' careers towards the completion of ERA (from 2000 to 2014).
2. SOURCES OF INFORMATION / DATA

There has been extensive work done in this area by a variety of organisations however it was not within the scope of the Working Group to carry out extensive in depth analysis. The group is cognisant of the OECD project underway that will be published soon\(^2\). Rather it relied on the expertise of the members to bring out the key points and outcomes of previous studies.

One possible source of data identified was the responses to the Deloitte Questionnaire made by the SGHRM members. Upon examination of the responses it was found that, while some information was useful, there was not a sufficient level of detail provided to be of use to this task. Moreover the summary information that would have been useful to the Working Group was not available within the timeframe of the Group’s activity.

It was recognised by the Working Group that a full mapping of skills training would not feasible in the allotted time nor would it be particularly informative. The purpose of this exercise was to give an overview of activities in countries focusing on the “big picture”. Group members took it upon themselves to provide data from their own countries along with some more general perspectives from the EUA and EURODOC. These and the full set of country data are given in the appendices (Austria, Finland, Germany, Ireland, Norway, Portugal, Slovenia and the UK).

The data was collected from the Working Group only as it was decided that the wider Steering Group was already involved intensively in completing the Deloitte Questionnaire. *At this point the Working Group would welcome any further country studies from the Steering Group in order to produce a more comprehensive study.*

It is important to keep in mind that this report has limitations and as a consequence, no conclusions could be made on a number of issues. There was no data gathered on quality or relevance of training offered. This of course relates to cost as many universities offer courses “free” of charge whereas those given by private providers can be very expensive. The reality is that professional development provision does have significant costs attached when one takes into account the time spent by experts in developing and delivering these courses.

There was no investigation of sectoral demand and supply, nor of the types of researchers in general that may be required (e.g. number of engineers). This study is not about the pipeline itself but the outcome. It concerns generic researcher development, not discipline specific.

The study did not look at provision within the private sector.

\(^2\) *Transferable Skills Training for Researchers: Supporting Career Development and Research, OECD 2012 in press*
3. METHODOLOGY

3.1 Classification of Professional Development Provision
A challenge in gathering the data on professional development was how to present the results in a manner that would be informative. In order to analyse the skills offered to researchers the group decided to classify skills in a matrix. This matrix is spanned by the European Framework for Research Careers (EFRC) and the Researcher Development Framework (RDF) as the template for classifying professional development provision. The EFRC is now an accepted European classification for researcher categories. The RDF, developed by Vitae in the UK, has been piloted in a number of countries through the European Science Foundation (ESF) and is seen to have worked well. This, the Group agreed, was a useful framework for the classification of skills training provision.

The European Framework for Research Careers (EFRC)\(^3\) provides a classification of careers stages for researchers. This classification is independent of sector, applying equally to the public and private.

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)

The Group agreed to classify the types of professional development using the Researcher Development Framework (RDF)\(^4\) provided by Vitae on the knowledge, behaviours and attributes of successful researchers. This includes 4 domains and 12 types of skills:

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\(^3\) The EFRC is most appropriate as it is based on the guiding principles of Research Excellence; core competencies linked to research; overarching framework for all sectors; transferability of the competencies and skills; not linked to any job title or career track

\(^4\) www.vitae.ac.uk/rds
• Engagement, influence and impact
• Knowledge and intellectual abilities
• Research governance and organisation
• Personal effectiveness

The characteristics of this framework are that it provides a common language and is based on researcher self-assessment. There is a total of 63 Descriptors with phases of development and these are independent of job or career stage. In addition the RDF is concerned with skills needed by researchers inside and outside academia regardless of professional destinations.

It is important to stress that this is not intended to be a full mapping exercise. The objective is to provide as many examples as possible for the template in order to gain an overall impression of skills training.

3.2 Details of Professional Development Provision

It is important to recognise that researchers develop many competencies and expertise through doing research. It is good to supplement this with specific skills through professional development programmes. The skills can be classified using the VITAE domains; Engagement, influence and impact; Knowledge and intellectual abilities; Research governance and organization; Personal effectiveness.

Researchers are professionals with multiple career options and a good professional development provision will equip them to make a fast effective transition to a wide range of careers. That being said the core expertise of the ability to analyse and solve complex problems comes from the research experience itself.

The process of classification raised a number of issues relating to skills; how they are acquired, course content, their availability and accessibility. Professional development comes in many forms and is not confined to well-defined courses and professional accreditations. At senior level, it may come through collaborations with academics in other countries on supervision, for example. There are skills acquired through dedicated Teaching & Learning courses (including classroom, workshop and online). There are also skills acquired through on the job experience or learning by doing (e.g. teaching skills through running tutorials, supervising laboratory sessions and lecturing). This analysis predominately focuses on learned skills although, as will be seen in the examples, it does make reference to learning by doing.

The content of any skills training may range from a one-day informal event to a fully accredited professional qualification at level 9 with ECTS. The examples provided by the WG members show a wide range of course content.

Specific skills may be offered only at single institutions, at a number of linked institutions or available nationally. Of course one may have certain types of skills that are offered at single institutions but, in fact, are available on a national basis. For
example, courses on research ethics are offered at most universities and, although different in detail, can be considered to be available nationally.

Access to courses is another issue that emerged in the course of the WG investigations. In many universities, there are courses that are usually available to all researchers, for example, on research ethics. However there are also skills training that are only offered to those, for example, enrolled in a specific structured PhD programme.

There is wide variation of accreditation of courses. Courses may be compulsory or voluntary. This depends on the content and whether the researcher is part of a structured programme with mandatory training elements. It seems that compulsory training is found for the most part during doctoral research (R1).

Table 1  Matrix used by the Skills Working Group to present skills training provision

<table>
<thead>
<tr>
<th></th>
<th>R1 First stage researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overview</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Research</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knowledge and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Personal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effectiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Research</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Engagement,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>influence and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>impact</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A: The knowledge, intellectual abilities and techniques to do research
B: The personal qualities and approach to be an effective researcher
C: The knowledge of the standards, requirements and professionalism to do research
D: The knowledge and skills to work with others and ensure the wider impact of research

For full details see http://www.vitaen.ac.uk/researchers/428241/Researcher-Development-Framework.html

The full set of results for each of the respondents is given in Appendix 3.
4. DISCUSSION OF RESULTS

4.1 Data Sources

In this section the country results along with some more general information from the European Universities Association (EUA) and EURODOC are presented. The full set of responses from the working group members for Austria, Finland, Germany, Ireland, Norway, Portugal, Slovenia and the United Kingdom are given in Appendix 3. A précis of surveys carried out by EUA and EURODOC are in Appendices 4 and 5 respectively. Upon examination of the results some patterns emerge. There is no single national body responsible for the provision of skills training in the academic sector. There are a number of policy approaches, led by the key stakeholders, government, funding agencies and universities. There is no single skills policy for all four-researcher categories. One can clearly identify strategies for PhD candidates (R1) as a distinct grouping from the other three. The R2 has some overlap with R1 in terms of skills but R3 and R4 are completely separate.

4.3 Variation with Career Category

There is a very high level of activity at PhD level (R1) covering a wide range of skills. The skills range from transferable (e.g. project management and communication) to research specific (e.g. research ethics and commercialisation). The levels of accessibility and availability vary and are linked to funding. The emergence of structured PhD programmes across Europe has brought with it a concentration on the provision of skills training for doctoral candidates (R1). This is linked to national and European policy agendas where in recent years specific funding streams have been introduced to fund structured doctoral programmes / schools.

In the ARDE 2011 survey\(^5\) carried out by the EUA, 79 % of the respondent universities had career development services, usually transferable skills training. There were two main trends in transferable skills training identified in the survey. The first, was a comprehensive approach with a coherent offer of courses that are logically interconnected or 'à la carte'-approach where researchers could choose from a range of different courses. (Appendix 4).

In 2011 EURODOC published a survey of 7561 researchers in 12 countries that examined access to skills training. They found that at least 60% received training within / without their university. This was over 80% for 8 countries and on average was mandatory for 22%, see Appendix 5.

Given the high percentage of PhD graduates who immediately leave academia it is most important that they are equipped for a diversity of careers supported with skills training. Also it must be kept in mind that the doctorate is a university degree of the highest level and there are in place national and institutional regulations to ensure the highest quality and standards. Some of the core drivers here are the Bologna Process and Salzburg Principles, the Charter and Code along with national policy on doctoral training.

\(^5\) Survey on the implementation of quality management systems at 112 European universities with ~130,000 doctoral candidates [www.eua.be/arde]
It is clear from the data provided that there is a transition point at the end of R1 with a sharp decrease in professional development provision. Despite the Charter and Code being place since 2005 it impact here is somewhat limited. Moreover from Recognised Researcher (R2) through Established Researcher (R3) to Leading Researcher (R4), training is dominated by academic career skills. At one level this is not surprising as the training is taking place in universities provided for their employees. However, the real bottleneck in academic career progression is the transition from dependent to independent researcher (R2 to R3). Therefore during R2, researchers must make critical decisions to decide longer-term career plans. Yet the findings of the Working Group indicate that training opportunities for this cohort of researchers are limited. Those existing opportunities primarily focus on the academic career (e.g. teaching, mentoring and securing research funding).

At R3 Established Researcher level there are some opportunities for training in leaderships as part of the process of developing independence.

The data from these countries is summarised schematically in Table II below.

Table II Summary of the country results for skills training

<table>
<thead>
<tr>
<th>Status</th>
<th>R1 First stage researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student / Fellow / Employee</td>
<td>Fellow / Employee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overview</td>
<td>Bologna, Salzburg, Charter and Code have driven R1</td>
<td>Charter &amp; Code has had a low impact here</td>
<td>Continuous Professional Development for staff</td>
<td>Continuous Professional Development for staff</td>
</tr>
<tr>
<td>A. Research knowledge and skills</td>
<td>Well covered through the experience of doing research and some specific courses</td>
<td>Well covered through the experience of doing research and some specific courses</td>
<td>Not provided: no longer necessary?</td>
<td>Not provided: no longer necessary?</td>
</tr>
<tr>
<td>B. Personal effectiveness</td>
<td>Some courses but very much individually driven</td>
<td>Some courses but very much individually driven</td>
<td>Individually driven</td>
<td>Individually driven</td>
</tr>
<tr>
<td>C. Research management</td>
<td>Often well covered through specific courses</td>
<td>Some coverage through specific courses</td>
<td>Not provided: no longer necessary?</td>
<td>Not provided: no longer necessary?</td>
</tr>
<tr>
<td>D. Engagement, influence and impact</td>
<td>Focus on communication, teaching. Lack of professional development support for knowledge transfer</td>
<td>Focus on communication, teaching. Lack of professional development support for knowledge transfer</td>
<td>Focus on teaching / supervision / mentoring. Lack of professional development support for knowledge transfer</td>
<td>Some leadership provision Lack of professional development support for knowledge transfer</td>
</tr>
</tbody>
</table>
4.2 Sources of Funding

Funding agencies and universities play a central role in professional development provision for researchers. One can identify two broad approaches to supporting researchers that has a very strong influence on the quantity and quality of training. Many researchers are funded through one of two mechanisms, fellowship or project. In the first case, the individual researcher applies for funding to schemes that usually focus on career development. Along with funding for the researcher’s stipend / salary, there may be funding for skills training and career development. A good European wide example would be the Marie Curie Individual Fellowships. One can include structured doctoral programmes / schools within this category. There are of course researchers who are fulltime employees of universities and research centres. In this case, they would receive training through continuous professional development opportunities for all staff.

Often as not, researchers supported through funded projects are hired to carry out a specific piece of research. In this case it is not common to have funding available for professional development provision within the project.

It must also be recognised that many universities provide and therefore fund professional development for researchers through the normal Human Resources led continuous professional development for all employees. In this context, it was recognised that professional development provision may be used as part of career development but also within performance management for research and promotion. However it must also be recognised that this provision depends strongly on the funds available. The general professional development provided for all staff may be useful for researchers but there must also be specific provision for researchers. This can be a challenge for universities as they must cost professional development provision for a transient population of researchers.

Overall there could be said to be a piecemeal approach to funding professional development. There has been much done at doctoral level however it tapers off rapidly in R2, R3 and R4. There is no doubt that increasing professional development provision for researchers will not be possible without increased commitments from funding agencies and universities.
5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions
Based on the data gathered in this study and the background knowledge of the WG members we make the following broad conclusions:

1) Researchers are professionals with multiple career options and a good professional development provision will equip them to make a fast effective transition to a wide range of careers. That being said, it is important to emphasize that the researcher's development of core expertise of the ability to analyse and solve complex problems comes from the research experience itself.

2) In recent years, national, European and institutional policy has ensured that professional development provision for researchers is recognised as an important part of career development however gaps remain.

3) There is no single national approach in Higher Education and public research sectors for skills training. The reality is that this is a combination of approaches by government, funding agencies and universities.

4) Apart from those researchers who are permanent employees the funding mechanism (Fellowship or Project) and Human Resources policy of the university play a central role in determining if a researcher has access to professional development provision.

5) There is a wide range of professional development provision courses available however the following must be taken into account:
   - Content and quality
   - Accessibility
   - Availability
   - Cost

6) Professional development provision varies significantly in quantity and type across the different research career categories.
   a. There is a very high level of activity in providing skills training for researchers at doctoral level (R1)
   b. There is a sharp decrease in skills training beyond R1.
   c. From Recognised Researcher (R2) through Established Researcher (R3) to Leading Researcher (R4), what little training and development exists is dominated by academic career skills.

7) Professional development provision most commonly focuses on academic related provision. Training and development in Independence, knowledge exchange and innovation - domain D - is poor, even at doctoral level.
5.2 Recommendations

In making recommendations the original aim of the Working Group should be kept in mind. These aims are;

- Assist researchers in their career changes.
- Provide recommendations through the exposition of national models of provisions for researchers' skills and an analysis of the quality and pertinence of these provisions.
- Provide a basis of information of the evolution (success) of changes in researchers' careers towards the completion of ERA (from 2000 to 2014).

It would seem from the conclusions above that more needs to be done in professional development provision to give researchers greater support in making career decisions and improving their employability.

The national models presented in this report provide a good representation of activity across Europe given the country mix both in terms of size and location. Conclusions or recommendations concerning the quality of professional development provision are beyond the scope of this report. Suffice to say that, there is likely to be a wide variation in the quality of professional development provision. There is a common thread running through all of the examples of professional development provision for researchers inclined towards an academic career.

Much has been achieved across Europe since 2000 towards the ERA goals. Professional development provision is now broadly recognised as an integral component of career development for researchers. Significant progress has been made at doctoral level (R1) in providing skills training and to some extent at the next level of Recognised Researcher (R2).

Recommendation 1

There needs to be a greater focus on providing opportunities for researchers to pursue multiple career paths supported by professional development provision. While there is common recognition among policy makers, funders and universities that professional development provision is an integral part of career development:

- The European Commission should encourage that all researchers funded under its various modalities have access to professional development provision
- National funding agencies should collaborate with universities to ensure that all researchers have access to professional development provision
- Researchers should take responsibility for their own career development recognising the limited opportunities in academia and maximise their multiple career opportunities in the wider economy through professional development provision.
Recommendation 2

There is significant variation in professional development provision for different researcher categories and domain. There should be close cooperation between all stakeholders to ensure that professional development provision is appropriate for each domain and category.

- The European Commission should undertake a broad study to identify the relevant professional development provision across all researcher categories (R1-R4).

Recommendation 3

Researchers enter a wide range of careers in addition to research in academia. A key part of the development of the knowledge economy is to introduce research in a non-research environment and benefit from the ability of researchers to analyse complex problems. As a consequence training researchers just to be researchers in academia is no longer appropriate. Therefore the academic paradigm must change recognizing in full that the majority of researchers trained will pursue careers outside the university and academics need to be more engaged in knowledge exchange and innovation.

- Universities should ensure that there is a balanced professional development provision for researchers at all levels to optimise their employment opportunities
- Universities should explore opportunities for researchers to experience placements in other sectors.
APPENDIX 1

Mandate of SGHRM WG

Proposal (Version 3: 19/09/2011)¹

Third Cycle of the SGHRM Working Groups - objectives, outcomes and profiles

Introduction

This note provides a proposal for the objectives, desired outcomes and composition of a new cycle of Working Groups (WGs) installed by the SGHRM. This is in accordance with the operational principles for these WGs (Annex I) and bearing in mind the urgency created by the Council Conclusions of the 31 May, 2011 Competitiveness Council inviting the SGHRM to support the implementation and monitoring of the relevant IU commitments, including the development of the ERA Framework.

WGs would ideally consist of 5-10 members from SGHRM delegates, topic-specific national representatives, non-governmental experts and other stakeholders. The Working Groups would be chaired by a SGHRM delegate.

During the 22 June, 2011 SGHRM meeting, and in the weeks/months that followed (until 12/09/2011), ideas were exchanged on the various topics to be dealt with in the future WG cycle while bearing in mind the following principles:

- WG should have a **concrete and well defined objective** that could be delivered within 4-6 months
- The work of the WG should have an **added value** with respect to other groups working on the same topic
- Given the human resources available, **we can not have more than 4 WGs**, including the one on Monitoring which should continue throughout the SGHRM work

Furthermore, in all WGs and where relevant, the gender aspect should be accounted for. Effort should be made to liaise with the Helsinki Group in order to ensure that the gender aspects are properly addressed where relevant.

If this proposal is accepted and successfully implemented, we would deliver the following **"products" towards the implementation of IU Commitments 1, 4 and 30 before April 2012**: ¹

1) An inventory of initiatives taken thus far to implement the C&C principles as well as other examples of good practice not directly linked to C&C
2) Recommendations to relevant stakeholders on how to increase the effectiveness of the HRS4R process
3) Identification of the most effective policy approaches to gradually reach substantially wider access to and portability of grants

¹ This proposal only contains WG3, mandate for other WG to be found in version 3:19/19/2011
4) An assessment of the aggregated effect of the MS/AC training strategies for researchers and the identification of training gaps where applicable (short report, including recommendations, of maximum 5 pages + annexes if necessary)

5) Reliable Support for monitoring of the IU commitments

WG 3 – Researchers’ Training [IU Commitment: 1]:

Starts January 2012

Rationale and Timing: According to IU Commitment #1, by the end of 2011, MS "should have strategies in place to train enough researchers to meet their national R&D targets". Data on these strategies are currently being collected through the questionnaire developed by the contractor Deloitte and circulated to the SGHRM delegates. Following the deadline for responses of 31 October 2011, the contractor will process the data on responses including those on training strategies. This working group would use these strategies as a starting point for an analysis to verify whether they cover the training needs of researchers with their various profiles.

Concrete Deliverable(s):
1) An assessment of the aggregated effect of the MS/AC training strategies for researchers and the identification of training gaps where applicable (short report, including recommendations, of maximum 5 pages + annexes if necessary)

Focus/Goal is to assess the aggregated effect of the MS/AC training strategies for researchers in academia and Industry with the ultimate goal of identifying gaps (with respect to training needs) and developing agreed-upon recommendations.

 Operational Objective is to:
- Conduct an analysis of the submitted MS (and AC) training strategies - Identify training gaps and issue recommendations

Members\(^2\) and Stakeholders Profile would include countries representatives specialised in skills development. Stakeholders to invite would include the EUA Council for Doctoral Education, EURODOC, BUSINESS EUROPE and EIRMA. DG Education and Culture and DG Employment would be involved. The WG would stay in close contact with related activities by EURAXESS.

\(^2\) In addition to SGHRM delegates who should be part of each WG
APPENDIX 2

Notes on how to complete the matrix

WG SKILLS - Researcher Training Gap Template
Version 3rd April 2012

• It has been recognised that a full mapping of skills training is not feasible in the allotted time nor would it be particularly informative.

• The purpose of this exercise is to give an overview of activities in your country focusing on the "big picture".

• As we agreed at the Working Group meeting on 27th March please begin by attempting to populate the R4 category and work backwards.

• Deadline for response is 17th April in order that we may discuss this at our next WG meeting scheduled for 25th April. The report will then be finalized and sent to the Steering Group for discussion at the next SGHRM meeting on 23rd May.

1. What are the national /regional strategies/initiatives for these levels (R1 to R4)?

• It is clear from our work to date that the question is somewhat misplaced as there is no single national skills agenda for any country.

• This means that the responses to the Deloitte questionnaire will not provide a complete overview. For examples, there are cases where the response has been simply to state that there is no national policy in place. In reality, there are a number of agendas relating to skills for researchers driven by different stakeholders at regional and national level. First, there is broad government policy that may manifest itself through Higher Education and / or Research policy. Secondly, there is the policy set by agencies when they provide funding for skills training. This tends to concentrate at the level of doctoral studies. Thirdly, there is the approach of universities and other organisations that host researchers.

• It would be helpful to outline the various skills strategies at governmental, funding agency and university level.
2. Can you give example(s) of the main initiative(s) on these particular areas (A to D)? **IRELAND**

- We have agreed to use the matrix spanned by the European Framework for Research Careers (EFRC) and the Researcher Development Framework (RDF) as the template for investigating skills provision. The EFRC is now an accepted European classification. The RDF, developed by VITAE in the UK, has been piloted in a number of countries through the European Science Foundation (ESF) and is seen to have worked well.

- This is not intended to be a full mapping exercise. The objective is to provide as many examples as possible for the template in order to gain an overall impression of skills training.

- The table is filled with examples from Ireland and while not being complete does give an overall impression of skills training (the full template completed before last WG meeting on 27th March is appended).
<table>
<thead>
<tr>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First stage researcher</strong></td>
<td><strong>Recognised Researcher</strong></td>
<td><strong>Established Researcher</strong></td>
<td><strong>Leading Researcher</strong></td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Student / Employee</td>
<td>Employees</td>
<td></td>
</tr>
<tr>
<td><strong>Overview</strong></td>
<td>Completely restructured PhD with transferrable/generic skills and advanced disciplinary courses</td>
<td>Many will access the R1 courses but also have access to continuous professional development opportunities through HR</td>
<td>Continuous professional development opportunities through HR</td>
</tr>
<tr>
<td><strong>A. Research knowledge and skills</strong></td>
<td>Graduate Certificate in Innovation and Entrepreneurship, TCD-UCD Innovation Academy (LS, A2, S1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GS505 Graduate Research Skills, NUI Galway (LS, A1, S2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>'I'm nearly finished' - exploring the personal writing challenges and breakthrhougs associated with completing a PhD (NAIRTL)³ (LS, A3, S2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B. Personal effectiveness</strong></td>
<td>Graduate Certificate in Innovation and Entrepreneurship, TCD-UCD Innovation Academy (LS, A2, S1)</td>
<td>Networking both internally and externally, UCD (LS, A1, S2)</td>
<td>Networking both internally and externally, UCD (LS, A1, S2)</td>
</tr>
<tr>
<td></td>
<td>GS510 Publishing Research &amp; Preparing for the Job Market, NUI Galway (LS, A1, S2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GS3 Thesis Completion and Career Development, NUI Maynooth (LS, A1, S2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C. Research management</strong></td>
<td></td>
<td>Project Management in the Research Context, UCD (LS, A1, S2)</td>
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<tr>
<td></td>
<td>Project Management for Researchers, UCD (LS, A1, S2)</td>
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</tr>
<tr>
<td><strong>D. Public engagement and impact of research</strong></td>
<td>GS512 Engaging with the community: research, practice and reflection, NUI Galway (LS, A1, S2)</td>
<td>Grant Writing, DCU (LS, A1, S2)</td>
<td>Grant Writing, DCU (LS, A1, S2)</td>
</tr>
<tr>
<td></td>
<td>Giving Tutorials (A3, S2, ES)</td>
<td>Pitching your Research to increase Funding Opportunities, DCU (LS, A1, S2)</td>
<td>Pitching your Research to increase Funding Opportunities, DCU (LS, A1, S2)</td>
</tr>
<tr>
<td></td>
<td>Laboratory Supervision (A3, S2, ES)</td>
<td>Lecturing (A3, S2, ES)</td>
<td>Lecturing (A3, S2, ES)</td>
</tr>
<tr>
<td></td>
<td>Exam Invigilation (A3, S2, ES)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A: The knowledge, intellectual abilities and techniques to do research
B: The personal qualities and approach to be an effective researcher
C: The knowledge of the standards, requirements and professionalism to do research
D: The knowledge and skills to work with others and ensure the wider impact of research

For full details see http://www.vitae.ac.uk/researchers/428241/Researcher-Development-Framework.html

Notes on completing the template
1) As agreed at the meeting, please focus first on R4 and work backwards!

2) Give a brief description of specific courses in the template and accompany with full web references.

3) If possible please provide a measure of how widely available the course is based on:

   **Availability**
   A1 – low available at a single institution
   A2 – medium available at a number of institutions
   A3 – large available nationally (note that this could also be a type of course that is available nationally, e.g. in Ireland courses on research ethics are available for all PhD students in every university however the course itself is delivered locally)

   **Access**
   Is the course available to a select group (S1) of researchers or to the whole community (S2). For example, you would indicate S1 if the course is available only for doctoral candidates on a particular PhD programme.

4) Remember that “training” comes in many forms and is not confined to well-defined courses and professional accreditations. At senior level, it may come through collaborations with academics in other countries on supervision, for example. In this context it is important to recognise that there are two broad forms of skills training:

   - **Learned Skills (LS)** acquired through dedicated Teaching & Learning courses (including classroom, workshop and online)
   - **Experiential Skills (ES)** acquired through experience (e.g. teaching skills through running tutorials, supervising laboratory sessions and lecturing)

At the PhD level (R1) it would seem that skills acquisition is dominated by Learned Skills while Experiential Skills (ES) dominate for Leading Researchers (R4).
Even if you can only indicate availability and access for a few examples, this would be very helpful. Also if possible distinguish between Learned and Experiential. The emphasis in filling the table is to provide an overview of skills training in your country.
APPENDIX

IRELAND
Version completed 23rd March 2012 and discussed at WG Skills meeting on 27th March
IRELAND
Version completed 23rd March 2012

1. What are the national/regional strategies/initiatives for these levels (R1 to R4)?

There are a number of policy approaches in Ireland, led by the key stakeholders, government, funding agencies and universities. There is no single skills policy for all four categories. One can clearly identify strategies for PhD candidates (R1) as a distinct grouping from the other three. The R2 has some overlap with R1 in terms of skills but R3 and R4 are completely separate.

The section below provides an overview of skills provided for the four categories of researchers.

R1 Doctoral Training
In Ireland, one can identify two approaches to doctoral education, that of the government and of the universities.

Government
There are two national policy documents that set out the approach to the education and training of PhD students. The first is the Strategy for Science Technology and Innovation (SSTI). This was published in 2006 and laid out a national investment strategy for doubling the number of PhD graduates by 2013.

The SSTI target of doubling the number of PhDs in higher education involves collaboration between a number of Higher Education groups including the Deans of Graduate Studies, higher education organisations, employers in industry and the government. Agencies which have increased investment in “Fourth Level Ireland” (PhD + early postdoc) include the Higher Education Authority (HEA) through the Programme for Research in Third Level Institutes (PRTLI), the Strategic Innovation Fund (SIF) and Graduate Research Education Programmes (GREPs), the Health Research Board (HRB) and Science Foundation Ireland (SFI). Having developed structured PhD programmes, these agencies have a vested interest in their successful implementation.

Funding for structured PhD’s is provide through a number of national programmes. The main one is the Programme for Research in Third Level Institutions (PRTLI). The principal feature of this scheme is its collaborative nature. The various PhD programmes are thematically based and bring together universities, institutes of technology and research centres. Some have industry and / or hospitals as partners.

The economic situation has changed since SSTI was launched in 2006 and the ability for the Irish government to support a full bottom up approach to research investment is no longer feasible. Resources must be carefully targeted to ensure maximum benefit for the Irish economy and society. On 1st March, the Minister for Enterprise Jobs and Innovation unveiled a new plan for public investment in research through the report of the Research Prioritisation Group. The recommendations in this
report build on the strengths developed through previous investments and identify target areas of opportunity. This will be done on a five-year timescale that concentrates on areas that are of clear economic interest to Ireland. The report recognizes the importance of researchers and in particular the PhD. It has two relevant recommendations:

“A consistent quality framework should be developed for postgraduate education and training incorporating the Structured PhD model. Responsibility for monitoring of the output and quality of Masters and PhD training and education should rest with the Department of Education and Skills (DES). Indicators of the quality of postgraduate education and training should be developed by DES and integrated into the Government’s overall framework for monitoring science, technology and innovation.

Initiatives to improve further and keep under continuous review the alignment between the supply of trained researchers from academia and the demand for such skills from the enterprise sector are imperative:

- A proportion of PhD funding should be earmarked to support the development and rollout of the industrial PhD model in Ireland.
- A proportion of PhD funding should be redirected towards the development of industry driven Masters programmes.
- Technology Transfer Offices within the HEIs should develop a coherent and integrated programme of support for PhD students and early stage post-doctoral researchers that enables them to identify and exploit commercial opportunities arising from their research”.

A new completely separate announcement is imminent that will bring together the two research councils (IRCSET and IRCHSS) to form a single council, the Irish Research Council (IRC). The focus of this council will be the funding of PhD and early stage postdoctoral researchers. It will continue the work of the two previous councils that focused on structured PhD’s and researcher career development.

It is clear that the government is committed to the funding of structured PhD’s as the best method for the training of doctoral candidates. The new aspect that will be introduced is a major collaboration with the private sector, expanding the current industry PhD.

**Universities**

Led by the IUA and the universities have restructured PhD education in Ireland. There is now a much more structured approach to graduate studies and research in universities and other higher education institutes. The original proposal was published by the Irish Universities Association (2005) to reform the “Third and Fourth Level” education in Ireland were:

- At Third Level, a radically improved system to support the fundamental changes required to ensure graduates are equipped for a lifetime of innovation and change in the workplace and further learning at Fourth Level (PhD + early postdoc);
• At Fourth Level (PhD + early postdoc), a dramatic improvement of performance in research and the output of highly-skilled graduates with doctoral qualifications and post-doctoral experience.

Reflecting the need to accommodate support and development opportunities to meet the needs of an employment market wider than academia, furnish places for an expansion in doctoral candidates, and maintain quality, the Irish Universities Association (IUA) asserted in 2005 that:

The current training structures and systems of the universities cannot deliver the required increase in numbers while simultaneously maintaining quality. A substantially modernised system is required to deliver the types of Masters and PhD graduates that are fully skilled to engage in the knowledge society (IUA, 2005: 15).

It was envisaged that the modernised system would include the universal enrolment of PhD candidates on structured programmes. As part of the development Deans of Graduate Studies authored the IUA PhD Graduates’ Skills Statement, which outlines the competencies, attributes and qualities a PhD graduate should ideally possess following a PhD and acts as a communication document to potential employers. The statement is also considered an aid to those developing and designing structured programmes.6

Structured PhD programmes in the universities provide a framework in which students have optimal opportunity to develop these competencies, attributes and qualities. Skills for PhD students such as research skills and awareness, ethics and social understanding, communication skills, personal effectiveness/development, team-working, leadership, career management, entrepreneurship and innovation are included in the Graduate Skills Statement. The majority of these competencies are developed through the conduct of research, embodied in the PhD thesis, the quality of which remains the basis for the award of a PhD.7

In 2005, the Irish Universities Quality Board (IUQB) published National Guidelines of Good Practice in the Organisation of PhD Programmes in Irish Universities to support the development of new structures, policies, guidelines and procedures to assist

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6 In April 2009, the IUA released the contextual statement regarding structured PhD programmes (IUA 2009).
7 The PhD is placed at level 10 on the National Framework of Qualifications.
doctorate students in Irish Universities and Institutes of Technology. The IUQB, working with the aforementioned Network, revised the guidelines in 2009 reflecting the increasing number of structured doctoral programmes. The 2009 guidelines state that the main characteristics of the structured PhD programme are specified programmes of education and training "determined institutionally and at levels of facilities and disciplines", however each student follows a unique programme (IUQB, 2009: 8). These programmes may be provided within one or more institutions.

In 2009, the IUQA released a contextual statement regarding structured PhD programmes. The statement defines the core component of a structured PhD programme as:

The advancement of knowledge through original research. The goal of such a programme is to provide a high quality research experience and output, with integrated support for professional development. The structured PhD programme is therefore designed to meet the needs of an employment market that is wider than academia, through the introduction of a range of educational and training opportunities as part of the programme. In doing so, the structured PhD can better address the immediate research needs of students, as well as preparing them for future careers in a wide variety of contexts.

- Enhanced arrangements for supervision and mentorship
- Structured arrangements for the development of generic and transferable skills
- Advanced taught courses in their discipline
- Regular monitoring of progress (IUQA, 2009).

Across the seven universities there is now a large number of structured PhD programmes all within a common template. One key feature of collaboration has been the development of ECTS for skills training. This allows students move seamlessly between universities for specific courses and carry their credits.

A typical example of such a programme is BioAT, Bioanalysis & Therapeutics. This Structured PhD Programme (BioAT) is a joint initiative being undertaken by Dublin City University, the Royal College of Surgeons in Ireland, National University of Ireland, Maynooth and Institute of Technology, Tallaght to address the challenge of increasing the quality, quantity and entrepreneurial skills of Ireland's graduate researchers in the critical areas of the biopharmaceutical and biomedical device industries.

BioAT offers students a unique training and educational experience in basic and applied research, advanced technologies, and collaborative clinician-scientist research in hospital-based laboratories (Beaumont and Connolly Hospitals, and the Children's Research Centre at Crumlin Hospital). This integrated approach to advancing the understanding, diagnosis and treatment of specific diseases (cancer, neurological, cardiovascular, respiratory and infection/immune diseases) with significant potential for commercialisation is a major strength of the programme. During their PhD students will have the opportunity for placements in international
pharma companies and universities (e.g. Harvard Medical School)

R2 / R3 Recognised and Established Researchers
All researchers beyond the PhD are employees whether on fixed term or permanent contracts. As such they have access to continuous professional development (CPD) organized by the institution’s human resources. Many early postdoctoral researchers (R2) would access the skills training offered to PhD students. Some Irish Higher Education Institutes have in place specific CPD schemes for researchers, for example, Dublin City University has the "Researcher Continuous Professional Development" scheme.

The National Academy for Integration of Research Teaching and Learning (NAIRTL, www.nairtl.ie) is a collaboration between University College Cork, Cork Institute of Technology, National University of Ireland Galway, Trinity College Dublin and Waterford Institute of Technology. NAIRTL is a centre of excellence for professional academic development in higher education institutions, targeted at the integration of research and teaching and learning, to support the enhancement of the student experience. It plays a key role in establishing best practice and in developing a cohort of academic staff with the requisite skills to deliver structured PhD's. A typical course delivered by NAIRTL would be on mentoring and supervision of PhD students.

While NAIRTL operates at a national level each university has its own internal structures. For example, in Trinity College Dublin, there is the Centre for Academic Practice and eLearning (CAPSL).

CAPSL offers a number of programmes for professional development and support, including workshops and seminars on various aspects of learning and teaching. Programmes range from short workshops to a new Masters Degree in Education in Learning and Teaching. CAPSL promotes e-Learning by supporting the academic community in developing their knowledge and skills in the use of new technologies. Blackboard/WebCT is the College Virtual Learning Environment which offers lecturers a cohort of tools to design and develop courses on-line.

The Dublin Regional Higher Education Alliance brings together all of the third level institutions in the Dublin area. It pools efforts in the development and delivery of structured training for PhD’s.

At the level of R3, one will have acquired a significant number of skills, both generic and disciplinary. At this level the typical type of skills offered come through fellowships to enable researchers specialise. A good example is the Health Research Board (HRB) fellowship in translational medicine (see box). The purpose of this fellowship is to enable Clinicians with more than 3 years post-doctoral experience (e.g. doctors, dentists, nurses and other health care professionals) move into the area of translational medicine.
Post-doctoral Research Fellowships in Translational Medicine - Bench to bedside and bedside to bench

Translational medicine is an emerging field which focuses on using what is learned in pre-clinical studies to do smarter things in the clinic (‘bench to bedside’). Translational medicine also uses information from clinical studies to sharpen and improve what is done in pre-clinical efforts (‘bedside to bench’). It encompasses activities in prevention, diagnosis, prognosis and treatment. Translational medicine bridges applied biomedical research and clinical science with the aim of bringing new discoveries to patients and the population.

R4 Leading Researchers
Almost all of the leading researchers in Ireland are based in the universities and employed as academics (lecturers / professors). As employees they have full access to continuous professional development (cpd) opportunities. At this level the typical type of skills that they might access would relate to senior management (running a university department or becoming a faculty dean).
2. Can you give example(s) of the main initiative(s) on these particular areas (A to D)? IRELAND

I have added what I think is useful information to the table.

<table>
<thead>
<tr>
<th>Status</th>
<th>R1 First Stage Researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Research knowledge and skills</td>
<td>Graduate Certificate in Innovation and Entrepreneurship, TCD-UCD Innovation Academy</td>
<td>Many will access the R1 courses but also have access to continuous professional development opportunities through HR</td>
<td>Continuous professional development opportunities through HR</td>
<td>Continuous professional development opportunities through HR</td>
</tr>
<tr>
<td></td>
<td>GS505 Graduate Research Skills, NUI Galway</td>
<td>'I'm nearly finished' - exploring the personal writing challenges and breakthroughs associated with completing a PhD (NAIRTL)(^8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Personal effectiveness</td>
<td>GS510 Publishing Research &amp; Preparing for the Job Market, NUI Galway</td>
<td></td>
<td>Network both internally and externally, UCD</td>
<td>Networking both internally and externally, UCD</td>
</tr>
<tr>
<td></td>
<td>GSS3 Thesis Completion and Career Development, NUI Maynooth</td>
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<td></td>
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</tr>
<tr>
<td>C. Research management</td>
<td></td>
<td>Project Management in the Research Context, UCD</td>
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<tr>
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<td></td>
<td></td>
<td>Pitching your Research to increase Funding Opportunities, DCU</td>
<td></td>
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</tr>
</tbody>
</table>

A: The knowledge, intellectual abilities and techniques to do research
B: The personal qualities and approach to be an effective researcher
C: The knowledge of the standards, requirements and professionalism to do

\(^8\) http://www.nairtl.ie/index.php?pageID=27&eventID=419
research

D: The knowledge and skills to work with others and ensure the wider impact of research

There is a challenge in completing a table of this type. The first is that, in Ireland, there is no single national initiative for skills training. It is done by single institutions and through collaborative ventures (see examples in previous section). In addition, some of the courses given cover more than one of the four areas.

Let me give a concrete example. The Innovation Academy is a joint venture between University College Dublin (UCD) and Trinity College Dublin (TCD) with the aim of transforming PhD students into entrepreneurs. They offer a Graduate Certificate in Innovation and Entrepreneurship available both as an integral part of the doctoral degree and as a stand-alone programme. The two modules within this programme are Creative Thinking & Innovation\(^9\) and Opportunity Generation & Recognition\(^{10}\).

I have also included specific examples of courses offered as part of the structured PhD in NUI Galway and NUI Maynooth. Of course similar courses exist in all of the universities but it is worth showing some specific examples.

At R2 / R3 level, I give some examples of courses for researcher career development provided by University College Dublin (UCD) and Dublin City University (DCU). It is worth noting that the development courses for researchers at this level are for single universities only.


APPENDIX

Examples of Structured PhD Programmes and Courses

Bioanalysis & Therapeutics (BioAT)

A Unique PhD Scholars' Programme in BioAnalysis & Therapeutics (BioAT)

This collaborative inter-institutional 4-year structured PhD programme is funded by the HEA under Cycle 5 of the Programme for Research in Third-Level Institutions (PRTLI). The programme brings together the complementary expertise of researchers from Dublin City University, the Royal College of Surgeons in Ireland, National University of Ireland, Maynooth and Institute of Technology, Tallaght.

BioAT is an integrated, flexible and student-centric programme which will enable students to broaden their skills base and career opportunities through participation in high quality research, advanced training, personal and professional development, and exposure to an innovative, translational research environment.

Research projects underpinning Bio-AT training will lead to developments in bioanalytical methodology and technology applied to disease diagnosis and treatment. Furthermore, they will have significant potential for commercialisation.

Research opportunities related to the following areas are available:
• Cardiovascular disease
• Infection & Inflammatory disease
• Neurological disease
• Cancer
• Regenerative medicine
• Metabolic disease
• Diagnostics
• Bio-Photonics & Imaging
• Medicinal Chemistry
• Nano-Bioanalytics
• Biosensors
• Biomedical devices

BioAT will award 29 scholarships in 2011 based across the partner institutes. We are currently accepting applications from students with genuine interest and commitment to performing innovative translational research. Full details of how to apply can be found below.
Objectives of BioAT

The overall objective of BioAT is to train and develop the participating students to become world-class researchers with the leadership and innovation skills required to underpin the continued growth and sustainability of these industries in Ireland. The specific objectives are:

- To **establish an innovative inter-institutional model of structured PhD training**

- To **provide a personalised PhD programme**, designed to optimally enhance graduate training with specific emphasis on transferable and research-focused competencies of direct relevance to the career destination of Bio-AT graduates, including academia, industry and the clinical environment.

- To deliver **collaborative multi-disciplinary PhD projects** across the consortium in Target Identification, BioAnalysis, Therapeutics, Diagnostics, Drug design which have specific translational applications in areas such as cancer, neurological, cardiovascular, respiratory & infection/immune diseases.

- To deliver **cross-institutional PhD projects** across the partners that will be uniquely enhanced through engagement with industry & clinicians, made possible by the partnership.

Features of the BioAT Programme

- Access to relevant taught modules across all partner institutions
- 3 laboratory rotations across the partner institutions
- Choice of inter-institutional PhD projects from an extensive range
- Training in cutting-edge technologies
- Supervision by internationally renowned researchers
- Personalised professional development programme
- Travel to international laboratories and conferences
- Emphasis on translational research with clinicians and industry
- Annual stipend €16,000 plus fees (at EU level), travel allowance and laptop
National Academy for Integration of Research Teaching and Learning (NAIRTL)

The National Academy works with Irish higher education institutions to develop and implement policy and practices aimed at enhancing the student learning experience at both undergraduate and graduate level. The Academy supports institutions through investigation and dissemination of national and international examples and models of good practice.

The National Academy's mission is:

• To enhance higher education in Ireland by working in collaboration with institutions to promote innovation, support development and sustain good practice in the integration of research and teaching and learning.

• To build capacity of academic staff and graduate students that will contribute to an innovative work force.

• To provide an efficient, cost effective and quality service to the Irish Higher Education sector.

• To promote a greater awareness of the forms of integration of research, teaching and learning and to encourage all:

Research-led teaching and learning: The curriculum is informed by the research interests of academic staff. Teaching emphasises the understanding of research findings. Research findings are used to inform the curriculum.

Research-oriented teaching and learning: The curriculum emphasises the processes by which knowledge is produced in the field as much as on learning the content of a subject. Teaching focuses on enquiry skills and on acquiring a 'research ethos'.

Research-based teaching and learning: The curriculum contains many activities in which students actually conduct research e.g. enquiry based projects. These activities are based on authentic processes of enquiry and are connected to the research of the institute.

Research-informed teaching and learning: The curriculum is informed by a systematic enquiry into the teaching and learning process itself. The 'scholarship of teaching' approach relates to teachers who are actively involved in evidence-based efforts to establish the effects and effectiveness of student learning, teaching and academic practice.
Dublin Region Higher Education Alliance (DRHEA)
The Dublin Region Higher Education Alliance (DRHEA) is a strategic alliance of the Higher Education sector in the wider Dublin city-region. It includes four Universities and their linked Colleges (TCD, UCD, DCU and NUIM) and four Institutes of Technology (DIT, IADT, ITB and ITT Dublin). The DRHEA has identified four strands where institutions can work collaboratively to increase efficiencies and enhance academic development:

- Enhancement of Learning
- Graduate Education
- Internationalisation
- Widening Participation

Access to DRHEA academic development are available to Trinity academic community, For more information on stands and activities click on [http://www.drhea.ie](http://www.drhea.ie)

DRHEA projects within Trinity College: The Trinity Inclusive Curriculum Project

Dublin Centre for Academic Development (DCAD)
The Dublin Centre for Academic Development (DCAD), the focal point for the DRHEA's Enhancement of Learning strand, will create a 'virtual' Centre that will capitalise on expertise in educational practice, pedagogy and training in the individual institutions, and will provide access to tailored, structured programmes of training, development and support for academics in a cost-effective and collaborative manner.

The DCAD will prioritise the development of a professional development framework, underpinned by an agreed set of core values that will act as benchmarks for excellence for learning, teaching and assessment across the Dublin region and more generally across Irish higher education.

Key Objectives
- Establish a fellowship programme to develop academic leadership and drive academic change across the DRHEA and to improve practice through collaborative activity around priority areas
- Develop a shared accredited training programme for academic staff and tutors which will rationalise teacher training across the DRHEA and build on existing training and educational strengths in partner institutions
- Set up a database of shared expertise and identify multidisciplinary networks to share ideas and collaborate on priority issues
# Graduate Studies Modules - NUI Galway GS505

<table>
<thead>
<tr>
<th>Graduate Studies Form for Modules attached to Structured PhD and/or Research Masters Programmes</th>
</tr>
</thead>
</table>
| **Title** | Graduate Research Skills  
School of Natural Sciences- additional requirements in blue (SNS)  
recommends years 1-3 for completion |
| **Credits (ECTS)** | 5 |
| **Module Places** | Available to all new entrant/ year 1-3 PhD candidates affiliated to the Colleges of:  
* Science  
* Engineering & Informatics  
* Medicine, Nursing & Health Sciences |
| **Course Instance** | |
| **Module Code:** | GS505 |
| **Responsible:** | *School of Physics – Chair, RGE Committee, Physics |
| **Please indicate if generic (GS) or specialised module** | Incorporating a blend of generic (GS) and discipline specific units as appropriate. |

**Indicative Module Descriptor:**  
The module aims to enable students to develop and acquire a range of generic and discipline specific research skills and gain an understanding of their practical application to the research process, in order to successfully complete fourth level research.

The module will be delivered over four semesters of the PhD programme and delivery will incorporate a blended learning approach including participant attendance at face-to-face units incorporating both generic and discipline specific themes and utilisation of supporting online courseware available via Blackboard.

By the end of this module, the student is expected to be able to:

- Demonstrate the ability to identify, access and critically evaluate the requisite specialised skills, technical training, and specialised diagnostic or other equipment required to carry out their research project
- Demonstrate the ability to write regular comprehensive reports of their research/laboratory activities
- Demonstrate an ability to prepare and document annual plans that indicate their detailed strategy for the succeeding phases of the research
- Demonstrate an ability to exploit the extensive patent databases and to benchmark their research activity against the relevant patent literature as appropriate
- Demonstrate an ability to communicate their data or findings in poster format and to a peer audience in the discipline
- Demonstrate an understanding of the importance of a notarised notebook as a record of their original contributions to research

*The Supervisor and Graduate Research Committee are primarily responsible for overseeing this module*

**Workload:**

<table>
<thead>
<tr>
<th>Class Contact</th>
<th>Contact hours:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total 6-9 hours of which a minimum of 3 hours will be in the form of a face-to-face ½ day workshop and the remaining hours selected from either face-to-face or online self-paced learning</td>
</tr>
</tbody>
</table>
| Workshop (other forms of educational activity) | • Required attendance at relevant discipline-specific Getting Started on Your PhD ½ day workshop  
• Plus attendance at a range of optional face-to-face workshops or self-directed learning via appropriate online modules, including generic and discipline specific themes.  
• Graduate Studies expects that the School of Natural Sciences will provide the class and workshops |
| Specified Assignment(s) | Aligned to the student’s PhD research question, module participants will be required to:  
1. Submit 2 referenced annual reports of their research progress (including projected future research activity plans) (Assessor: Graduate Research Committee)  
2. Prepare a presentation on their work for presentation to a peer-audience in their discipline.  
   (Assessor: Graduate Research Committee)  
3. Optional for SNS: Maintain a reflective blog/journal (via Blackboard) outlining and tracking the processes and methods used to progress their research (Assessor: PhD Supervisor) |
| Autonomous Student Learning (please specify) | Following attendance at relevant workshops and/or use of online coursework, students will be expected to undertake independent research activities and apply their knowledge and skills in order to:  
• Produce comprehensive annual reports of their research, appropriately referenced and calibrated against recent work in their field.  
• Identify their needs for training in new techniques, and for access to facilities, information, and software, in order to complete their research.  
• Keep up-to-date with advances in their field  
• Develop an informed and appropriate strategy for upgrading their technical skills  
• Maintain a notarised notebook of their research activity. |
| Assessment(s) |  |

<table>
<thead>
<tr>
<th>Type</th>
<th>% of marks</th>
<th>Timing</th>
</tr>
</thead>
</table>
| • Annual reports outlining research progress and a critical assessment of training and other needs  
• Annual presentation to peer audience, describing their research progress and their plan for the completion of their project  
• Reflective blog entries optional for SNS  
• A well-structured research notebook, regularly updated and signed | 100% | |
| Result | Pass / Fail | |
**Graduate Studies Form for Modules attached to Structured PhD and/or Research Masters Programmes**

<table>
<thead>
<tr>
<th>Title</th>
<th>Professional Development: Publishing Research and Preparing for the Job Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits (ECTS)</td>
<td>5 ECTs</td>
</tr>
<tr>
<td>Module Places</td>
<td></td>
</tr>
<tr>
<td>Module Code: Please indicate if generic (GS) or specialised</td>
<td>GS510</td>
</tr>
<tr>
<td>Elective Places</td>
<td></td>
</tr>
</tbody>
</table>

**Indicative Module Descriptor:**
The purpose of this module is to prepare PhD students to be successful in publishing in international journals and, ultimately, to obtain a job on graduation. The goal is for the students to have a clear understanding of how to turn their PhD thesis into journal publications by identifying suitable journals, and understanding what reviewers and editors are looking for in manuscripts. They will also gain insights into what they should be doing, over and above their PhD thesis, to allow them to be competitive in the job market. The students will hear from internationally experienced post doctoral students, researchers, lecturers, and professors from across the social science disciplines. These contributors will provide a practical approach to allow the students to learn from their successes (and failures).

**Indicative Learning Outcomes:**
On successful completion of this module, students will:
- understand how to prepare a research publication strategy based on their doctoral dissertation;
- understand how to prepare a manuscript for journal publication;
- understand what journal reviewers are looking for in a manuscript;
- understand how to decide which journal(s) they should target for publication;
- understand how they should deal with reviewer comments;
- understand the job market, and expectations of academic employers both nationally and internationally; and
- have developed a CV and short biography.

**Workload:**

<table>
<thead>
<tr>
<th>Class Contact</th>
<th>24 hours, separated into four half-day sessions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar-based delivery</td>
<td>The information will be delivered in the style of a seminar and interactive manner with students actively participating. Students will also be required to make presentations.</td>
</tr>
</tbody>
</table>

**Specified Assignment(s)**

- Individual assignment:
  - Develop a research publication strategy based on their doctoral dissertation
  - Identify two journals to target for publication. Provide evidence of why these journals are suitable, and develop an outline (1,000 words) of a potential manuscript to submit to the journal.
  - A detailed review of an academic manuscript as would be carried out by a journal reviewer (1,500 words)
  - The development of an academic CV.
  - A short biography (<500 words) on the student similar to what is included in a grant application.

**Autonomous Student Learning (please specify)**

- Example: Pre-Practical Reading
  - Join in class discussions and make class presentations
<table>
<thead>
<tr>
<th>Assessment(s)</th>
<th>Type</th>
<th>% of marks</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Assignment (as described above –</td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Specified Assignment)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result</td>
<td></td>
<td>Pass / Fail</td>
<td></td>
</tr>
</tbody>
</table>
## Graduate Studies Form for Modules attached to Structured PhD and/or Research Masters Programmes

<table>
<thead>
<tr>
<th>Title</th>
<th>Engaging with the community: research, practice and reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits (ECTS)</td>
<td>10</td>
</tr>
<tr>
<td>Module Places</td>
<td>15</td>
</tr>
<tr>
<td>Module Code:</td>
<td>GS512</td>
</tr>
<tr>
<td>Elective Places</td>
<td></td>
</tr>
</tbody>
</table>

### Indicative Module Descriptor:
This module is designed as an experiential learning opportunity for Structured PhD research students. In the course of this module they will apply their discipline-specific knowledge/skills to the design, conduct and reporting of a community-engaged, applied research project. Working with the module team, each student will devise an individualised learning experience. The module is intended to accommodate a range of interests, from those students whose doctoral research is in social research through to students carrying out theoretical or laboratory-based projects.

Research topics/themes/problems for a research project may be identified by a community partner, by the individual student/s, by a multidisciplinary team, by relevant academic or research staff/units/groups within the university, or in collaboration with Community Knowledge Initiative (CKI).

Research students will have a shared learning experience through a series of preparatory and reflective seminars, organised on a multidisciplinary basis. Through seminar work, students will report on progress, share their learning, discuss opportunities and challenges, and identify their own learning needs. This reflective space will help link together participants working on potentially different projects in varied settings.

The module – and the accompanying seminars – will be facilitated by academics, researchers and community partner representatives (e.g., COPE Galway), working together to support students in learning about and carrying out community-engaged research. This professional input will combine expertise and experience in applied, collaborative and participatory research methods.

This module has been developed by a multidisciplinary team within NUI Galway as one of the intended outcomes of the Community Engaged Research in Action (CORA) project. The availability of this module to doctoral student and community partners, as a credit-bearing element of a Structured PhD programme, will contribute to the realisation of the civic engagement envisioned by the university as part of the student experience.

The module may be taken by Structured PhD or Research Masters level students, with the agreement of the relevant supervisor and/or programme director.

### Aims of the module
The module aims to give students the opportunity to:
- Enhance their personal effectiveness, capacity for innovation and professional competence thus increasing their employability
- Develop research skills in an applied, real-world setting, in response to an identified research need
- Apply discipline-specific knowledge and skills to a research project
- Work collaboratively with a community partner and/or as part of a research team
- Work with people from other disciplines in solving research problems
- Develop a deeper insight into the impact of socio-economic conditions and public policy on real world issues
- Scrutinise and reflect on social norms and their own role as agents of change in society

### Indicative Learning Outcomes:
On successful completion of this module, students should be able to;
- Critically evaluate the concept, nature, purpose of community engagement and be cognisant of
- Understand how collaborative and participatory methods can inform research practice, through the process of data collection, interpretation and representation
- Engage appropriately with partners in a community-engaged research project
- Conduct a research needs analysis with a community partner/s or contribute to a project already identified
- Plan, conduct, present and evaluate a research project in a collaborative manner
- Reflect critically on their own research practice, doctoral research and future professional practice
- Apply their disciplinary knowledge and skills to real world research inquiry
- Critically consider ethical issues that arise in real world research

**Workload:** Total of 200 hours for 10 ECTs module

<table>
<thead>
<tr>
<th>Class Contact:</th>
<th>20 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar attendance (A reflective space)</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Workshop:</th>
<th>0-20 (as necessary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in specific workshop/s, as per individual learning needs/skills gap</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specified Assignment(s)</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio</td>
<td></td>
</tr>
<tr>
<td>Presentation</td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Autonomous Student Learning:</th>
<th>110-130</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negotiating with community partner</td>
<td></td>
</tr>
<tr>
<td>Group meetings with members of a team</td>
<td></td>
</tr>
<tr>
<td>Planning the research design</td>
<td></td>
</tr>
<tr>
<td>Conduct of project using collaborative and/or participatory methods</td>
<td></td>
</tr>
<tr>
<td>Preparation for presentation of outcomes</td>
<td></td>
</tr>
<tr>
<td>Self appraisal and preparation for evaluation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment(s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>To be jointly assessed (as appropriate and as agreed) by the module facilitator/s, research team members, thesis supervisor and community partner.</td>
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</tr>
</tbody>
</table>

1. **Portfolio**
   - Including, for example,
     - Log of research activities (individual and/or group)
     - Reflective journal
     - Evidence of research practice

2. **Presentation**
   (Oral, written, poster, or other medium as appropriate)
   Individual or group presentation of research outcomes - process and/or product as appropriate.

3. **Evaluation**
   Participation in evaluation by partners to research process
   Including self/peer/group/community partner/external evaluation, as appropriate.

<table>
<thead>
<tr>
<th>Type</th>
<th>% of marks</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in reflective seminars</td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td>Assessment: portfolio, presentation</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Participation in evaluation process</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Result**
Pass 65% / Fail
PROFESSIONAL SKILLS - THESIS COMPLETION AND CAREER DEVELOPMENT

Module code: GSS3
Credits: 5
Semester: 2
Department: NIRSA
International: 

Overview

Location: AFF Seminar Room, lontas Building.

Note: This module meets the requirements for GSS3 and GSA3; it will take place once during this academic year (in January 2012) and will not be repeated in semester 2. Minimum enrolment 10 students.

Module objectives:
The module will prepare students for the completion and defence of their thesis and life after their PhD, including career strategy, disseminating their work, applying for scholarships and jobs.

Module content:

Viva preparation: Aims and purpose of the Viva—Modes of advance preparation—Responding effectively to questions about research—Dealing with critics and reviewers—including mock vivas

Dissemination of dissertation: Locating projects in a wider field of scholarship and learning—Developing a sense of the scholarly and social value of your research project—Post-doctoral publications: submitting manuscripts or proposals to publishers and preparing articles for scholarly or other journals.

Career strategy: Post-PhD—Career paths—Research and teaching careers—Applying for postdoctoral scholarships—Research grant writing and applications—CV Writing and cover letter writing. Job Interviews

Learning Outcomes

On successful completion of the module, students should be able to:

- Be prepared for the completion and defence of their thesis and life after their PhD, including career strategy, disseminating their work, applying for scholarships and jobs

Teaching & Learning methods

- 18 hours (blocked into 3 full days) of workshops and practicals

Delivery methods

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

http://www.nuim.ie/courses/?Target=MODULE&Mode=VIEW&MODULE_CODE=GSS3&LINK=
Networking both internally and externally

Researchers can develop their networking skills by contacting other colleagues, both within and outside of the university, and PI/Mentors may have some useful contacts that they would be willing to pass on. Talking to other researchers in the university about their role and the type of work in which they are involved is a useful way of understanding work in different contexts, and can help researchers make better informed decisions about potential moves to other environments. The opportunity to discuss experiences and exchange knowledge, insights and perspectives is a useful exercise and helps people to see challenges differently and even come up with creative solutions to move a situation forward.

Benefits of networking

Networking internally - raise your profile, source new project opportunities, strengthen relationships with stakeholders and gather information on requirements
Networking externally with peers - exchange of best practice knowledge, learn new methods, stay abreast of latest news or find knowledge or contacts to help a colleague.

How do they operate?
Networks are operated on an informal basis and are self managed so the ground-rules, procedures and areas for discussion are agreed by the network participants. The network can operate by email or face to face and as well as a forum for discussion and problem solving, it allows people a sounding board to test out new ideas in front of a cross disciplinary audience. It is recommended that in order to build and nurture interpersonal connections that the network meets face to face at least once every three months. However the idea is not to become too prescriptive so that the network is something that participants choose to maintain rather than it becoming an onerous obligation.

UCD, Belfield, Dublin 4, Ireland. Tel: 353-1-7167777
UCD Research Skills & Career Development
Forbairt Ghairme & Taighde Scileanna UCD

Project Management in the Research Context

Objectives:

To

- Understand the difference between a ‘project’ and ‘on-going activities’
- Understand relationships between project components (resources, duration and scope)
- Develop a project plan
- Understand the concept of a ‘critical path’ and how changes in schedules and resource allocation affect the overall duration of the project
- Identify the key stakeholders for your project and understand their influence and potential impact on a project
- Identify and manage risk in your project including the risks related to the uncertainty of research outcomes
- Have an awareness of the key project management tools you can use to manage your project.

Content
- Project Concept
- Defining the project
- Project Planning
- Project Implementation
- Closing the Project
- Project Management Tools
- Comparing commercial and academic research
- Practical Scenarios

Duration:

Self Managed

Delivery Method:

Online Resource

How to Access?

Please email researchcareers@ucd.ie for access to this resource.

UCD, Belfield, Dublin 4, Ireland. Tel : 353-1-7167777

http://www.ucd.ie/researchcareers/trainingdevelopmentopportunities/projectmanagementintheresearchcontext/
UCD Research Skills & Career Development
Forbairt Ghaire & Taighde Scileanna UCD

Project Management for Researchers

Objectives:

To:

- To discuss the relevance of project management in the business environment
- Apply fundamental Project Management tools to real world projects
- Carry out project progress and performance measurement and evaluation
- Evaluate projects within your organisation
- Demonstrate an understanding of the elements of a Project Management Methodology.

Content

- Introduction to Project Management - Setting the scene
- Methodology
- Estimating & Costing
- Planning and monitoring a project
- Risk Management
- Leadership & Stakeholder Management
- Managing Project Teams

Duration:

2 days

Delivery Method:

Training Programme

How to Book?

Should you be interested in attending this programme please email researchcareers@ucd.ie. Please refer to the Events Calendar for scheduled dates.

Please note that as this programme runs during the day it is important that you agree your attendance on this programme with your PI/mentor/supervisor prior to attending.

UCD, Belfield, Dublin 4, Ireland. Tel : 353-1-7167777

http://www.ucd.ie/researchcareers/trainingdevelopmentopportunities/projectmanagementforresearchers/
PITCHING YOUR RESEARCH TO INCREASE FUNDING POSSIBILITIES

Module duration: This course consists of 2 half days and 1 full day

Aims of this course:

- to develop a common language to speak to potential investors or business partners
- to convey the excitement and value of their research
- to understand and fulfil the expectations of industry and external stakeholders
- to create/improve a powerful power point presentation of their research for industry

At the end of this course, participants will be able to:

- identify and articulate what makes DCU different
- develop a structure and create openings and closings for presentations
- develop the body of the presentation including facts/benefits and evidence to support the proposal
- create a power point presentation for DCU yet allowing each participant to deliver their presentation in their own style

Target Audience:

This workshop will benefit both academic staff and experienced researchers who are currently involved in or will be involved in making oral presentations on their research to potential investors.
GRANT WRITING

Module duration: 1 day

Target Audience:
Researchers of any discipline who wish to apply as principal applicants for individual and/or project funding.

Aims of this course:
To cover aspects of grant writing that are directly relevant to grant proposals. The areas covered will include:
• assessment of the funding opportunities
• institutional procedures and budget preparation
• common mistakes
• proposal content
• reviewers
• collaborators
• strategic background to a proposal
• CV preparation
• what to do when rejected

At the end of this workshop, participants will have learned:
• important principles of writing successful grant applications in line with DCU and funding body procedures in order to succeed in competitive funding calls.
The Austrian Federal Government presented in March 2011 a strategy for research, technology and innovation involving several Ministries, the social partners and crucial stakeholders. [Link to Broschüre FTL Englisch WEB.pdf]

The strategic plan heads for “Realising potentials, increasing dynamics, creating the future: Becoming an innovation leader”. This clear statement in favour of promoting research, technology and innovation defines therefore the strategic operative goals, the action priorities and the support measures that are relevant to the implementation over the next decade. The need for adequate human resources in research, technology and innovation has been identified along with the mobility of researchers and their career development as a key challenge.

Top performances in research are definitely the basis for successful cooperation between science, business and society. This has evidently consequences on higher education and research institutions. An excellent situation for universities, universities of applied sciences, and non-university research institutes are seen as the basis of the innovation system. They have to work within excellent framework conditions and be sufficiently financed to optionally perform their tasks in research and instruction. Attractive science careers at the international level shall be the prevalent standard at Austria’s universities. The development of human resources is therefore targeted by higher education programmes but seldom formal or specific criteria directly related to transferable skills are mentioned in the curricula. Still several programmes especially focusing on transferable skills have been set up by different stakeholders.

**Structured doctoral programmes (“Doktoratskollegs”)**

The Austrian Science Fund (FWF) offers a programme for the funding of structured doctoral programmes (“Doktoratskollegs”) at research institutions that are entitled to award a doctoral degree. These are training centers for highly qualified doctoral candidates from the national and international scientific community. A “Doktoratskolleg” is formed as a result of a joint initiative by several scientists or scholars whose research is of internationally leading standard, and is based on a clearly defined research programme. The doctoral programmes have close cooperation with an existing large-scale research programme. Interim reviews every four years decide on continuation of funding of the doctoral programme, with a maximum length of 12 years. Doctoral candidates are employed on work contracts with full social coverage, the positions are advertised internationally. The programmes provide for a stay abroad and offer transferable skills training.

**Transferable skill category: Research competences – Grant application writing skills:**

Funding organizations like the Austrian Science Fund (FWF) and the Austrian Research
Promotion Agency (FFG) provide/offer seminars on proposal writing to enhance the writing skills of PhDs and postdocs.

The "fForte Coaching" programme offered by the BMWF is a 2-semester course aimed at helping women put together successful grant proposals. It also provides information on various sources of funding as well as personality development, among other things, in order to increase the proportion of women in a range of research funding programmes.

The Austrian Agency for International Cooperation in Education and Research (OeAD-GmbH) provides guidelines recommendations and seminars for the elaboration of grant proposals.

The programme LISA (Life Science Austria) promotes since 1999 the creation of start-ups in the area of life sciences and the commercial application of research results. Specific qualification activities within this programme are aimed at researchers and students as potential entrepreneurs in the life science sector.

Examples of special activities:
- Business seminars on specific key issues (team building, leadership, legal issues,...)
- Training modules on business in life science courses as part of the University of Vienna and the University of Applied Sciences of Vienna

An international Business Plan Competition BOB "Best of Biotech" is designed to attract in particular the participants from universities and other research institutions to encourage entrepreneurial potential in life science research and to exploit research results in a commercial way.

On a small scale the publicly funded organization "dialog<>gentechnik" every year holds a competition for scientists/students to write press releases as part of their remit in science communication.

The 2011 started programme "Building Research Capacity in Industry has been designed to provide targeted structural funding measures to support companies in the systematic development and qualification of their research and innovation staff. The programme thereby also aims at promoting cooperation between companies and tertiary education and research institutions and to enhance the integration of industrially relevant research fields. Universities, universities of applied sciences and other educational institutions and intermediaries can be seen as an indirect target groups (by conducting these training programmes). A goal of the programme is a stronger anchoring of business-relevant teaching and research at universities and universities of applied sciences as well as the increase in sectoral mobility.

The programme includes qualification seminars (training of employees of Austrian companies; focus on SME; 5-15 working days); qualification networks (medium- to long-term build-up of R&D expertise in Austrian companies together with universities, universities of applied sciences and other educational and research institutions located in Austria; six months to two years); and tertiary level courses (courses of universities or universities of applied sciences together with companies in industry driven topics; four years).

The promotion of collaboration between science and business has given rise to a broad spectrum of successful institutions alongside universities and firms in Austria. Especially in the context of the workplace experience for transferable skills acquisition some
temporary implemented institutions (based on specific programmes) have to be mentioned, since they are playing an important role in technology transfer between science and industry. These programmes make an important contribution to the development of transferable skills especially in workplace experience. Depending on particular objectives and basic parameters of the underlying programme these collaborations between research (universities, and other research institutions) and industry can be aligned up to a 10 year period. In doing so a broad spectrum of researchers (diploma and doctoral candidates, post-docs,...) may acquire a wide range of transferable skills and relevant experience with participating industry partners. Examples of these temporary implemented Institutions in Austria are:

- Competence Centers for Excellent Technologies – COMET
- Christian Doppler Laboratories
- Josef Ressel Centres
- Laura Bassi Centres of Expertise
- Research Studios Austria – RSA
<table>
<thead>
<tr>
<th>Austria</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status</strong></td>
<td>Student / Grant holder / Employee</td>
<td></td>
<td>Grant holder / Employee</td>
<td></td>
</tr>
<tr>
<td><strong>Overview</strong></td>
<td>Structured doctoral training with transferable/generic skills and advanced disciplinary courses</td>
<td>Access to R1 courses but also access to continuous professional development opportunities through HR</td>
<td></td>
<td>Continuous professional development opportunities through HR</td>
</tr>
<tr>
<td><strong>A. Research knowledge and skills</strong></td>
<td>Subject specific courses available organized by the HEI: Two year course for socio scientific vocational qualification <a href="http://www.soqua.net">www.soqua.net</a> (A1, S1, LS, ES) See annex; Structured doctoral programmes of the Austrian Science Fund (A3, S1, LS, ES) <a href="http://www.fwf.ac.at/en/projects/doctoral_programs.html">http://www.fwf.ac.at/en/projects/doctoral_programs.html</a></td>
<td>Two year course for socio scientific vocational qualification <a href="http://www.soqua.net">www.soqua.net</a> (A1, S1, LS, ES) See annex;</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B. Personal effectiveness</strong></td>
<td>Two year course for socio scientific vocational qualification <a href="http://www.soqua.net">www.soqua.net</a> (A1, S1, LS, ES) See annex; Writing skills; grant application skills seminars by the Austrian Science Fund (FWF) and the Austrian Research Promotion Agency (FFG) (A2, S2, LS) <a href="http://www.fwf.ac.at/de/public_relations/fwf-informationsveranstaltungen/cws-index.html">www.fwf.ac.at/de/public_relations/fwf-informationsveranstaltungen/cws-index.html</a> Seminars for the elaboration of grant applications (A2, S2, LS) <a href="http://www.oead.at">www.oead.at</a></td>
<td>Two year course for socio scientific vocational qualification <a href="http://www.soqua.net">www.soqua.net</a> (A1, S1, LS, ES) See annex;</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C. Research management</strong></td>
<td>Two year course for socio scientific vocational qualification <a href="http://www.soqua.net">www.soqua.net</a> (A1, S1, LS, ES) See annex;</td>
<td>Two year course for socio scientific vocational qualification <a href="http://www.soqua.net">www.soqua.net</a> (A1, S1, LS, ES) See annex;</td>
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</table>
Lehrgang 2012–2014
Sozialwissenschaftliche Berufsqualifizierung

soQua
Postgradueller Lehrgang
2012-2014
für die internationale
sozialwissenschaftliche
Forschung

Praxisnahe und berufsbegleitende Weiterbildung auf
höchstem Niveau

soQua ist eine gemeinsame Initiative der führenden außeruniversitären
Institute SORA, FORBA und ZFB. Seit dem Jahr 2006 bietet soQua praxisnahe
und berufsbegleitende Weiterbildung auf höchstem Niveau und hat sich als
eine zentrale Schnittstelle zwischen den Universitäten und der Berufswelt
established.

Der postgraduale Lehrgang 2012-2014 für die internationale sozialwissen-
schaftliche Forschung wird vom Bundesministerium für Wissenschaft und
Forschung im Rahmen des Programms Graduiertenförderung Geistes-, Sozial-
und Kulturwissenschaften finanziert. Die Teilnahme ist kostenlos.

Er umfasst in fünf Modulen 32 Seminartage. Bewerbungen können bis 30. Juni

soQua bietet:
- Schlüsselkompetenzen und Know-how für die Berufspraxis in Anfragen-
wie Auftragsforschung: empirische Methoden, Projektmanagement, euro-
 päische Forschung, Ergebnisverwertung und Anwendungsorientierung.
- Erfahrenen Praktikberater über die Schallern schrumpfen: erprobtes Know-
how für Projektbildung und -management; quantitative und qualitative
Methoden unter realen Bedingungen, Knopf- und Suchen. Akquisition und
Verwertung in der Auftragsforschung.
- Neue Betrachtungs- und berufliche Perspektiven: soQua bietet Lernen
und Austausch in kleinen Gruppen und vernetzt TeilnehmerInnen mit Referen-
typen aus zahlreichen deutschsprachigen Forschungsinstanzen.
- Vertiefung universitärer Ausbildung und Lernen von- und mit-Theorie;
soQua erweitert die diskursiven akademischen Ausbildungsräume unser-
und feministische Reflexionen in Forschung und Lehre.
- Schwerpunkten und Arbeitsmethoden: Erfahrung, Statistik, qualitatives
Analyse, internationaler Datensatz, Evaluationsforschung und mehr.

Kontakt und Durchführung von:
SORA
FORBA
ZFB

Veranstalter
SORA
Institute for Social Research and Consulting
SORA gehört zu den führenden privaten sozialwissenschaftlichen Institute in Bayern
und verbindet Exzellenz in qualitativem und quantitativem Forschungsverfahren mit hoher Anwendungsorientierung.
SORA bietet für öffentliche Einrichtungen sowie für Unternehmen, Stiftungen, Verbände, gemeinnützige und politische Organisationen die Möglichkeit zu einem professionellen und nachhaltigen Beitrag zu ihrer beruflichen Weiterbildung.

FORBA
Forschungs- und Beratungsstelle Arbeitwelt
FORBA ist ein interdisziplinär zusammengesetztes, internationales Gesamtforschungs- und Beratungsgremium für die Wissenschaften der Arbeitwelt. Das Institut ist an den Themenbereichen Arbeit, Technik und Senden in der Gesellschaft, Bildungssysteme und Bildungspolitik beteiligt.

ZFB
Zentrum für Soziale Innovation
Das ZFB bündelt die sozialwissenschaftlichen Institute der Universität, Bielefeld, Netzwerksozialen Forschung und Sozialforschung. Thematische Schwerpunkte sind: Arbeit und Arbeitsmarktforschung, Forschungspraxis und Forschungsstrategien.
TeilnehmerInnen

sogar richtet sich an

- junge WissenschaftlerInnen in der Phase des Berufseinstiegs
- Graduierte Universitätsarbeitsstätte, die in Forschungsprojekten arbeiten
- Graduierte MitarbeiterInnen von Forschungseinrichtungen, die praktorientierte Weiterbildung und neue Entwicklungsmöglichkeiten suchen

Teilnahmekriterien

Akademische Graduierung

Das Programm richtet sich an Graduierte bis 8 Jahre nach Studienabschluss oder Forschungsstelle. Bis 3 Jahre nach der Promotion. Personen ohne eine entsprechende akademische Graduierung können nicht aufgenommen werden.

Berechtigter TeilnehmerInzahl

In den Lehrgang werden 40 TeilnehmerInnen aufgenommen. Die TeilnehmerInnen werden mittels eines Begutachtungs- und Juryverfahrens ausgewählt.

Bewerbung


- Folgende Unterlagen sind für die Bewerbung notwendig:
  - elektronisches Bewerbungsformular
  - Lebenslauf mit wissenschaftlichem Werdegang und gegebenenfalls Publikationsliste
  - ca. 1-seitige Motivationsschreiben
  - Empfehlungsgeschriften der entsprechenden Institutioen (ArbeitsgeberInn/ProjektleiterIn/AuftragnehmerIn/InstitutsleiterIn etc.)
  - Kopien der Hochschulabschlusszeugnisse, aus denen die Graduierung hervorgeht

Lehrgang 2012–2014

Oktober 2012–April 2013

Basisseminar → Seite 0–15
Zu absolvieren sind alle Seminare aus Modul 1 und Modul 2 (je 8 Tage = 16 Tage).

April 2013–September 2013

Wahlseminar → Seite 17–28
Auszuwählen sind je 3 Seminare aus Modul 3 und 2 Seminare aus Modul 4 (je 2 Tage = 10 Tage).

Jänner 2014–Jänner 2014

Themen-Cluster → Seite 20–32
Auszuwählen ist einer von drei Schwerpunkte aus Modul 5 (6 Tage).

Oktober 2014–Jänner 2014

Zusätzlich zu den Anwesenheit in den Seminaren sind Vorbereitungsaufgaben einzulernen. Diese werden u.a. über eine Internet-Plattform abgewickelt.

Jänner 2014–Mai 2014

Am Ende des Lehrgangs ist eine Abschlussarbeit im Umfang von ca. 30 Seiten zu verfassen.

Zertifizierung

Der Lehrgang umfasst eine Präsenzaufentzeit von 32 Seminatagen sowie das Verfassen einer ca. 30-seitigen Abschlussarbeit. Für Seminare und Cluster sind Vorbereitungsaufgaben durchzuführen.

Nach erfolgreicher Abschluss des Lehrgangs erhalten die TeilnehmerInnen ein Zertifikat, das die Teilnahme am Lehrgang bestätigt.

Mit der Absolvierung des Lehrgangs wird kein akademischer Titel erworben.

Das gesamte Lehrgang zählt 40 ECTS-Punkte. Einzelne Seminare und Module werden für Studium an Universitäten angerechnet. Die konkrete Anrechnungs- klaus ist bei der jeweiligen Universität anzufragen.

Team

Die Lehrgangsleitung besteht aus:

- Univ.-Prof. Dr. Jörg Flecher
  Wissenschaftlicher Leiter bei FORBA
- Univ.-Prof. Mag. Dr. Josef Wachtmeister
  Wissenschaftlicher Leiter des Zentrums für Soziale Innovation (ZSI)
- PD Dr. Gisela Vollmar
  Teamleiterin für "Arbeit, Organisation und Internationalisierung" bei FORBA
- Günther Ogne, MA
  Geschäftsführender wissenschaftlicher Leiter von FORBA
- Mag. Dr. Klaus Schuh
  Geschäftsführer des Zentrums für Soziale Innovation (ZSI)

Jedes Seminar wird von einer/einem Seminarexpert/innen geführt.

Astronomi wird von den in den jeweiligen Lustaussichtsplanen betreut.

Astronomi ist für die Inhaltliche Entwicklung und die Umsetzung der Seminare sowie für die Auswahl der Vortragenden verantwortlich.


Ein aktueller Überblick findet sich auf der Homepage www.scpo.net.
Anwendungsorientierte Forschung
und Verhaltensrichtlinien

Ziele
- Das Seminar soll folgende Befähigungen vermitteln bzw. stärken:
  - Unterscheidung von Projekt- und Forschungsprojektplan
  - Kenntnis und Identifikation geeigneter Projektplanungsinstrumente
  - Kenntnis der Prüfungs- und Abgabe- und Aufgaben des Projektleiters
  - Praktische Übung in der Umsetzung von Forschungsprojekten

Inhalt
- Aktuelle Entwicklungen in Wissenschaft und Forschung allgemein, besonders in der internationalen sozialwissenschaftlichen Forschungspraxis
- Die gegenwärtige Verwendung von Forschungsergebnissen im Umgang von Unternehmen und Organisationen
- Methodische und praktische Aspekte der Umsetzung von Forschungsprojekten

Themen

ECTS: 2
Seminarverantwortliche: [Name]
Veranstalter: [Name]

Profiiltöschung, Budgetierung und Controlling

Ziele
- Einführung in die theoretischen Grundlagen der Projektfinanzierung
- Analysephase - Planung des Projekthaushalts (Grundsatzschritte, nationale Regelungen)
- Bilanzerstellung, Abschlussprüfung
- Vorgabe, Vorschlags- und Aufgabenverteilung
- Abrechnung von Projekten (finanzielle, organisatorische, abschließende Schritte)

Inhalt
- Umgang mit Finanzierungsinstrumenten
- Methoden der Projektfinanzierung
- Rechnungswesen und Buchhaltung
- Bilanzierung und Abschlussprüfung

Themen
- Finanzierungsmöglichkeiten von Forschung und Innovation durch die EU
- Budgetierung und Projektabwicklung (Prozessplanung, Kostenmanagement, Finanzabwicklung, Haushaltsplanung, Budgetvorgabe, Aufwandsverrechnung)
- Projektfinanzierung (finanzielle und organisatorische Aspekte, Risikomanagement)

ECTS: 2
Seminarverantwortliche: [Name]
Veranstalter: [Name]
Wissenschaftskommunikation

Ziele
Die TeilnehmerInnen wissen, wie wissenschaftliche Forschung und ihre Ergebnisse für unterschiedliche Zielgruppen außerhalb der wissenschaftlichen Community (AuftraggeberInnen, Medien, etc.) adressatenorientiert und daher effektiv aufbereitet werden können. Sie lernen Anregungen für die Öffentlichkeitsarbeit sowie die Vorbereitung auf Interviews und die Kommunikation mit Journalisten.

Inhalt
- Marketing und PR-Grundlagen und Nutzen für ForscherInnen
- Adressatenorientierte Kommunikation (Übungen anhand eigener Themen)
- Was sustainability wollen, oder: Was zufriedenstellendes Darstellen von Diplomarbeiten ausschließt
- Das Interview rund um Anträge und die Kommunikation mit FördergeberInnen
- Anregungen zum optimalen Text (Presseinformationen, Online-Texte, Executive Summaries etc.) und zur Vorbereitung und Vortragender Präsentationen
- Praxis- und Instrumente für eine zeitgemäße Öffentlichkeitsarbeit, neue/alter Umgang mit Journalisten

ECTS: 2

Seminare/vorlesung: Dr. Frank Oberhuber (SSFA)
Verantwortliche Mag. Christoph Niederer (SSFA), Dr. Frank Oberhuber (SSFA), Mag.a der Flieger

Quantitative Forschungsmethoden

Ziele
- Einsatz quantitativer Methoden in der empirischen Sozialforschung
- Kenntnis ausgewählter Methoden, mathematisch-statistische Grundlagen, Anwendung auf konkrete Forschungsfragen
- Eigentliches Anwenden der Methoden mit statistischer Software
- Grundlagen, Tips and Tricks für die Durchführung von Umfragen (Studienplanung, Fragebogengestaltung, Durchführung, Auswertung)

Inhalt
- In diesem Seminar werden die Grundzüge der quantitativen Sozialforschung sowie ausgewählte Methoden vermittelt. Die Auswahl der Methoden erfolgt dabei aus Planung und Durchführung quantitativer Erhebungen geleg (einschließlich): Schwerpunkt ist dabei das Erkennen ausgewählter quantitativer Methoden, die in der empirischen Sozialforschung häufig zum Einsatz kommen. Das Seminar wird sich so weit wie möglich an konkrete Forschungsfragen orientieren.

Themen
- Grundlagen des quantitativen Forschens/Grundlagen
- Elemente des Surveydesigns: Stichproben, Erhebungsmethoden, Fragebogengestaltung, Durchführung, Vornahme von häufigen Fehlurteilen in der Datenanalyse
- Überblick über gängige Statistik-Software, Vor- und Nachteile der verschiedenen Packages (SPSS, STATA, R)
- Tips und Tricks für Datenerhebung und Verarbeitung
- Mathematisch-statistische Grundlagen, Voraussagen anhand der Daten
- Varianz, Kovarianz und Korrelation als Basis für höhere Verfahren
- Überblick über ausgewählte höhere Verfahren (z.B. Regression, Fallattributanalyse, Strukturgleichungsmodelle)
- Einsatzfälle, Forschungsfragen

ECTS: 3

Seminarverantwortliche: Mag. Christoph Niederer (SSFA)
Verantwortliche: Mag. Christoph Niederer (SSFA), Mag. Katharina Enzler (CSE), Mag. Christoph Niederer (SSFA), M. Sc. Wiener, Mag. Martina Leitner (SSFA), Biso Das Ziegler (Universität Wien)

Basisseminare

Module 2
Methodische Grundlagen angewandter Sozialwissenschaften


In den Seminaren 2.1 "Qualitative Forschungsdesign" und 2.2 "Quantitative Forschungsdesign und Projektkonzeption" werden die Methodenlehre, empirische Theoriebildung und Methodologie der Forschung thematisiert. Die Seminare fördern das methodische Denken der Studierenden.

Dieses Modul verfolgt das grundsätzliche Ziel, die TeilnehmerInnen in die Lage zu versetzen, für ihr wissenschaftliches Werkzeug mit einem geringen Anwendungseinsatz eine Forschensarbeit erfolgreich zu gestalten.

Die Basisseminare werden in einem Gruppenveranstaltungskonzept durchgeführt.

Forschungsdesign und Projektkonzeption

Ziele
Die TeilnehmerInnen sollen zur Erstellung eines Forschungsdesigns mit vorangegangenen Rahmen (Einschränkungen aufgrund z.B. Ressourcen oder Ressourcenstand) befähigt werden. Besonderes Augenmerk wird auf die Kombinationsmöglichkeiten unterschiedlicher Forschungsgrößen gelegt.

Inhalt
- Ausgehend von einer Auseinandersetzung mit dem theoretischen Hintergrund zur Erstellung eines Forschungsdesigns wird die Konzeption von sozialwissenschaftlichen Forschungsprojekten präzise erarbeitet und reflektiert.

Themen
- Forschungsprozesse unter Berücksichtigung unterschiedlicher Forschungsausweise (z.B. qualitative vs. quantitatives, exploratives vs. konfirmatorisches)
- Überblick über quantitative und qualitative Designs und Methoden
- Überblick der Erhebungsmittel und Kombinationsmöglichkeiten (Was ist für welche Fragestellung geeignet?)
- Qualitative und quantitative Streuungsverstehens

ECTS: 3

Seminarverantwortliche: Mag. Katharina Enzler (CSE)
Qualitative Forschungsmethoden

Ziele
Das Ziel des Seminars besteht darin, die Anwendung ausgewählter qualitativ-erhebungsmethoden zur Erhebung von qualitativen Daten zu lernen und zu reflektieren.

Inhalt
- Präsentation und Einzelstudien der Forschungsmethoden
- Diskussion der methodischen Grundlagen
- Praxisbeispiele

Themen
- Konstruktion von Datenbanken
- Qualitative Interviewtechniken
- Gegenübertragungswirkungen
- Analyse von Textdaten

ECTS: 3
Seminarverantwortliche: Rega Isabell Koppa (Mehrung)
Verantwortliche: Rega Isabell Koppa (Mehrung), Rega Arna Bredjeldur, NEA (DGA)

Evaluation

Ziele
- Verstehen, was Evaluation bedeutet, was Evaluation leisten kann und welche Standards es zu beachten gibt

Inhalt
- Evaluation in der Forschung
- Praxisbeispiele
- Diskussion von Evaluationstheorien

ECTS: 2
Informationen: Die Seminarverantwortlichen werden selbst kurze Referate über Evaluationstheorien ausführen.

Wahlschwerpunkte

Multivariate Analysemethoden

Ziele
- Das Seminar zeigt an Beispiel von drei komplexen Methoden, wie Datenansätze für eine tiefer gehende Verständnisanalyse analysiert werden können
- Die Teilnehmer/innen werden grundlegenden Methoden der multivariaten Statistik begegnen

Inhalt
- Diskussion der multivariaten Methoden
- Übungsaufgaben

ECTS: 3
Information: Empfohlenes Wissen: Wissenskern in Datenanalyse und Stichprobenplanung

Seminarverantwortliche: Elke Schneekloth (DGA)
Verantwortliche: Mag. Christoph Menter (DGA), Günter Koppa, MA (DGA), Mag. Theresia Förstner (DGA)


Wahlschwerpunkte

Fortgeschrittene Methoden der angewandten Sozialwissenschaften

Ziele
- Deshalb sollen die Inhalte der Wahlschwerpunkte durch das Seminar vertieft und weitergeführt werden

Inhalt
- Diskussion der multivariaten Methoden
- Übungsaufgaben

ECTS: 3
Information: Empfohlenes Wissen: Wissenskern in Datenanalyse und Stichprobenplanung

Seminarverantwortliche: Elke Schneekloth (DGA)
Verantwortliche: Mag. Christoph Menter (DGA), Günter Koppa, MA (DGA), Mag. Theresia Förstner (DGA)
Fallstudien als Forschungsstrategie

Ziele
- Erarbeitung möglicher Designs fallstudienbasierter Untersuchungen
- Kennenlernen der Methoden zur Erstellung von Fallstudien sowie der Techniken zur (inter)national vergleichenden Auswertung
- Fallstudien im Kontext von Multi-Method-Designs
- Kenntnis der Möglichkeiten und Grenzen der Methoden

Inhalt


ECTS: 2

Information: Empfohlenes Wahlfeld für den Cluster "Wirtschaft, Arbeit, Organisationen", Seminarempfehlungen: Deutsch und Englisch

Seminarverantwortliche: PD Dr. Ursula Holzgreve (FORBA)
Vertretende: Prof. Dr. Jürg Fischer (FORBA), Prof. Dr. Peter Kuhm (FORBA, N.N.)

21-22. November 2013

Soziale Netzwerkanalyse

Ziele
- Verstehen der Grundzüge der Sozialen Netzwerkanalyse (Centralitäten, Clustern, etc.) und Lernen von Softwares zur Anwendung der Methoden
- Ermitteln von Forschungsfragenstellungen, für die die Anwendung der Methoden geeignet ist und warum, wie sie geeignet ist (Hinterfragen und Analyseren der Ergebnisse
- Erstellen erster Analysen sozialer-analytischer Daten

Inhalt
- Der Seminar zeigt die Methoden und Anwendungsszenarien der Analyse sozialer Netzwerke (SNA) vor. Die Diskussion von zentralen Konzepten, konkreten Beispielen und der Durchführung praktischer Übungen sollen die Möglichkeiten, aber auch die Grenzen der Anwendbarkeit dieser Methoden aufzeigen: Für welche Forschungsfragen kann die Methode angewendet werden, und für welche ist sie nicht geeignet?


Die praktischen Übungen werden den Studierenden Netzkarten erarbeiten, darstellen und analysieren.

ECTS: 2

Information: Empfohlenes Wahlfeld für den Cluster "Innovationen in der Ressourcenwirtschaft'

Seminarverantwortliche: Mag. Mag. Ella Dall (SSS)
Vertretende: Mag. Mag. Mila Suli (SSS), Mag. Alexander Kostredig (SSS), Dr. Bettina Lampert (SSS), Mag. Laura Zech (Babes-Bolyai)

12.-13. Dezember 2013

Inhaltsanalytische Verfahren

Ziele
- Überblick über Formen und Anwendungsmöglichkeiten qualitativ wie quantitativ-inhaltsanalytischer Verfahren
- Kennenlernen der zentralen Verfahren inhaltsanalytischer Forschung (Abstraktion, Diagnose, Prognose, Analytischer Ansatz etc.)
- Bisherige eigene Praxis rationalisieren und Verständnispostleitlinien der Anwendungserfahrung
- Anwendungserfahrungen mit Wissen aufbauen, um Projekte planen und durchführen zu können

Inhalt
Inhaltsanalytische Verfahren spielen in der Forschungspraxis eine große Rolle, gleichzeitig wird gerade diese Methodik häufig unreflektiert verwendet und in ihren Potenzial nicht ausgeschöpft.


ECTS: 2

Information: Empfohlene Wahlfeld für den Cluster "Wirtschaft, Arbeit, Organisationen", Seminarempfehlungen: Deutsch und Englisch

Seminarverantwortliche: Dr. Renata Scharnhuber (SSS)
Vertretende: Dr. Florian Oberhuber (SSS), Mag. Dr. Sabine Taral


Analyse internationaler Datensätze

Ziele
- Überblick über relevante europäische Datenquellen zu Arbeit, Organisation und Lebensqualität: allgemeine Stabilitäts- und Erhebungen, selbst durchgeführte Untersuchungen
- Erarbeiten der Möglichkeiten, sekundäre oder selbst erhobene Daten in der eigenen Forschung einbezogen
- Stellenwert der Analyse internationaler Datensätze in der angewandten Forschung

Inhalt
Im Seminar sollen unter anderem folgende Fragen geklärt werden:
- Welche Datensätze bietet aktuelle Martinik-Studie oder der Labor Force Survey oder 10-2012, also das der Working Conditions Survey, nationale Betriebspanels in verschiedenen Ländern etc.? Was sind die Datenbanken für die Bearbeitung verschiedener Forschungsfragen?
- Was sind relevante Indikatoren für Arbeit, Organisation, Lebensqualität?
- Wie erweitern die Daten die Forschungsmöglichkeiten?
- Wie würden die Daten in den unterschiedlichen Ländern unterschiedlich wie in ?
- Was sind die politischen Konsequenzen der Auswertungen internationaler Verankerungen (Joint Benchmarking, Open Method of Co-operation usw.?

ECTS: 2

Information: Empfohlene Wahlfeld für den Cluster "Wirtschaft, Arbeit, Organisationen", Seminarempfehlungen: Deutsch und Englisch

Seminarverantwortliche: PD Dr. Ursula Holzgreve (FORBA)
Vertretende: Dr. Angela Kümminger oder Christine Frant (OECD), Umweltamt (Büchsen)
Organisationen verstehen

Ziele
In diesem Seminar sollen vermittelt werden, wie man sich mit einem systemischen Blick das Verständnis für Organisationen erwerben, die für die Sozialforschung relevant sind, und welche Konsequenzen sich daraus für die Gestaltung von Projekt-Kooperationen zwischen Organisationen ergeben, die mit unterschiedlichen Logiken operieren.

Inhalt
- Organisationstypen und ihre Besonderheiten (Mehrality, Öffentlich Verwaltung, Projektorganisations, Netzwerke), Systemlogiken, Organisationstheorien
- Wie kann man die Organisation kennen? Relevante Informationen beschaffen, Fragefragen, Hypothesenfindung, Landkarten von Organisationen
- Jede Organisation hat ihre eigene Kultur. Wie wirkt sich das auf die Kooperationsabläufe aus?
- Organisationen als politische Systeme, Mikropolitik
- Forschung und deren Ergebnisse und Interventionen. Was gilt es dabei zu berücksichtigen?

ECTS: 2

Seminarverantwortliche: Maja Ursula Bretenhoffer, MS (sokal)
Vortragende: Maja Ursula Bretenhoffer, MS (sokal), Maja Isabel Kaupa (Melang)
Wissenschaftliches Publizieren und Schreiben (Deutsch und Englisch)

Ziele
Das Seminar soll folgende Befähigungen vermitteln bzw. erweitern:
- Die Relevanz wissenschaftlicher Publikationen für Wissenschaft, Praxis und die berufliche Karriere erkennen und reflektieren
- Publikationsmedien und -möglichkeiten kennern
- Verständlich und genau schreiben
- Kritik üben und mit Kritik umgehen

Inhalt
Zentrale Inhalte betreffen die Art und Weise, wie wissenschaftliche Ergebnisse für die Fachöffentlichkeit gut verständlich, attraktiv zu lesen, nachprüfbar und möglichst leicht zugänglich gemacht werden können. Dazu gehören einerseits die grundsätzliche und kritische Auseinandersetzung mit den eigenen Ergebnissen, die Schreiber selbst, die Auswahl des richtigen Mediums (Überblick und Zugang), sowie die Kommunikation mit Redakteuren, Herausgeberinnen, Rezensenten, Leserinnen und einer weiteren (Medien-)Öffentlichkeit.

Themen
- Wie daute, geschichte und beschaffte ich meine Ergebnisse für mich selbst?
- Was davon ist für welchen wissenschaftlichen Fachpublikation geeignet und interessant?
- Welche Medien gibt es und kommen infrage: Zeitschriften, Buchbeiträge, Buchpublikation, online-Publikation, e-Journals, Sonderbeiträge oder Englisch?
- Wann und zu welchem Zweck soll ich an "Impact-Faktoren" orientieren?
- Die Beschränkungen von Zeit und Geld
- Der "Horror der ersten Seite". Wie die Organisation von Schreibprozessen, Korrekturen und wann und wie Hilfe in Anspruch genommen werden kann und soll
- Zeitgerecht abgeben, Absetzen und Verabschieden von Kritik in einem Peer-Review-Verfahren
- Lesen und Gutsachen schreiben
- Kommunikation nach und neben der wissenschaftlichen Publikation

ECTS: 2

Seminartreffender:
Univ.-Prof. Mag. Dr. Josef Hutteringer
Vortragende:
Hans Roman Buckinger (AT), Dr. Liana Eren (GER), Univ.-Prof. Mag. Dr. Josef Hutteringer (ZWE)

Innovationen in der Wissenschaftsgesellschaft

Ziele
- Zielfrage dieses Clusters ist es, einen theoretischen Diskurs mit dem Seminarthema auszulegen, wobei folgende Schwerpunkte zu gründen werden sollen:
- Vermittlung einer robusten Innovationsherausforderung
- Auseinandersetzung mit aktuellen gesellschaftlichen 'Labels' wie "Wissenschaftsgesellschaft", "soziale Innovation", "open innovation" etc.
- praxisrelevante Ansätze der Forschung, -Technologie- und Innovationspolitik kennenzulernen und kritisch zu hinterfragen
- Entwicklung der Abschlussarbeiten der TeilnehmerInnen dieses Clusters

Inhalt
Schließlich der Industriellen Revolution wird die Bedeutung von Technologischen Fortschritt und Innovation für die Wissenschaft und gesellschaftliche Entwicklung als entscheidend angesehen. Wissen sowie die Zugänge zu Wissen gelten auf individueller, gesellschaftlicher und staatlicher Ebene als Treiber "neues" und "offenes" Vorgehen

Zunächst werden die Entwicklung des Innovationsbegriffs sowie grundlegende Konzepte vorgestellt. Daran aufbauend folgen Verteilungen in speziellen Forschungsfeldern rund um die Themen der "neuen" Forschung, Technologie- und Innovationspolitik in Österreich und der EU sowie ihre Manifestation in Paradigmen, Strategien und Instrumenten.

Soziale Innovation, Konzepte über die wirtschaftliche Verwertungsketten hinaus, Kriterien und Fahrgerechte sowie der "Open-Standard" definiert "Vernetzung" zur Bereitstellung von Innovation

"Aussnandereitung mit der Frage, welches fachliche oder gesellschaftliche Wissen aus sozialwissenschaftlicher Perspektive für die Öffnung der Gegenwartsgesellschaft und ihren durch Ökonomie und Innovation wettbewerbsfähig macht, soll das Ziel von Forschung und Innovation erfüllen.

ECTS: 6

Informationen: trifft die Wahl für: "3.1 Evaluierung", "3.4 Soziale Netzwerke"
Cluster-Vereinsheir: Mag. Dr. Klaus Schiess (ZWE)
Vortragende: Mag. H. Roman Buckinger (AT), Univ.-Prof. Mag. Dr. Josef Hutteringer (ZWE), Mag. Alexander Hinterhauser (ZWE), Mag. Dr. Stephan Schmidt (OEST)

Evidenzbasierte Politikgestaltung

Ziele
- Kennzahlen des politischen Systems und der Entscheidungsfalle zur Wissenschaft
- Kenntnisse der methodischen Grundlagen evidenzbasierten Arbeitens
- Diskussion der Bedeutung von sozialwissenschaftlichen Forschungsdesigns und ihrer Rolle für die Evidenzbasierte Politikgestaltung
- Kommunikation wissenschaftlicher Ergebnisse an AkteurInnen der Politikvermittlung

Inhalt

Ziel der Arbeit ist es, eine Vernetzung der Ergebnisse von einer evidenzbasierten Politikgestaltung und einer evidenzbasierten Politikvermittlung zu erlernen, die auf einen Verständigungsaufbau zur evidenzbasierten Politikvermittlung

ECTS: 6

Informationen: trifft die Wahl für: "3.2 "Relevanz" und "3.5 Soziale Netzwerke"
Cluster-Vereinsheir: Dr. M. Sulzberger (ZWE)
Vortragende: Dr. M. Sulzberger (ZWE), Dr. M. Sulzberger (ZWE), Dr. M. Sulzberger (ZWE)
Wirtschaft, Arbeit, Organisation

Ziele
- Erarbeitung einer Bezugs- und aktueller Belange der sozialwissenschaftlichen Forschung über Wirtschaft, Arbeit und Organisationen
- Diskussion der Anwendung von qualitativen und quantitativen Methoden
- Kennenlernen der jeweilige sozialwissenschaftliche Forschungsbereiche

Inhalt

ECTS: 6

InformationsEmpfehlungen: 5.3 "Fallstudien". 3.5 "Kernkonzepte der Sozialwissenschaften". Jeweils vor ORAK besteht ca. 4-6 Stunden erforderlich.

Co-Veranstalterische: PD Dr. Ursula Holzgrewe (FSRBA)
Veranstalter: PD Dr. Ursula Holzgrewe (FSRBA), Univ. Ass. Dr. Jorg Fiedler (FSRBA), Prof. Dr. Hidro Hartluber (FSRBA), Dr. Dr. Hidro Samuel (FSRBA)
Skills Training, Finland

Eeva Sievi, University of Turku
12.4.2012

WG SKILLS - Researcher Training Gap Template
Version 3rd April 2012

• It has been recognised that a full mapping of skills training is not feasible in the allotted time nor would it be particularly informative.

• The purpose of this exercise is to give an overview of activities in your country focusing on the “big picture”.

• As we agreed at the Working Group meeting on 27th March please begin by attempting to populate the R4 category and work backwards.

• Deadline for response is 17th April in order that we may discuss this at our next WG meeting scheduled for 25th April. The report will then be finalized and sent to the Steering Group for discussion at the next SGHRM meeting on 23rd May.

1. What are the national /regional strategies/initiatives for these levels (R1 to R4)?

• It is clear from our work to date that the question is somewhat misplaced as there is no single national skills agenda for any country.

• This means that the responses to the Deloitte questionnaire will not provide a complete overview. For examples, there are cases where the response has been simply to state that there is no national policy in place. In reality, there are a number of agendas relating to skills for researchers driven by different stakeholders at regional and national level. First, there is broad government policy that may manifest itself through Higher Education and / or Research policy. Secondly, there is the policy set by agencies when they provide funding for skills training. This tends to concentrate at the level of doctoral studies. Thirdly, there is the approach of universities and other organisations that host researchers.

• It would be helpful to outline the various skills strategies at governmental funding agency and university level.
### 2. Example(s) of the main initiative(s) on these particular areas (A to D)?

<table>
<thead>
<tr>
<th>FINLAND</th>
<th>R1 First stage researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Employee/Grant holder</td>
<td>Employee/Grant holder</td>
<td>Employee</td>
<td>Employee</td>
</tr>
</tbody>
</table>
| Overview| • structured doctoral training with transferable generic skills and advanced disciplinary courses  
  • in addition, doctoral holders with employee status have access to professional development opportunities through HR  
  • national recommendations concerning university-level graduate schools at [http://www.aka.fi/Tiedostot/Tiedostot/tiedostot/Doc
tral Training 2012 en.pdf)  
  • example: University of Turku Graduate School ([http://www.utu.fi/graduate__school/](http://www.utu.fi/graduate__school/)), most of the courses are provided in English ("access factor")  
  • links to national doctoral programmes at [http://www.aka.fi/en-GB/A/F/for-researchers/The-research-career/Graduate-schools/](http://www.aka.fi/en-GB/A/F/for-researchers/The-research-career/Graduate-schools/) | • access to R1 courses  
• those with employee status have access to professional development opportunities through HR  
• NBIn most cases professional development opportunities provided via HR units are in Finnish ("access factor")  
• professional development opportunities through Research Collegia (activities mostly in English, not all universities have Research Collegia)  
• examples: [http://www.utu.fi/sivustot/collegia/](http://www.utu.fi/sivustot/collegia/) (Univ Turku), [http://www.helsinki.fi/collegium/english/about_the_collegium/index.htm](http://www.helsinki.fi/collegium/english/about_the_collegium/index.htm) (Univ Helsinki) | • Continuous professional development opportunities through HR  
• NBIn most cases professional development opportunities provided via HR units are in Finnish ("access factor")  
• professional development opportunities through Research Collegia (activities mostly in English, not all universities have Research Collegia)  
• ‘Searching for information’ (databases etc., in Finnish)  
<table>
<thead>
<tr>
<th>B. Personal effectiveness</th>
<th>C. Research management</th>
<th>D. Public engagement and impact of research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Life After PhD seminars</strong> (<a href="http://www.uth.tukimustukijakoulu/LifeAfterPhD_S2012www.pdf">http://www.uth.tukimustukijakoulu/LifeAfterPhD_S2012www.pdf</a>), LS, A2, S2</td>
<td><strong>Labour Law for Research Professionals</strong> (<a href="http://www.uth.tukimustukijakoulu/Labour.html">http://www.uth.tukimustukijakoulu/Labour.html</a>) – a larger course available in Finnish, LS, A2, S2</td>
<td><strong>Popularization of Science</strong> (in Finnish: writing popular articles about one's PhD project and publishing them at a web page 'leveysfi' maintained by the Academy of Finland, writing of the articles guided by the Academy's Communications Specialist) <strong>Work community skills</strong> (in Finnish)</td>
</tr>
<tr>
<td><strong>Academic Presentation Skills</strong> (<a href="http://www.uth.tukimustukijakoulu/AcademicPresentationSkills.html">http://www.uth.tukimustukijakoulu/AcademicPresentationSkills.html</a>), LS, A1, S2</td>
<td><strong>Success in Science Leading</strong> (appears), LS, A2, S2</td>
<td><strong>COLLABORATIONS: Project Management and Business Relations</strong> (see appendix), LS, A2, S2 <strong>Lecturing (A3, S2, ES)</strong> <strong>Correcting Exams (A3, S2, ES)</strong> <strong>supervision, A3, S2, ES</strong></td>
</tr>
<tr>
<td><strong>7 secrets of highly successful PhD students</strong> (<a href="http://www.uth.tukimustukijakoulu/SevenSecretsSuccessfulPhDStudents.pdf">http://www.uth.tukimustukijakoulu/SevenSecretsSuccessfulPhDStudents.pdf</a>), LS, A2, S2</td>
<td>Many courses related to leadership, incl. eg. Early Support - How to Address Difficult Issues (Advice, guidance and coaching for supervisors who in accordance with the Early Support model need to address delicate issues related to work ability of an individual or a work community), LS, A2, S1 (limited for employees)</td>
<td><strong>COLLABORATIONS: Project Management and Business Relations</strong> (see appendix), LS, A2, S2 <strong>Lecturing (A3, S2, ES)</strong> <strong>Correcting Exams (A3, S2, ES)</strong> <strong>supervision, A3, S2, ES</strong></td>
</tr>
<tr>
<td>Turbocharge your writing (appears), LS, A2, S2</td>
<td></td>
<td><strong>supervision, A3, S2, ES</strong></td>
</tr>
</tbody>
</table>

A: The knowledge, intellectual abilities and techniques to do research  
B: The personal qualities and approach to be an effective researcher  
C: The knowledge of the standards, requirements and professionalism to do research  
D: The knowledge and skills to work with others and ensure the wider impact of research  

For full details see [http://www.vitae.ac.uk/researchers/420241/Researcher-Development-Framework.html](http://www.vitae.ac.uk/researchers/420241/Researcher-Development-Framework.html)
Skills Training, Finland

Eeva Sievi, University of Turku
12.4.2012

Notes on completing the template
  1) As agreed at the meeting, please focus first on R4 and work backwards!

  2) Give a brief description of specific courses in the template and accompany with full web references.

  3) If possible please provide a measure of how widely available the course is based on:

Availability
A1 – low available at a single institution
A2 – medium available at a number of institutions
A3 – large available nationally (note that this could also be a type of course that is available nationally, e.g. in Ireland courses on research ethics are available for all PhD students in every university however the course itself is delivered locally)

Access
Is the course available to a select group (S1) of researchers or to the whole community (S2). For example, you would indicate S1 if the course is available only for doctoral candidates on a particular PhD programme.

4) Remember that "training" comes in many forms and is not confined to well-defined courses and professional accreditations. At senior level, it may come through collaborations with academics in other countries on supervision, for example. In this context it is important to recognise that there are two broad forms of skills training:

Learned Skills (LS) acquired through dedicated Teaching & Learning courses (including classroom, workshop and online)

Experiential Skills (ES) acquired through experience (e.g. teaching skills through running tutorials, supervising laboratory sessions and lecturing)

At the PhD level (R1) it would seem that skills acquisition is dominated by Learned Skills while Experiential Skills (ES) dominate for Leading Researchers (R4).

Even if you can only indicate availability and access for a few examples, this would be very helpful. Also if possible distinguish between Learned and Experiential. The emphasis in filling the table is to provide an overview of skills training in your country.

APPENDIX
PEDA-FORUM – THE FINNISH NETWORK OF EXPERTISE IN UNIVERSITY PEDAGOGY AND ACADEMIC DEVELOPMENT

THE BASICS OF THE NETWORK

- **Founded** in 1994
- **Coordinated** by the University of Oulu
- **Financed:**
  - earlier: partly by Ministry of Education (projects, support for yearly organised conference).
  - University of Oulu allocates little resources for coordination
  - The future of the finance is under negotiations

- **Organisational form:** network, all universities are members and have contact persons. No individual members, no membership fee for universities

CURRENTS ACTIVITIES AND TOPICS (utilizing the template by ICED/James Wisdom)

A. **Activities which has been especially successful this year**
The national conference is always a big event and an important forum to meet colleagues. The start of Nordic-Baltic network for Educational Developers in a workshop in Denmark in 14th-16th June was also an important milestone for the Finnish participants (9 from four Finnish universities). Our national network (with mailing list and our journal) also managed to encourage many Finnish participants (23) to attend the ICED Conference in Barcelona.

B. **A particular difficulty our network experienced this year**
The finance of the network and especially the finance of the Peda-forum Journal (2 issues/year) has been a big topic. The next issue will maybe be only an online journal due to economic reasons. On the other hand: an online journal with integration to social web tools can also be an opportunity to create online debate.

C. **In your national higher education context, please consider how you expect your network to develop over the next year**
The organizational form of the network is under consideration. At the moment the network is quite loose and the resources for coordination are very limited. Under these circumstances even the rethinking of our organizational structure is very challenging. It might be that we have to continue with quite low profile.

D. **Qualifications: “Do the HE teachers in your country have to be qualified to teach in universities and colleges - is there a law about it? Or are lecturers and academics only encouraged to gain qualifications?”**
At the moment there is no law about this. In the future one university (University of Jyväskylä) is requiring 10 ECTS course. Some universities have own “strong recommendations” for this. However, all universities are offering courses for lecturers.
Turku Collegium for Science and Medicine (TCSM) and Turku Institute for Advanced Studies (TIAS) are arranging:

TURBOCHARGE YOUR WRITING

Seminar by Hugh Kearns (http://www.flinders.edu.au/profdev/contact/hugh-kearns.cfm)

Friday December 17 at 8.30 – 11.30

Mauno Koivisto Centre auditorium, BioCity, Tykistökatu 6, Turku
Coffee and sandwiches at 8.15

Would you like to know the secret to high output, low stress scholarly writing? In academia it is often assumed that writing comes naturally. However, an overwhelming body of research shows that there are very clear and practical strategies that can greatly increase your writing productivity. This workshop will help you to understand:

* why it's hard to get started
* how we deliberately use distractions to slow down writing
* the principles of quick starting
* how to deal with destructive internal beliefs
* how to set a writing plan and stick to it
* how to set achievable goals by writing in a silo
* how to greatly increase the number of actual words you produce
* how to clarify your thinking, and improve the quality of your work

The seminar is aimed at young research group leaders and young independent scientists.


Further information from the seminar organizers

Turku Collegium for Science and Medicine
Coordinator Satu Alanko
E-mail: satu.alanko@btk.fi
Tel +358 2 333 8042

Turku Institute for Advanced Studies
Coordinator Kimi Kärki
E-mail: kimikarki@utu.fi
Tel. +358 2 333 5890

Turku Collegium for Science and Medicine organizes a one day course
Success in Science Leading
May 12, 2009, Harjattula

PROGRAM
11.15 Bus leaves from Turku to Harjattula
11.45 Lunch
12.45 Jyrki Heino, Professor, Chair of the Board for Turku Collegium for Science and Medicine: TCSM: future prospects
13.00 Sirpa Jalkanen, Professor, University of Turku: Career in science- a practical view
13.30 Mark Johnson, Professor, Åbo Akademi University: Scientific career in Finland as an expatriate
14.00 Petrлина Paturi, Academy Research Fellow, University of Turku: Career in science- a view of a young PI
14.30 Coffee & Tea break
15.00 Tiina Petänen, Academy of Finland: Funding opportunities for young PIs in Academy of Finland
15.30 Solle Haverinen, University of Turku Research and Industrial Services: Practical information on applying research funding: Where to find information, how to apply?
16.00 Paavo Okko, Professor emeritus, Turku School of Economics: Management of science and leadership in science
16.45 Wine & Snacks & Networking
17.45 Bus leaves from Harjattula to Turku

All post docs and beginning group leaders in the field of science and medicine, WELCOME! The course is free of charge.
Please register by May 5 at www.biocity.turku.fi
COLLABORATIONS: Project Management and Business Relations

Monday September 19, 2011, Janus lecture hall, University of Turku

10:00 Opening words
Professor Marja Vauras, TIAS Director
Professor Sirpa Jalkanen, TCSM Director

10:30 Professor Niina Nummela (Department of Marketing and International Business):
Experiences and reflections on research project management and collaboration with industry

11:30-12:30 Lunch

12:30 Professor, Vice Rector Harri Lönnberg: Science push or technology pull

13:30 Director Aki Koponen (Centre for Research and Education CRE, Institute for Competition Policy Studies): Industry collaboration – benefits and challenges for academic Research

14:30 Get together in Janus lobby

Arranged by Turku Institute for Advanced Studies (TIAS) and Turku Collegium for Science and Medicine (TCSM)

Registration at http://www.webropolsurveys.com//S/1417CE4F09B3A6B2.par by Friday September 16 noon

Further information from the seminar organizers
WG SKILLS - Researcher Training Gap Template

1. What are the national/regional strategies/initiatives for these levels (R1 to R4)?
   - **Background**: Germany being a federal state, in all matters of university legislation the Länder are in charge. The universities, however, have a high degree of autonomy with regard to research training. In the Joint Science Conference (GWK), the Ministers and Senators of the Federal Government and the Länder responsible for science and research meet to deal with all questions of research funding, science and research policy strategies and the science system which jointly affect the Federal Government and the Länder. Whilst preserving their own competences, the members of the GWK strive for close coordination on questions of common interest. However, so far they have not issued any common statement or developed a joint approach with regard to skills training.

   - **The universities** are in charge of awarding doctoral degrees. There exist framework regulations for the doctorate at university level, but according to Länder legislation in most cases the University departments decide on the doctoral degree regulations. In November 2011, the German Rector’s Conference (HRK) has adopted a recommendation that universities should establish and support **career services** to act as interface between universities as well as universities of applied sciences and employers and to help prepare the (BA- and MA-) students for working life outside academia. Only its secondary role is to offer continuing training also for more advanced researchers. So far 100 German universities and universities of applied sciences have similar services. According to this recommendation, the career services should offer – in addition to the offers at the disciplinary level – their own courses in “additional qualifications, social and media competencies (key competencies) and soft skills (e.g. rhetoric, presentation technique, time management, coaching for job applicants etc.)”.

   - In April 2012, the HRK published recommendations for the universities on how to **assure the quality of doctoral education**. This paper stipulates that universities offer their doctoral candidates qualification measures for acquiring “academic key competencies as well as teaching and supervisory competencies”.

   - Research funding organisations and research performing organisations
have their own programmes for career development. These programmes also include the provision of skills training. However, most measures are aimed at doctoral candidates; special programmes, especially including skills training, for more established/advanced researchers seem to be (still) rare. Moreover, the individual programmes differ in what they offer with regard to skills training. It is, therefore, difficult to make general remarks.

2. Can you give example(s) of the main initiative(s) on these particular areas (A to D)?
   • D: There might exist some universities which offer skills training also to this target group. There is no consolidated information available. An increasing number of universities have special programmes for female scientists, including more advanced or even leading ones (e.g. University of Duisburg-Essen, ProMent, Career mentoring and coaching for newly appointed female professors, see: [http://www.uni-due.de/imperia/md/content/zfh/flyer_proment.pdf](http://www.uni-due.de/imperia/md/content/zfh/flyer_proment.pdf), available only in German).
   • C: dito. More and more universities (Karlsruhe, see example in appendix or the Science CareerNet Ruhr of the universities Bochum, Dortmund and Duisburg-Essen, [http://www.scn-ruhr.de](http://www.scn-ruhr.de), or the University of Bremen, [http://www.personalentwicklung.uni-bremen.de/Akademisches-Personalmanagement.18.0.html](http://www.personalentwicklung.uni-bremen.de/Akademisches-Personalmanagement.18.0.html), both available only in German) are very active in supporting young research group leaders and offer a wide range of services, including career advise, skills training etc. All in all, it seems that the universities have recognised their responsibility for more advanced postdocs, too, and that they are in the process of building up their support structure for this target group.
   The DFG offers to researchers funded in the Emmy Noether Programme a modular training for career advancement, including courses in time and project management, personnel, finances, communication/marketing etc. The courses in the Young Leader in Sciences programme are provided by the centre for research management (Zentrum für Wissenschaftsmanagement, Speyer – [http://www.zwm-speyer.de/index.php?module=010600&category=13&m=118](http://www.zwm-speyer.de/index.php?module=010600&category=13&m=118), available only in German). Feed back from the researchers confirms that they consider this offer very worthwhile and benefit a lot from it.
   • B: An increasing number of universities provide courses for this group. One would need to investigate this further in order to give a more comprehensive picture.
   • A: Approx 20 to 30 percent of doctoral candidates now write their
disseration in a structured programme, thus benefiting from some skills training (the availability and quality may vary and also whether participation is compulsory or not.). More and more centralized service points in universities offer skills training to PhDs (see Appendix => Graduate Academy Jena, or University Erlangen-Nürnberg, http://www.graduateschool.fau.eu/index.shtml or University of Kassel, http://cms.uni-kassel.de/unicms/index.php?id=prio_kompetenz&L=1 ). It is a prerequisite of DFG funded Research Training Groups that they not only offer high quality research training but supplement this by a systematic study programme. Participation is mandatory. However, what is offered is different for each RTG, they are asked to develop a concept for a tailor-made programme which fit the needs of their specific clientele.

<table>
<thead>
<tr>
<th>R1 First stage researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status</strong></td>
<td>Fellowship holder / Employee</td>
<td>Employees</td>
<td></td>
</tr>
<tr>
<td><strong>Overview</strong></td>
<td>More and more universities have introduced structured PhD programmes. Availability: A1 (rarely A2). Access: S1 (sometimes S2). Besides, there are a number of well-established structured PhD programmes, like the DFG-funded Research Training Groups and Graduate Schools or the International Max Planck Research Schools A1; S1. All the structured programmes encompass transferable/generic skills and advanced disciplinary courses which, however, may vary from one programme to another, also depending on the disciplines and whether they receive external funding (all four domains, all 12 types of skills but in varying degree and composition).</td>
<td>An increasing number of universities have recognizes that younger researchers on the way to getting established can benefit from trainings in transferable skills, too. In some cases, they offer courses especially for this target group, in others they provide access to courses which originally were designed for first stage researchers. There seems to be a trend that the so-called &quot;graduate academies&quot; and the Graduate Schools (whether DFG-funded or not) are considered as institutions for both first stage researchers and young postdocs. However, the services and courses provided differ so that general statements are difficult to make.</td>
<td>Continuous professional development opportunities through HR; small, but increasing number of universities offer dedicated courses for this target group, especially for junior research group leaders and junior professors A1, S1.</td>
</tr>
<tr>
<td>A. Research knowledge and skills</td>
<td>LS-</td>
<td>LS-</td>
<td>LS-</td>
</tr>
<tr>
<td>---------------------------------</td>
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<tr>
<td>every DFG-funded research training group (at the moment ca. 200); see as another example the doctoral programme of the Technical university of Munich, <a href="https://portal.myum.de/qs/qualifizierungsprogramm/puzzleunternehmen/fachlichequalifikation">https://portal.myum.de/qs/qualifizierungsprogramm/puzzleunternehmen/fachlichequalifikation</a></td>
<td>B2, ProUB, University of Bremen programme for research career development, <a href="http://www.uni-bremen.de/forschung/promovierende-postdocs/promotionszentrum-universitaet-bremen-proub/qualifizierungsprogramm/veranstaltungsbeschreibungen/veranstaltung-2012-09-pz.html">http://www.uni-bremen.de/forschung/promovierende-postdocs/promotionszentrum-universitaet-bremen-proub/qualifizierungsprogramm/veranstaltungsbeschreibungen/veranstaltung-2012-09-pz.html</a></td>
<td>B3, plan m. mentoring in science (for female researchers who aim at becoming a professor), <a href="http://www.uni-bremen.de/chancengleichheit/plan-m-mentoring-in-science/programm.html">http://www.uni-bremen.de/chancengleichheit/plan-m-mentoring-in-science/programm.html</a> (in German only)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Personal effectiveness</th>
<th>LS-</th>
<th>LS-</th>
<th>LS-</th>
</tr>
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<tbody>
<tr>
<td>B 1-3, Graduate Academy, University of Heidelberg, <a href="http://www.zuv.uni-heidelberg.de/personalentwicklung/zurprofessur/managementprogramm.html">http://www.zuv.uni-heidelberg.de/personalentwicklung/zurprofessur/managementprogramm.html</a></td>
<td>?</td>
<td>?</td>
<td>?</td>
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</tbody>
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<tr>
<th>C. Research management</th>
<th>LS-</th>
<th>LS-</th>
<th>LS-</th>
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</table>

<table>
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<tr>
<th>D. Public engagement and impact of research</th>
<th>LS-</th>
<th>LS-</th>
<th>LS-</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1, Ex. Helmholtz Academy for leading personnel, <a href="http://www.helmholtz.de/jobs-talente/helmholtz-akademie-fuer-forschungsfeld-physik">http://www.helmholtz.de/jobs-talente/helmholtz-akademie-fuer-forschungsfeld-physik</a> (only in German)</td>
<td>D1, Ex. Helmholtz Academy for leading personnel, <a href="http://www.helmholtz.de/jobs-talente/helmholtz-akademie-fuer-forschungsfeld-physik">http://www.helmholtz.de/jobs-talente/helmholtz-akademie-fuer-forschungsfeld-physik</a> (only in German)</td>
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<td></td>
</tr>
</tbody>
</table>
Appendix

Two Examples of Structured PhD Programmes and Courses

Graduate Academy of the Friedrich Schiller University Jena

1.1. CONCEPTION

The Graduate Academy was established to assure optimal conditions in research training for PhD students and Post-Docs. One step in this direction is the study programme tailored to the needs of doctoral students and Post-Docs. This study programme complements the discipline specific courses offered within the structured programmes.

Study Programme

With regard to the specifics of each discipline, the Graduate Academy has developed its own study programme. Cooperations exist with the Research and Transfer Service Centre, the university project "Teaching To Teach" and other partners. The programme consists of three pillars:

1. Core research skills
   - Core research theme
   - Research themes from the members
   - Basic principles of research
   - Controversies in research
   - Colloquia
   - Advanced research methods
   - Scientist in Residence

2. Transferable skills
   - Management & Organisation (including Teamwork)
   - Communication, Presentation and the Media
   - Career Planning
   - Gender Issues
   - Teaching Skills

3. Languages
   - German as a foreign language
   - English

Group leaders and lecturers can attend courses run by the German Association of University Professors and Lecturers.

Established researchers are not the target group of the Graduate Academy. The university of Jena has nothing to offer them but refers them instead to the Deutsche Hochschullehrerverband.
### Research Methodology

**Date**

- 12.-13.04.2012
- 18.04.-27.06.2012 (weekly)
- 25.04.2012
- 27.04.2012
- 02.05.-20.06.2012 (on Wednesdays)/postponed
- 05.06.2012
- 22.06.2012
- 02.07.2012

**Course**

- Working with MATLAB – an Introduction
- Neighborhood Properties of Geometric Sets and Applications
- Literaturverwaltung und Wissensmanagement mit CITAVI
- Understanding Statistics - The Basics
- Advanced Research Methodology I
- Literaturverwaltung und Wissensmanagement mit CITAVI
- Advanced Data Analysis with IBM Statistics 20 - What's new?
- Visualizing your Data - Convincing with professional posters and presentations

### Transferable Skills/Teaching Skills

**Date**

- 02.04.2012-31.03.2013
- 02.05.-13.06.2012 (on Wednesdays)
- 03.-04.05.2012
- 07.-08.05.2012
- 10.-11.05.2012
- 21.-22.05.2012
- 04. und 11.06.2012
- 07.-08.06.2012
- 14.06.2012
- 15.06.2012
- 18.06.2012
- 06.-07.06.2012
- 09.-10.07.2012

**Course**

- Zertifikatsprogramm Lehreualiﬁkation Basic
- Zertifikatsprogramm Lehreualiﬁkation Basic
- Extramural Funding: Key Factors for Writing a Successful Proposal
- Scientific Writing and Publishing for Natural Scientists
- Good scientiﬁc practice und how to deal with conﬂicts in research environments
- Planning and facilitating effective workshops
- Leadership Skills
- Self-marketing for women – necessary? allowed?
- Writing for doctoral candidates in the humanities ans solical sciences (coaching)
- Time and project management
- Scientific Presentations
- Scientific Presentations
- Intercultural Workshop
- Efﬁcient reading
- Speech and Vocal Training
- Speech and Vocal Training

### Languages

**Date**

- 18.-20.04.2012/postponed

**Course**

- German for Beginners (A1)
- English Grammar and Pronunciation
1.3. TEACHING QUALIFICATION

At the Graduate Academy, qualification in academic teaching is regarded as an important part of the study programme. The qualification is deemed relevant for the employability of academics in- and outside the university. During the course of your doctorate you will need this qualification in several areas, e.g. doctoral candidates are confronted with planning and giving courses for undergraduate students, instructing research students and interns and supervising exam projects. The Graduate Academy supports its members in acquiring the necessary qualifications.

According to individual requirements you can choose between three options. All participants will receive a certificate "Qualification in academic teaching" by the Graduate Academy upon successful completion of the programme.

A) "Basic qualification in teaching"

One-year programme consisting of workshops, including video-recording and subsequent evaluation of your own teaching performance

- Run by the university project "LehreLernen" (Learn to Teach)

- Individual registration

B) "Coaching in Teaching - Basics in academic teaching"

Half-yearly programme consisting of seminars and feedback on your own teaching

- Run by ORBIT e.V.

- Registration of groups by the coordinators of the Graduate Schools, Research Training Groups and Graduate Programmes

- Please contact Dr. Gunda Huskobla if you are interested in this programme

- Options in English available

C) "Compact Course Academic Teaching"

Three thematic workshops based on each other in the three domains planning, running of courses as well as evaluation and assessment

- Run by the university project "LehreLernen" (Learn to Teach)

- Individual registration

Certificate

The GA issues a certificate upon successful participation in the workshops with a supplement to information on the course content. Participants who were absent for more than 20% of the time do not receive a certificate. Likewise, participants who have not paid the service charge will not receive a certificate.

- not obligatory
- the courses are not for free, but the fees are rather low
1.4. THE GRADUATE ACADEMY ENCOMPASSES A CENTRE FOR ADVANCED METHODS TRAINING

systematically surveys the requirements for specific and cross-disciplinary general methods-training,

identifies the best experts as trainers, within the university or throughout the international scientific community

tailors a support programme to Your needs, ranging from seminars and workshops to consultations and coaching

ensures the quality management by process evaluation of the workshops

It is our mission to identify your requirements of consulting and training service, spot first-class experts, and bridge the gap to supply a state-of-the-art training. The service offer is targeted at doctoral candidates and postDocs as well as their supervisors, senior researchers and programme coordinators.

2nd example: International Graduate Academy, University of Freiburg

The IGA is the central service department of the University of Freiburg for all questions concerning doctoral studies.

It offers the university’s doctoral candidates the following services:

- A transdisciplinary qualification program with an average of 70 courses and workshops per year in the areas management and communication, media and data processing, languages, higher education teaching methodology, career planning and career entry, and practical orientation. Approximately 1/5 of the university’s doctoral candidates have taken advantage of the course program to date and have given the courses an average grade of 1.4 in course evaluations!

- Individual career advising and support in applying for scholarships, publication subsidies, and research-related travel costs. Last semester, our academic coordinators advised a total of 150 doctoral candidates.

- Individual coaching. Last year almost 50 early stage researchers profited from this service.

The IGA offers also entrepreneurship advising.

The IGA offers the following services especially for international PhD students:

- individual advising and support in organizational matters,

- a proofreading service for academic texts,
• the postgraduate conference „Milestones."

• The International Graduate Academy (IGA) offers 35 to 40 courses and workshops per semester in German and English to provide doctoral candidates transdisciplinary further qualifications. The courses teach core competencies and transferable skills in six areas: Management and Communication, Media and Data Processing, Career Planning and Career Entry, Higher Education Teaching and Learning, Practical Orientation, and Languages.

These courses are open to all doctoral candidates at the university and are free of charge for students planning to earn their doctorate in Freiburg. [i.e. not compulsory!]

• The transdisciplinary course program is designed for all doctoral candidates of the University of Freiburg. You may participate in the courses if you are registered or matriculated as a doctoral candidate at the University of Freiburg. Visiting doctoral candidates who are not participating in a structured program within one of the University of Freiburg’s graduate schools or doctoral research groups and are not matriculated must receive special permission before being allowed to participate in the qualification program.

• All IGA courses begin promptly at the time indicated in the course catalog (i.e., sine tempore); punctuality is expected. Teachers are authorized to exclude participants from their courses who do not cooperate sufficiently. Participants may also be excluded for passing on confidential information from the courses to the public or for other inappropriate behavior.

Course program:
• Management and Communication. The area „Management and Communication“ includes courses on presentation techniques, design, and writing skills to help students make more effective presentations on topics from their dissertation at conferences and colloquia. Other workshops teach rhetorical and general communication skills, providing students with important transferable skills in areas like time and self management, moderation, and leadership.

• Media and Data Processing. The courses in the area „Media and Data Processing“ train media skills and teach students to use various computer programs which can be helpful for preparing presentations, writing academic texts, or typesetting a dissertation or other text for publication.

• Career Planning and Career Entry. The courses in the area „Career Planning and Career Entry“ support students in evaluating their career options and planning their career and provide concrete preparation for job interviews. In addition, this area includes courses in which professionals provide an introduction to their own field of work, thus providing students practical insight into professions they are interested in and enabling them to establish contact with experts from the private sector.

• Higher Education Teaching and Learning. The area „Higher Education Teaching and Learning“ includes important skills and qualifications for students interested in becoming professional educators. These courses are designed especially for doctoral candidates who are teaching courses at the university and wish to learn the skills
necessary for effective teaching and pedagogical reflection or who are looking for support on methodological questions.

- **Practical Orientation.** The goal of the courses in the area „Practical Orientation“ is to help students prepare to write their dissertation, support them in the various phases of their studies, and provide tips on how to establish optimal conditions for effective studying.

- **Language Courses.** The courses in „Languages“ help students to extend their oral and written expressiveness and discussion skills, particularly in foreign languages. In order to support the integration of international students of the university, the IGA offers an average of 3 to 4 courses per semester in German as a foreign language.

- **Advising.** The area “Advising” includes individual advising sessions on the topics “Career and Profession” and “Academic Writing.” The individual “Career Advising” serves to make advisees aware of their career potentials and help them develop efficient strategies for career entry. The “Writing Advice” sessions, which offer an initiating, non-directive form of advising, enable the advisee to reflect on the process and outcome of text production and discuss possibilities for their optimization. A routine consideration of one’s own writing process is also possible in the “Autonomous Writing Group.”

- **Coaching.** The area „Coaching“ includes workshops in which small groups of participants learn methods for advising each other and providing each other feedback and support in decision making. Coaching is a solution-oriented approach based on mutual trust and respect among group members. In supporting each other the participants develop efficient strategies for coping with the various demands of the doctoral phase.

### One Example of a programme for young research group leaders

**Young Investigator Network (YIN) at the Karlsruhe Institute of Technology**

Established in spring 2008, the Young Investigator Network (YIN) offers a platform and a democratic representation of interests for the junior research leaders at KIT. The main tasks of YIN are:

- representation of interests and networking of its members
- advancing leadership skills and personal qualifications.

The network is self-governing. Until now, it is unique in this form in Germany. YIN is a key element in the **Concept for the Future** of KIT. Financial support is

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11 Compare also the House of Competence, a central institution of KIT which connects the various, previously co-existing central and decentralized institutions which convey competence in teaching and further training. ([www.hoc.kit.edu](http://www.hoc.kit.edu)). The HoC programmes is geared mostly to students.
provided through funds of the Excellence Initiative and Administrative Assistance by the Karlsruhe House of Young Scientists (KHYS) and the KIT Research Office.

A wide-ranging advanced training program is offered to network members to assist them in their further qualifications as leaders in research and teaching or in the industry. This includes tailor-made leadership workshops and didactic courses as well as an extensive coaching and mentoring program that have been developed especially for the YIN members in cooperation with the Scientific Further Education Department (PEW) at the KIT.

For further info see http://www.yin.kit.edu/english/1117.php
WG SKILLS - Researcher Training Gap Template
Version 3rd April 2012

- It has been recognised that a full mapping of skills training is not feasible in the allotted time nor would it be particularly informative.

- The purpose of this exercise is to give an overview of activities in your country focusing on the "big picture".

- As we agreed at the Working Group meeting on 27th March please begin by attempting to populate the R4 category and work backwards.

- Deadline for response is 17th April in order that we may discuss this at our next WG meeting scheduled for 25th April. The report will then be finalized and sent to the Steering Group for discussion at the next SGHRM meeting on 23rd May.

1. What are the national/regional strategies/initiatives for these levels (R1 to R4)?

- It is clear from our work to date that the question is somewhat misplaced as there is no single national skills agenda for any country.

- This means that the responses to the Deloitte questionnaire will not provide a complete overview. For examples, there are cases where the response has been simply to state that there is no national policy in place. In reality, there are a number of agendas relating to skills for researchers driven by different stakeholders at regional and national level. First, there is broad government policy that may manifest itself through Higher Education and/or Research policy. Secondly, there is the policy set by agencies when they provide funding for skills training. This tends to concentrate at the level of doctoral studies. Thirdly, there is the approach of universities and other organisations that host researchers.

- It would be helpful to outline the various skills strategies at governmental, funding agency and university level.
2. Can you give example(s) of the main initiative(s) on these particular areas (A to D)? **IRELAND**

- We have agreed to use the matrix spanned by the European Framework for Research Careers (EFRC) and the Researcher Development Framework (RDF) as the template for investigating skills provision. The EFRC is now an accepted European classification. The RDF, developed by VITAE in the UK, has been piloted in a number of countries through the European Science Foundation (ESF) and is seen to have worked well.

- This is not intended to be a full mapping exercise. The objective is to provide as many examples as possible for the template in order to gain an overall impression of skills training.

- The table is filled with examples from Ireland and while not being complete does give an overall impression of skills training (the full template completed before last WG meeting on 27th March is appended).
<table>
<thead>
<tr>
<th>Status</th>
<th>R1 First stage researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overview</strong></td>
<td>Student / Employee</td>
<td>Employees</td>
<td>Employees</td>
<td>Employees</td>
</tr>
<tr>
<td><strong>A. Research knowledge and skills</strong></td>
<td>Completely restructured PhD with transferable/generic skills and advanced disciplinary courses</td>
<td>Many will access the R1 courses but also have access to continuous professional development opportunities through HR</td>
<td>Continuous professional development opportunities through HR</td>
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</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>GSS505 Graduate Research Skills, NUI Galway (LS, A1, S2)</td>
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<tr>
<td>'I'm nearly finished' - exploring the personal writing challenges and breakthroughs associated with completing a PhD (NAIRTL)(^{12}) (LS, A3, S2)</td>
<td></td>
<td></td>
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<tr>
<td><strong>B. Personal effectiveness</strong></td>
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<tr>
<td>Graduate Certificate in Innovation and Entrepreneurship, TCD-UCD Innovation Academy (LS, A2, S1)</td>
<td>Networking both internally and externally, UCD (LS, A1, S2)</td>
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<tr>
<td>GSS10 Publishing Research &amp; Preparing for the Job Market, NUI Galway (LS, A1, S2)</td>
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<tr>
<td>GSS3 Thesis Completion and Career Development, NUI Maynooth (LS, A1, S2)</td>
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<tr>
<td><strong>C. Research management</strong></td>
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<tr>
<td>Project Management for Researchers, UCD (LS, A1, S2)</td>
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<tr>
<td><strong>D. Public engagement and impact of research</strong></td>
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</tr>
<tr>
<td>GS512 Engaging with the community: research, practice and reflection, NUI Galway (LS, A1, S2) Giving Tutorials (A3, S2, ES) Laboratory Supervision (A3, S2, ES) Exam Invigilation (A3, S2, ES)</td>
<td>Grant Writing, DCU (LS, A1, S2) Pitching your Research to increase Funding Opportunities, DCU (LS, A1, S2) Lecturing (A3, S2, ES)</td>
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<td>External Examiner (written exams) (A3, S2, ES)</td>
<td>External Examiner (theses) (A3, S2, ES)</td>
</tr>
</tbody>
</table>

A: The knowledge, intellectual abilities and techniques to do research
B: The personal qualities and approach to be an effective researcher
C: The knowledge of the standards, requirements and professionalism to do research
D: The knowledge and skills to work with others and ensure the wider impact of research

For full details see http://www.vitae.ac.uk/researchers/428241/Researcher-Development-Framework.html

Notes on completing the template
1) As agreed at the meeting, please focus first on R4 and work backwards!

2) Give a brief description of specific courses in the template and accompany with full web references.

3) If possible please provide a measure of how widely available the course is based on:

   **Availability**
   A1 – low available at a single institution
   A2 – medium available at a number of institutions
   A3 – large available nationally (note that this could also be a type of course that is available nationally, e.g. in Ireland courses on research ethics are available for all PhD students in every university however the course itself is delivered locally)

   **Access**
   Is the course available to a select group (S1) of researchers or to the whole community (S2). For example, you would indicate S1 if the course is available only for doctoral candidates on a particular PhD programme.

4) Remember that “training” comes in many forms and is not confined to well-defined courses and professional accreditations. At senior level, it may come through collaborations with academics in other countries on supervision, for example. In this context it is important to recognise that there are two broad forms of skills training:

   • *Learned Skills (LS)* acquired through dedicated Teaching & Learning courses (including classroom, workshop and online)
   • *Experiential Skills (ES)* acquired through experience (e.g. teaching skills through running tutorials, supervising laboratory sessions and lecturing)

At the PhD level (R1) it would seem that skills acquisition is dominated by Learned Skills while Experiential Skills (ES) dominate for Leading Researchers (R4).
Even if you can only indicate availability and access for a few examples, this would be very helpful. Also if possible distinguish between Learned and Experiential. The emphasis in filling the table is to provide an overview of skills training in your country.
APPENDIX

IRELAND
Version completed 23rd March 2012 and discussed at WG Skills meeting on 27th March
IRELAND
Version completed 23rd March 2012

1. What are the national/regional strategies/initiatives for these levels (R1 to R4)?

There are a number of policy approaches in Ireland, led by the key stakeholders, government, funding agencies and universities. There is no single skills policy for all four categories. One can clearly identify strategies for PhD candidates (R1) as a distinct grouping from the other three. The R2 has some overlap with R1 in terms of skills but R3 and R4 are completely separate.

The section below provides an overview of skills provided for the four categories of researchers.

R1 Doctoral Training
In Ireland, one can identify two approaches to doctoral education, that of the government and of the universities.

Government
There are two national policy documents that set out the approach to the education and training of PhD students. The first is the Strategy for Science Technology and Innovation (SSTI). This was published in 2006 and laid out a national investment strategy for doubling the number of PhD graduates by 2013.

The SSTI target of doubling the number of PhDs in higher education involves collaboration between a number of Higher Education groups including the Deans of Graduate Studies, higher education organisations, employers in industry and the government. Agencies which have increased investment in “Fourth Level Ireland” (PhD + early postdoc) include the Higher Education Authority (HEA) through the Programme for Research in Third Level Institutes (PRTLI), the Strategic Innovation Fund (SIF) and Graduate Research Education Programmes (GREPs), the Health Research Board (HRB) and Science Foundation Ireland (SFI). Having developed structured PhD programmes, these agencies have a vested interest in their successful implementation.

Funding for structured PhD’s is provide through a number of national programmes. The main one is the Programme for Research in Third Level Institutions (PRTLI). The principal feature of this scheme is its collaborative nature. The various PhD programmes are thematically based and bring together universities, institutes of technology and research centres. Some have industry and / or hospitals as partners.

The economic situation has changed since SSTI was launched in 2006 and the ability for the Irish government to support a full bottom up approach to research investment is no longer feasible. Resources must be carefully targeted to ensure maximum benefit for the Irish economy and society. On 1st March, the Minister for Enterprise Jobs and Innovation unveiled a new plan for public investment in research through the report of the Research Prioritisation Group. The recommendations in this
report build on the strengths developed through previous investments and identify target areas of opportunity. This will be done on a five-year timescale that concentrates on areas that are of clear economic interest to Ireland. The report recognizes the importance of researchers and in particular the PhD. It has two relevant recommendations:

"A consistent quality framework should be developed for postgraduate education and training incorporating the Structured PhD model. Responsibility for monitoring of the output and quality of Masters and PhD training and education should rest with the Department of Education and Skills (DES). Indicators of the quality of postgraduate education and training should be developed by DES and integrated into the Government’s overall framework for monitoring science, technology and innovation."

Initiatives to improve further and keep under continuous review the alignment between the supply of trained researchers from academia and the demand for such skills from the enterprise sector are imperative:

- A proportion of PhD funding should be earmarked to support the development and rollout of the industrial PhD model in Ireland.
- A proportion of PhD funding should be redirected towards the development of industry driven Masters programmes.
- Technology Transfer Offices within the HEIs should develop a coherent and integrated programme of support for PhD students and early stage post-doctoral researchers that enables them to identify and exploit commercial opportunities arising from their research”.

A new completely separate announcement is imminent that will bring together the two research councils (IRCSET and IRCHSS) to form a single council, the Irish Research Council (IRC). The focus of this council will be the funding of PhD and early stage postdoctoral researchers. It will continue the work of the two previous councils that focused on structured PhD’s and researcher career development.

It is clear that the government is committed to the funding of structured PhD’s as the best method for the training of doctoral candidates. The new aspect that will be introduced is a major collaboration with the private sector, expanding the current industry PhD.

 Universities
Led by the IUA and the universities have restructured PhD education in Ireland. There is now a much more structured approach to graduate studies and research in universities and other higher education institutes. The original proposal was published by the Irish Universities Association (2005) to reform the “Third and Fourth Level” education in Ireland were:

- At Third Level, a radically improved system to support the fundamental changes required to ensure graduates are equipped for a lifetime of innovation and change in the workplace and further learning at Fourth Level (PhD + early postdoc);

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13 There are 14 specific areas including, Connected Health and Independent Living; Medical Devices; Security and Privacy; Digital Platforms; Marine Renewable Energy; Smart Grids and Smart Cities
14 IRCSET – Irish Research Council for Science Engineering and Technology (www ircset ie)
IRCHSS – Irish Research Council for Humanities and Social Sciences (www irchss ie)
• At Fourth Level (PhD + early postdoc), a dramatic improvement of performance in research and the output of highly-skilled graduates with doctoral qualifications and post-doctoral experience.

Reflecting the need to accommodate support and development opportunities to meet the needs of an employment market wider than academia, furnish places for an expansion in doctoral candidates, and maintain quality, the Irish Universities Association (IUA) asserted in 2005 that:

The current training structures and systems of the universities cannot deliver the required increase in numbers while simultaneously maintaining quality. A substantially modernised system is required to deliver the types of Masters and PhD graduates that are fully skilled to engage in the knowledge society (IUA, 2005: 15).

It was envisaged that the modernised system would include the universal enrolment of PhD candidates on structured programmes. As part of the development Deans of Graduate Studies authored the IUA PhD Graduates’ Skills Statement, which outlines the competencies, attributes and qualities a PhD graduate should ideally possess following a PhD and acts as a communication document to potential employers. The statement is also considered an aid to those developing and designing structured programmes.15

Structured PhD programmes in the universities provide a framework in which students have optimal opportunity to develop these competencies, attributes and qualities. Skills for PhD students such as research skills and awareness, ethics and social understanding, communication skills, personal effectiveness/development, team-working, leadership, career management, entrepreneurship and innovation are included in the Graduate Skills Statement. The majority of these competencies are developed through the conduct of research, embodied in the PhD thesis, the quality of which remains the basis for the award of a PhD.16

In 2005, the Irish Universities Quality Board (IUQB) published National Guidelines of Good Practice in the Organisation of PhD Programmes in Irish Universities to support the development of new structures, policies, guidelines and procedures to assist

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15 In April 2009, the IUA released the contextual statement regarding structured PhD programmes (IUA 2009).
16 The PhD is placed at level 10 on the National Framework of Qualifications.
doctorate students in Irish Universities and Institutes of Technology. The IUQB, working with the aforementioned Network, revised the guidelines in 2009 reflecting the increasing number of structured doctoral programmes. The 2009 guidelines state that the main characteristics of the structured PhD programme are specified programmes of education and training “determined institutionally and at levels of facilities and disciplines”, however each student follows a unique programme (IUQB, 2009: 8). These programmes may be provided within one or more institutions.

In 2009, the IUA released a contextual statement regarding structured PhD programmes. The statement defines the core component of a structured PhD programme as:

\[\text{The advancement of knowledge through original research. The goal of such a programme is to provide a high quality research experience and output, with integrated support for professional development. The structured PhD programme is therefore designed to meet the needs of an employment market that is wider than academia, through the introduction of a range of educational and training opportunities as part of the programme. In doing so, the structured PhD can better address the immediate research needs of students, as well as preparing them for future careers in a wide variety of contexts.}\]

- Enhanced arrangements for supervision and mentorship
- Structured arrangements for the development of generic and transferable skills
- Advanced taught courses in their discipline
- Regular monitoring of progress (IUA, 2009).

Across the seven universities there is now a large number of structured PhD programmes all within a common template. One key feature of collaboration has been the development of ECTS for skills training. This allows students move seamlessly between universities for specific courses and carry their credits.

A typical example of such a programme is BioAT, Bioanalysis & Therapeutics. This Structured PhD Programme (BioAT) is a joint initiative being undertaken by Dublin City University, the Royal College of Surgeons in Ireland, National University of Ireland, Maynooth and Institute of Technology, Tallaght to address the challenge of increasing the quality, quantity and entrepreneurial skills of Ireland’s graduate researchers in the critical areas of the biopharmaceutical and biomedical device industries.

BioAT offers students a unique training and educational experience in basic and applied research, advanced technologies, and collaborative clinician-scientist research in hospital-based laboratories (Beaumont and Connolly Hospitals, and the Children’s Research Centre at Crumlin Hospital). This integrated approach to advancing the understanding, diagnosis and treatment of specific diseases (cancer, neurological, cardiovascular, respiratory and infection/immune diseases) with
significant potential for commercialisation is a major strength of the programme. During their PhD students will have the opportunity for placements in international pharma companies and universities (e.g. Harvard Medical School)

R2 / R3 Recognised and Established Researchers
All researchers beyond the PhD are employees whether on fixed term or permanent contracts. As such they have access to continuous professional development (CPD) organized by the institution's human resources. Many early postdoctoral researchers (R2) would access the skills training offered to PhD students. Some Irish Higher Education Institutes have in place specific CPD schemes for researchers, for example, Dublin City University has the "Researcher Continuous Professional Development" scheme.

The National Academy for Integration of Research Teaching and Learning (NAIRTL, www.nairtl.ie) is a collaboration between University College Cork, Cork Institute of Technology, National University of Ireland Galway, Trinity College Dublin and Waterford Institute of Technology. NAIRTL is a centre of excellence for professional academic development in higher education institutions, targeted at the integration of research and teaching and learning, to support the enhancement of the student experience. It plays a key role in establishing best practice and in developing a cohort of academic staff with the requisite skills to deliver structured PhD's. A typical course delivered by NAIRTL would be on mentoring and supervision of PhD students.

While NAIRTL operates at a national level each university has its own internal structures. For example, in Trinity College Dublin, there is the Centre for Academic Practice and eLearning (CAPSL).

CAPSL offers a number of programmes for professional development and support, including workshops and seminars on various aspects of learning and teaching. Programmes range from short workshops to a new Masters Degree in Education in Learning and Teaching. CAPSL promotes e-Learning by supporting the academic community in developing their knowledge and skills in the use of new technologies. Blackboard/WebCT is the College Virtual Learning Environment which offers lecturers a cohort of tools to design and develop courses on-line.

The Dublin Regional Higher Education Alliance brings together all of the third level institutions in the Dublin area. It pools efforts in the development and delivery of structured training for PhD's.

At the level of R3, one will have acquired a significant number of skills, both generic and disciplinary. At this level the typical type of skills offered come through fellowships to enable researchers specialise. A good example is the Health Research Board (HRB) fellowship in translational medicine (see box). The purpose of this fellowship is to enable Clinicians with more than 3 years post-doctoral experience (e.g. doctors, dentists, nurses and other health care professionals) move into the area of translational medicine.
Post-doctoral Research Fellowships in Translational Medicine - Bench to bedside and bedside to bench

Translational medicine is an emerging field which focuses on using what is learned in pre-clinical studies to do smarter things in the clinic ("bench to bedside"). Translational medicine also uses information from clinical studies to sharpen and improve what is done in pre-clinical efforts ("bedside to bench"). It encompasses activities in prevention, diagnosis, prognosis and treatment. Translational medicine bridges applied biomedical research and clinical science with the aim of bringing new discoveries to patients and the population.

R4 Leading Researchers
Almost all of the leading researchers in Ireland are based in the universities and employed as academics (lecturers / professors). As employees they have full access to continuous professional development (cpd) opportunities. At this level the typical type of skills that they might access would relate to senior management (running a university department or becoming a faculty dean).
2. Can you give example(s) of the main initiative(s) on these particular areas (A to D)? IRELAND

I have added what I think is useful information to the table.

<table>
<thead>
<tr>
<th>Status</th>
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<th>R2 Recognised Researcher</th>
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<th>R4 Leading Researcher</th>
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<td>Continuous professional development opportunities through HR</td>
<td>Continuous professional development opportunities through HR</td>
</tr>
</tbody>
</table>

A. Research knowledge and skills
- **Graduate Certificate in Innovation and Entrepreneurship, TCD-UCD Innovation Academy**
- **GS505 Graduate Research Skills, NUI Galway**
  - "I'm nearly finished" - exploring the personal writing challenges and breakthroughs associated with completing a PhD (NAIRTL)¹⁷

B. Personal effectiveness
- **Graduate Certificate in Innovation and Entrepreneurship, TCD-UCD Innovation Academy**
- **GS510 Publishing Research & Preparing for the Job Market, NUI Galway**
- **GSS3 Thesis Completion and Career Development, NUI Maynooth**
- **Networking both internally and externally, UCD**
- **Networking both internally and externally, UCD**

C. Research management
- **Project Management in the Research Context, UCD**
- **Project Management for Researchers, UCD**
- **Project Management in the Research Context, UCD**
- **Project Management for Researchers, UCD**

D. Public engagement and impact of research
- **GS512 Engaging with the community: research, practice and reflection, NUI Galway**
- **Grant Writing, DCU**
- **Pitching your Research to increase Funding Opportunities, DCU**
- **Grant Writing, DCU**
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- **Pitching your Research to increase Funding Opportunities, DCU**

A: The knowledge, intellectual abilities and techniques to do research
B: The personal qualities and approach to be an effective researcher

C: The knowledge of the standards, requirements and professionalism to do research
D: The knowledge and skills to work with others and ensure the wider impact of research

There is a challenge in completing a table of this type. The first is that, in Ireland, there is no single national initiative for skills training. It is done by single institutions and through collaborative ventures (see examples in previous section). In addition, some of the courses given cover more than one of the four areas.

Let me give a concrete example. The Innovation Academy is a joint venture between University College Dublin (UCD) and Trinity College Dublin (TCD) with the aim of transforming PhD students into entrepreneurs. They offer a Graduate Certificate in Innovation and Entrepreneurship available both as an integral part of the doctoral degree and as a stand-alone programme. The two modules within this programme are Creative Thinking & Innovation\textsuperscript{18} and Opportunity Generation & Recognition\textsuperscript{19}.

I have also included specific examples of courses offered as part of the structured PhD in NUI Galway and NUI Maynooth. Of course similar courses exist in all of the universities but it is worth showing some specific examples.

At R2 / R3 level, I give some examples of courses for researcher career development provided by University College Dublin (UCD) and Dublin City University (DCU). It is worth noting that the development courses for researchers at this level are for single universities only.

\textsuperscript{18} http://www.innovationacademy.ie/storage/documents/MODULE%20DESCRIPTOR%201.pdf
\textsuperscript{19} http://www.innovationacademy.ie/storage/documents/MODULE%20DESCRIPTOR%202.pdf
APPENDIX
Examples of Structured PhD Programmes and Courses

Bioanalysis & Therapeutics (BioAT)

A Unique PhD Scholars' Programme in BioAnalysis & Therapeutics (BioAT)

This collaborative inter-institutional 4-year structured PhD programme is funded by the HEA under Cycle 5 of the Programme for Research in Third-Level Institutions (PRTLI). The programme brings together the complementary expertise of researchers from Dublin City University, the Royal College of Surgeons in Ireland, National University of Ireland, Maynooth and Institute of Technology, Tallaght.

BioAT is an integrated, flexible and student-centric programme which will enable students to broaden their skills base and career opportunities through participation in high quality research, advanced training, personal and professional development, and exposure to an innovative, translational research environment.

Research projects underpinning Bio-AT training will lead to developments in bioanalytical methodology and technology applied to disease diagnosis and treatment. Furthermore, they will have significant potential for commercialisation.

Research opportunities related to the following areas are available:
• Cardiovascular disease
• Infection & Inflammatory disease
• Neurological disease
• Cancer
• Regenerative medicine
• Metabolic disease
• Diagnostics
• Bio-Photonics & Imaging
• Medicinal Chemistry
• Nano-Bioanalytics
• Biosensors
• Biomedical devices
BioAT will award 29 scholarships in 2011 based across the partner institutes. We are currently accepting applications from students with genuine interest and commitment to performing innovative translational research. Full details of how to apply can be found below.
Objectives of BioAT
The overall objective of BioAT is to train and develop the participating students to become world-class researchers with the leadership and innovation skills required to underpin the continued growth and sustainability of these industries in Ireland. The specific objectives are:

• To establish an innovative inter-institutional model of structured PhD training

• To provide a personalised PhD programme, designed to optimally enhance graduate training with specific emphasis on transferable and research-focused competencies of direct relevance to the career destination of Bio-AT graduates, including academia, industry and the clinical environment.

• To deliver collaborative multi-disciplinary PhD projects across the consortium in Target Identification, BioAnalysis, Therapeutics, Diagnostics, Drug design which have specific translational applications in areas such as cancer, neurological, cardiovascular, respiratory & infection/immune diseases.

• To deliver cross-institutional PhD projects across the partners that will be uniquely enhanced through engagement with industry & clinicians, made possible by the partnership.

Features of the BioAT Programme
• Access to relevant taught modules across all partner institutions
• 3 laboratory rotations across the partner institutions
• Choice of inter-institutional PhD projects from an extensive range
• Training in cutting-edge technologies
• Supervision by internationally renowned researchers
• Personalised professional development programme
• Travel to international laboratories and conferences
• Emphasis on translational research with clinicians and industry
• Annual stipend €16,000 plus fees (at EU level), travel allowance and laptop
National Academy for Integration of Research Teaching and Learning (NAIRTL)

The National Academy works with Irish higher education institutions to develop and implement policy and practices aimed at enhancing the student learning experience at both undergraduate and graduate level. The Academy supports institutions through investigation and dissemination of national and international examples and models of good practice.

The National Academy's mission is:
- To enhance higher education in Ireland by working in collaboration with institutions to promote innovation, support development and sustain good practice in the integration of research and teaching and learning.
- To build capacity of academic staff and graduate students that will contribute to an innovative work force.
- To provide an efficient, cost effective and quality service to the Irish Higher Education sector.
- To promote a greater awareness of the forms of integration of research, teaching and learning and to encourage all:

Research-led teaching and learning: The curriculum is informed by the research interests of academic staff. Teaching emphasises the understanding of research findings. Research findings are used to inform the curriculum.

Research-oriented teaching and learning: The curriculum emphasises the processes by which knowledge is produced in the field as much as on learning the content of a subject. Teaching focuses on enquiry skills and on acquiring a 'research ethos'.

Research-based teaching and learning: The curriculum contains many activities in which students actually conduct research e.g. enquiry based projects. These activities are based on authentic processes of enquiry and are connected to the research of the institute.

Research-informed teaching and learning: The curriculum is informed by a systematic enquiry into the teaching and learning process itself. The 'scholarship of teaching' approach relates to teachers who are actively involved in evidence-based efforts to establish the effects and effectiveness of student learning, teaching and academic practice.
Dublin Region Higher Education Alliance (DRHEA)
The Dublin Region Higher Education Alliance (DRHEA) is a strategic alliance of the Higher Education sector in the wider Dublin city-region. It includes four Universities and their linked Colleges (TCD, UCD, DCU and NUIM) and four Institutes of Technology (DIT, IADT, ITB and ITT_Dublin). The DRHEA has identified four strands where institutions can work collaboratively to increase efficiencies and enhance academic development:-

- Enhancement of Learning
- Graduate Education
- Internationalisation
- Widening Participation

Access to DRHEA academic development are available to Trinity academic community. For more information on stands and activities click on http://www.drhea.ie

DRHEA projects within Trinity College: The Trinity Inclusive Curriculum Project

Dublin Centre for Academic Development (DCAD)
The Dublin Centre for Academic Development (DCAD), the focal point for the DRHEA's Enhancement of Learning strand, will create a 'virtual' Centre that will capitalise on expertise in educational practice, pedagogy and training in the individual institutions, and will provide access to tailored, structured programmes of training, development and support for academics in a cost-effective and collaborative manner.

The DCAD will prioritise the development of a professional development framework, underpinned by an agreed set of core values that will act as benchmarks for excellence for learning, teaching and assessment across the Dublin region and more generally across Irish higher education.

Key Objectives
- Establish a fellowship programme to develop academic leadership and drive academic change across the DRHEA and to improve practice through collaborative activity around priority areas
- Develop a shared accredited training programme for academic staff and tutors which will rationalise teacher training across the DRHEA and build on existing training and educational strengths in partner institutions
- Set up a database of shared expertise and identify multidisciplinary networks to share ideas and collaborate on priority issues
### Graduate Studies Form for Modules attached to Structured PhD and/or Research Masters Programmes

| Title | Graduate Research Skills  
| School of Natural Sciences- additional requirements in blue (SNS) recommends years 1-3 for completion |
| Credits (ECTS) | 5 |
| Module Places | Available to all new entrant / year 1-3 PhD candidates affiliated to the Colleges of:  
| - Science  
| - Engineering & Informatics  
| - Medicine, Nursing & Health Sciences |
| Course Instance |  
| Module Code: | GS505 |
| Responsible: | *School of Physics – Chair, RGE Committee, Physics |
| Please indicate if generic (GS) or specialised module | Incorporating a blend of generic (GS) and discipline specific units as appropriate. |

**Indicative Module Descriptor:**

This module aims to enable students to develop and acquire a range of generic and discipline specific research skills and gain an understanding of their practical application to the research process, in order to successfully complete fourth level research.

The module will be delivered over four semesters of the PhD programme and delivery will incorporate a blended learning approach including participant attendance at face-to-face units incorporating both generic and discipline specific themes and utilisation of supporting online courseware available via Blackboard.

By the end of this module, the student is expected to be able to:

- Demonstrate the ability to identify, access and critically evaluate the requisite specialised skills, technical training, and specialised diagnostic or other equipment required to carry out their research project
- Demonstrate the ability to write regular comprehensive reports of their research/ laboratory activities
- Demonstrate an ability to prepare and document annual plans that indicate their detailed strategy for the succeeding phases of the research
- Demonstrate an ability to exploit the extensive patent databases and to benchmark their research activity against the relevant patent literature as appropriate
- Demonstrate an ability to communicate their data or findings in poster format and to a peer audience in the discipline
- Demonstrate an understanding of the importance of a notarised notebook as a record of their original contributions to research
- The Supervisor and Graduate Research Committee are primarily responsible for overseeing this module

**Workload:**

| Class Contact | Contact hours:  
| - Total 6-9 hours of which a minimum of 3 hours will be in the form of a face-to-face ½ day workshop and the remaining hours selected from either face-to-face or online self-paced learning |
| Workshop (other forms of educational activity) | • Required attendance at relevant discipline-specific *Getting Started on Your PhD* ½ day workshop  
• Plus attendance at a range of optional face-to-face workshops or self-directed learning via appropriate online modules, including generic and discipline specific themes.  
• **Graduate Studies expects that the School of Natural Sciences will provide the class and workshops** |
| Specified Assignment(s) | Aligned to the student’s PhD research question, module participants will be required to:  
4. Submit 2 referenced annual reports of their research progress (including projected future research activity plans) (Assessor: Graduate Research Committee)  
5. Prepare a presentation on their work for presentation to a peer-audience in their discipline. (Assessor: Graduate Research Committee)  
6. **Optional for SNS:** Maintain a reflective blog/journal (via Blackboard) outlining and tracking the processes and methods used to progress their research (Assessor: PhD Supervisor) |
| Autonomous Student Learning *(please specify)* | Following attendance at relevant workshops and / or use of online courseware, students will be expected to undertake independent research activities and apply their knowledge and skills in order to:  
• Produce comprehensive annual reports of their research, appropriately referenced and calibrated against recent work in their field.  
• Identify their needs for training in new techniques, and for access to facilities, information, and software, in order to complete their research.  
• Keep up-to-date with advances in their field  
• Develop an informed and appropriate strategy for upgrading their technical skills  
• Maintain a notarised notebook of their research activity. |

<table>
<thead>
<tr>
<th>Assessment(s)</th>
<th>Type</th>
<th>% of marks</th>
<th>Timing</th>
</tr>
</thead>
</table>
| • Annual reports outlining research progress and a critical assessment of training and other needs  
• Annual presentation to peer audience, describing their research progress and their plan for the completion of their project  
• Reflective blog entries **optional for SNS**  
• A well-structured research notebook, regularly updated and signed | 100% | Pass / Fail |
<table>
<thead>
<tr>
<th><strong>Graduate Studies Form for Modules attached to Structured PhD and/or Research Masters Programmes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong></td>
</tr>
<tr>
<td><strong>Credits (ECTS)</strong></td>
</tr>
<tr>
<td><strong>Module Code</strong></td>
</tr>
</tbody>
</table>

**Module Places**

**Indicative Module Descriptor:**
The purpose of this module is to prepare PhD students to be successful in publishing in international journals and, ultimately, to obtain a job on graduation. The goal is for the students to have a clear understanding of how to turn their PhD thesis into journal publications by identifying suitable journals, and understanding what reviewers and editors are looking for in manuscripts. They will also gain insights into what they should be doing, over and above their PhD thesis, to allow them to be competitive in the job market. The students will hear from internationally experienced post doctoral students, researchers, lecturers, and professors from across the social science disciplines. These contributors will provide a practical approach to allow the students to learn from their successes (and failures).

**Indicative Learning Outcomes:**
On successful completion of this module, students will:
- understand how to prepare a research publication strategy based on their doctoral dissertation;
- understand how to prepare a manuscript for journal publication;
- understand what journal reviewers are looking for in a manuscript;
- understand how to decide which journal(s) they should target for publication;
- understand how they should deal with reviewer comments;
- understand the job market, and expectations of academic employers both nationally and internationally; and
- have developed a CV and short biography.

**Workload:**

<p>| <strong>Class Contact</strong> | 24 hours, separated into four half-day sessions. |
| <strong>Seminar-based delivery</strong> | The information will be delivered in the style of a seminar and interactive manner with students actively participating. Students will also be required to make presentations. |
| <strong>Specified Assignment(s)</strong> | Individual assignment: |
| | • Develop a research publication strategy based on their doctoral dissertation |
| | • Identify two journals to target for publication. Provide evidence of why these journals are suitable, and develop an outline (1,000 words) of a potential manuscript to submit to the journal. |
| | • A detailed review of an academic manuscript as would be carried out by a journal reviewer (1,500 words) |
| | • The development of an academic CV. |
| | • A short biography (&lt;500 words) on the student similar to what is included in a grant application. |
| <strong>Autonomous Student Learning (please specify)</strong> | Example: Pre-Practical Reading |
| | • Join in class discussions and make class presentations |</p>
<table>
<thead>
<tr>
<th>Assessment(s)</th>
<th>Type</th>
<th>% of marks</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Assignment (as described above – Specified Assignment)</td>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Result</td>
<td></td>
<td></td>
<td>Pass / Fail</td>
</tr>
</tbody>
</table>
Graduate Studies Form for Modules attached to Structured PhD and/or Research Masters Programmes

<table>
<thead>
<tr>
<th>Title</th>
<th>Engaging with the community: research, practice and reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits (ECTS)</td>
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</tr>
<tr>
<td>Module Places</td>
<td>15</td>
</tr>
<tr>
<td>Module Code:</td>
<td>GS512</td>
</tr>
<tr>
<td>Elective Places</td>
<td></td>
</tr>
</tbody>
</table>

Indicative Module Descriptor:
This module is designed as an experiential learning opportunity for Structured PhD research students. In the course of this module they will apply their discipline-specific knowledge/skills to the design, conduct and reporting of a community-engaged, applied research project. Working with the module team, each student will devise an individualised learning experience. The module is intended to accommodate a range of interests, from those students whose doctoral research is in social research through to students carrying out theoretical or laboratory-based projects.

Research topics/themes/problems for a research project may be identified by a community partner, by the individual student/s, by a multidisciplinary team, by relevant academic or research staff/units/groups within the university, or in collaboration with Community Knowledge Initiative (CKI).

Research students will have a shared learning experience through a series of preparatory and reflective seminars, organised on a multidisciplinary basis. Through seminar work, students will report on progress, share their learning, discuss opportunities and challenges, and identify their own learning needs. This reflective space will help link together participants working on potentially different projects in varied settings.

The module – and the accompanying seminars – will be facilitated by academics, researchers and community partner representatives (e.g., COPE Galway), working together to support students in learning about and carrying out community-engaged research. This professional input will combine expertise and experience in applied, collaborative and participatory research methods.

This module has been developed by a multidisciplinary team within NUI Galway as one of the intended outcomes of the Community Engaged Research in Action (CORA) project. The availability of this module to doctoral student and community partners, as a credit-bearing element of a Structured PhD programme, will contribute to the realisation of the civic engagement envisioned by the university as part of the student experience.

The module may be taken by Structured PhD or Research Masters level students, with the agreement of the relevant supervisor and/or programme director.

Aims of the module
The module aims to give students the opportunity to:

- Enhance their personal effectiveness, capacity for innovation and professional competence thus increasing their employability
- Develop research skills in an applied, real-world setting, in response to an identified research need
- Apply discipline-specific knowledge and skills to a research project
- Work collaboratively with a community partner and/or as part of a research team
- Work with people from other disciplines in solving research problems
- Develop a deeper insight into the impact of socio-economic conditions and public policy on real world issues
- Scrutinise and reflect on social norms and their own role as agents of change in society

Indicative Learning Outcomes:
On successful completion of this module, students should be able to;

- Critically evaluate the concept, nature, purpose of community engagement and be cognisant of
different modes of engagement
- Understand how collaborative and participatory methods can inform research practice, through the process of data collection, interpretation and representation
- Engage appropriately with partners in a community-engaged research project
- Conduct a research needs analysis with a community partner/s or contribute to a project already identified
- Plan, conduct, present and evaluate a research project in a collaborative manner
- Reflect critically on their own research practice, doctoral research and future professional practice
- Apply their disciplinary knowledge and skills to real world research inquiry
- Critically consider ethical issues that arise in real world research

**Workload:** Total of 200 hours for 10 ECTS module

<table>
<thead>
<tr>
<th>Class Contact:</th>
<th>20 hours</th>
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<tbody>
<tr>
<td>Seminar attendance (A reflective space)</td>
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<table>
<thead>
<tr>
<th>Workshop:</th>
<th>0-20 (as necessary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in specific workshop/s, as per individual learning needs/skills gap</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Specified Assignment(s)</th>
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<tbody>
<tr>
<td>Portfoilo</td>
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<tr>
<td>Presentation</td>
<td></td>
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<tr>
<td>Evaluation</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Autonomous Student Learning:</th>
<th>110-130</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negotiating with community partner</td>
<td></td>
</tr>
<tr>
<td>Group meetings with members of a team</td>
<td></td>
</tr>
<tr>
<td>Planning the research design</td>
<td></td>
</tr>
<tr>
<td>Conduct of project using collaborative and/or participatory methods</td>
<td></td>
</tr>
<tr>
<td>Preparation for presentation of outcomes</td>
<td></td>
</tr>
<tr>
<td>Self appraisal and preparation for evaluation</td>
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</tbody>
</table>

**Assessment(s)**

To be jointly assessed (as appropriate and as agreed) by the module facilitator/s, research team members, thesis supervisor and community partner.

1. **Portfolio**
   - Including, for example,
     - Log of research activities (individual and/or group)
     - Reflective journal
     - Evidence of research practice

2. **Presentation**
   - (Oral, written, poster, or other medium as appropriate)
   - Individual or group presentation of research outcomes - process and/or product as appropriate.

3. **Evaluation**
   - Participation in evaluation by partners to research process
   - Including self/peer/group/community partner/external evaluation, as appropriate.

<table>
<thead>
<tr>
<th>Type</th>
<th>% of marks</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in reflective seminars</td>
<td></td>
<td>Mandatory</td>
</tr>
<tr>
<td>Assessment: portfolio, presentation</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Participation in evaluation process</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Result**

Pass 65% / Fail
Module

PROFESSIONAL SKILLS - THESIS COMPLETION AND CAREER DEVELOPMENT

Module code: GSS3
Credits: 5
Semester: 2
Department: NIRSA
International: 

Overview

Location: AFF Seminar Room, Iontas Building.

Note: This module meets the requirements for GSS3 and GSA3; it will take place once during this academic year (in January 2012) and will not be repeated in semester 2. Minimum enrolment 10 students.

Module objectives:
The module will prepare students for the completion and defence of their thesis and life after their PhD, including career strategy, disseminating their work, applying for scholarships and jobs.

Module content:
Viva preparation: Aims and purpose of the Viva—Modes of advance preparation—Responding effectively to questions about research—Dealing with critics and reviewers—Including mock vivas
Dissemination of dissertation: Locating projects in a wider field of scholarship and learning—Developing a sense of the scholarly and social value of your research project—Post-doctoral publications: submitting manuscripts or proposals to publishers and preparing articles for scholarly or other journals.
Career strategy: Post-PhD—Career paths—Research and teaching careers—Applying for postdoctoral scholarships—Research grant writing and applications—CV Writing and cover letter writing, Job Interviews

Learning Outcomes

On successful completion of the module, students should be able to:

- Be prepared for the completion and defence of their thesis and life after their PhD, including career strategy, disseminating their work, applying for scholarships and jobs

Teaching & Learning methods

- 18 hours (blocked into 3 full days) of workshops and practicals

<table>
<thead>
<tr>
<th>Delivery methods</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>24</td>
</tr>
</tbody>
</table>
Networking both internally and externally

Researchers can develop their networking skills by contacting other colleagues, both within and outside of the university, and PI/Mentors may have some useful contacts that they would be willing to pass on. Talking to other researchers in the university about their role and the type of work in which they are involved is a useful way of understanding work in different contexts, and can help researchers make better informed decisions about potential moves to other environments. The opportunity to discuss experiences and exchange knowledge, insights and perspectives is a useful exercise and helps people to see challenges differently and even come up with creative solutions to move a situation forward.

Benefits of networking

Networking internally - raise your profile, source new project opportunities, strengthen relationships with stakeholders and gather information on requirements

Networking externally with peers - exchange of best practice knowledge, learn new methods, stay abreast of latest news or find knowledge or contacts to help a colleague.

How do they operate?

Networks are operated on an informal basis and are self managed so the ground-rules, procedures and areas for discussion are agreed by the network participants. The network can operate by email or face to face and as well as a forum for discussion and problem solving. It allows people a sounding board to test out new ideas in front of a cross disciplinary audience. It is recommended that in order to build and nurture interpersonal connections that the network meets face to face at least once every three months. However the idea is not to become too prescriptive so that the network is something that participants choose to maintain rather than it becoming an onerous obligation.

UCD, Belfield, Dublin 4, Ireland. Tel: 353-1-7167777
UCD Research Skills & Career Development
Forbairt Ghairme & Taighde Scleanna UCD

Project Management in the Research Context

Objectives:

To
Understand the difference between a ‘project’ and ‘on-going activities’
Understand relationships between project components (resources, duration and scope)
Develop a project plan
Understand the concept of a ‘critical path’ and how changes in schedules and resource allocation affect the overall duration of the project
Identify the key stakeholders for your project and understand their influence and potential impact on a project
Identify and manage risk in your project including the risks related to the uncertainty of research outcomes
Have an awareness of the key project management tools you can use to manage your project.

Content
Project Concept
Defining the project
Project Planning
Project Implementation
Closing the Project
Project Management Tools
Comparing commercial and academic research
Practical Scenarios

Duration:
Self Managed

Delivery Method:
Online Resource

How to Access?
Please email researchcareers@ucd.ie for access to this resource.

UCD, Belfield, Dublin 4, Ireland. Tel : 353-7-7167777
UCD Research Skills & Career Development

Forbairt Ghairmhe & Taighde Scileanna UCD

Project Management for Researchers

Objectives:

To:

To discuss the relevance of project management in the business environment
Apply fundamental Project Management tools to real world projects
Carry out project progress and performance measurement and evaluation
Evaluate projects within your organisation
Demonstrate an understanding of the elements of a Project Management Methodology.

Content
Introduction to Project Management - Setting the scene
Methodology
Estimating & Costing
Planning and monitoring a project
Risk Management
Leadership & Stakeholder Management
Managing Project Teams

Duration:

2 days

Delivery Method:

Training Programme

How to Book?

Should you be interested in attending this programme please email researchcareers@ucd.ie. Please refer to the Events Calendar for scheduled dates.

Please note that as this programme runs during the day it is important that you agree your attendance on this programme with your PI/mentor/supervisor prior to attending.

UCD, Belfield, Dublin 4, Ireland. Tel: 353-1-7167777
PITCHING YOUR RESEARCH TO INCREASE FUNDING POSSIBILITIES
Module duration: This course consists of 2 half days and 1 full day

Aims of this course:

• to develop a common language to speak to potential investors or business partners
• to convey the excitement and value of their research
• to understand and fulfil the expectations of industry and external stakeholders
• to create/improve a powerful power point presentation of their research for industry

At the end of this course, participants will be able to:

• identify and articulate what makes DCU different
• develop a structure and create openings and closings for presentations
• develop the body of the presentation including facts/benefits and evidence to support the proposal
• create a power point presentation for DCU yet allowing each participant to deliver their presentation in their own style

Target Audience:
This workshop will benefit both academic staff and experienced researchers who are currently involved in or will be involved in making oral presentations on their research to potential investors.
GRANT WRITING

Module duration: 1 day

Target Audience:
Researchers of any discipline who wish to apply as principal applicants for individual and/or project funding.

Aims of this course:
To cover aspects of grant writing that are directly relevant to grant proposals. The areas covered will include:

• assessment of the funding opportunities
• institutional procedures and budget preparation
• common mistakes
• proposal content
• reviewers
• collaborators
• strategic background to a proposal
• CV preparation
• what to do when rejected

At the end of this workshop, participants will have learned:
• important principles of writing successful grant applications in line with DCU and funding body procedures in order to succeed in competitive funding calls.
## APPENDIX 3e

### Norway

<table>
<thead>
<tr>
<th>Status</th>
<th>R1 First stage researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>Structured PhD courses, - advanced disciplinary courses and to some degree courses on transferable/generic skills</td>
<td>Many will access the R1 courses but also have access to continuous professional development opportunities through HR</td>
<td>Continuous professional development opportunities through HR</td>
<td>Continuous professional development opportunities through HR</td>
</tr>
<tr>
<td></td>
<td>Career Centres at some institutions</td>
<td>Career development courses for female researchers UIO, UiT</td>
<td>Career development courses for female researchers UIO, UiT</td>
<td>Career development courses for female researchers UIO, UiT</td>
</tr>
</tbody>
</table>
| Performance appraisals | Performance appraisals | Performance appraisals | Performance appraisals | Performance appraisals

### A. Research knowledge and skills

- Mentoring programmes for female researchers, UIO, UiT
- Programmes for Qualification for Professor-competence for female researchers UIO UiT

### B. Personal effectiveness

- Mini courses on personal effectiveness Academic English
- Media Training NTNU

### C. Research management

- Mini courses on personal effectiveness Academic English
- Media Training NTNU
- Development programme for research leaders UIO/National NTNU
- Programmes for female researchers, e.g.: Gender Action plan UIO
- Courses on supervision

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20 Performance appraisals (medarbeidersamtale) is increasingly used as a vehicle for dialogues between the employer and the employees regarding career development and planning, performance assessments and discussions on training needs. Performance appraisals is typically conducted yearly with all employees within a unit, but it is not done everywhere, and the way it is performed, - and followed up, does vary. No university has (to my knowledge) introduced this as a mandatory practice. But its use is increasing and many institutions offers courses for leaders on performance appraisals.
<p>| D. Public engagement and impact of research | supervision | Dean- and Rector-school National, UHR |</p>
<table>
<thead>
<tr>
<th>Status</th>
<th>R1 First stage researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>Conjunto de acções de formação em estatística aplicada as ciências, UA, (S2- áreas especificas, LS, A1)</td>
<td>Seminario de apresentação do software Rhino3D, UA (S1-researchers in engineering and strong knowledge of software, LS/ES, A1)</td>
<td>Principais de Neuromarketing-Neurociencias aplicadas as ciências do consumo, UA, (S2,A1,LS)</td>
<td>Plano interno de formação, UA, (S1-docentes funcionários de UA, LS, A1)-moodle, repositórios, Google tools, Web 2.0</td>
</tr>
<tr>
<td></td>
<td>Acções de formação em varias áreas UA, (S2,A1,LS/ES)</td>
<td>Marketing na internet, UA, (S1, A1, LS)</td>
<td>Marketing no internet, UA, (S1, A1, LS)</td>
<td>Pedagogia e desenvolvimento curricular no ensino superior, UA, (S1-docentes do ensino superior, A1,LS)</td>
</tr>
<tr>
<td></td>
<td>Curso em especialização em empreendedorismo tecnológico, UM, (S2-specific areas, LS, A1)</td>
<td>Analise quantitativa de dados com o SPSS, UA, (S1,LS,A1)</td>
<td>Analise quantitativa de dados com o SPSS, UA, (S1,LS,A1)</td>
<td>Tecnologias de informação, UA, (S1-docented do ensino superior, LS, A1)</td>
</tr>
<tr>
<td></td>
<td>Pratico em software de gestão comercial, UM, (S2,A1,LS)</td>
<td>Pedagogia e desenvolvimento curricular no ensino superior, UA, (S1-docentes do ensino superior, A1,LS)</td>
<td>Pedagogia e desenvolvimento curricular no ensino superior, UA, (S1-docentes do ensino superior, A1,LS)</td>
<td>Tecnologias de informação, UA, (S1-docented do ensino superior, LS, A1)</td>
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<tr>
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<td>Analise de dados e regresso, UP, (S1-ciencias de educação, A1,LS)</td>
<td>Modelação computacional, UP, (S2,A1,LS/ES)</td>
<td>Tecnologias de informação, UA, (S1-docented do ensino superior, LS, A1)</td>
<td>Docência e aprendizagem colaborativa no ensino superior, UA, (S1A1,LS)</td>
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<tr>
<td></td>
<td>(S2,A1,LS)</td>
<td>Implementação de actividades curriculares, UP, (S2,A1,LS)</td>
<td>Docência e aprendizagem colaborativa no ensino superior, UA, (S1A1,LS)</td>
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<td>(S2,A1,LS)</td>
<td>Office 2007 training, UL, (S2,A1,LS)</td>
<td>Acções de formação em varias áreas, UA (S2,A1,LS/ES)</td>
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<tr>
<td></td>
<td>(S2,A1,LS)</td>
<td>Utilização das TIC em contextos educativos (SEMINARIO), UL, (S2,A1,LS)</td>
<td>Pratico em software de gestão comercial, UM, (S2,A1,LS)</td>
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<tr>
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<td>(S2,A1,LS)</td>
<td>Tecnologias moveis na educação, UL, (S2,A1,LS)</td>
<td>Virtualização da docência-estratégias e módulos, UP, (S1-specific requirements, A1,LS)</td>
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<td>Planificação e</td>
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<td>Course</td>
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<tr>
<td>Análise de redes sociais e métodos avançados de base de dados, UL,</td>
<td>S1</td>
<td>(S1-institute of social sciences,A2,LS)</td>
<td>S1</td>
<td>(S1-specific requirements, A1,LS)</td>
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<tr>
<td>Cursos de pós-graduação (specific skills development for each of the</td>
<td></td>
<td>areas/courses offered at the university), UAbera, (S2,A1,LS)</td>
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<tr>
<td>Cursos de pós-graduação em segurança em sistemas de informação, UCatolica, (S1-informatics experience, A1,LS)</td>
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<tr>
<td>Curso de pós-graduação em laser médicos, UCatolica, (S1-doctors,A2,LS)</td>
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<tr>
<td>Uso de software na investigação qualitativa- Nvivo, UEvora, (not defined)</td>
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<tr>
<td>Cursos para aprofundamento de conhecimento de Processo Bologna, UBI,</td>
<td>S2</td>
<td>(S2,A1,LS)</td>
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<td>(S2,A1,LS)</td>
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<tr>
<td>Curso de utilização de TIC no processo do ensino, UBI, (S2,A1,LS)</td>
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<td>Curso em e-learning como ferramenta de aprendizagem, UBI, (S2,A1,LS)</td>
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<td>Cursos de pós-graduação em áreas específicas, UAçores, (not defined)</td>
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<tr>
<td>Cursos livres de aprendizagem ao longo da vida, UAçores, (S2,A1,LS)</td>
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<tr>
<td>Cursos de pós-graduação em áreas específicas, UMadeira, (S2,A1,LS)</td>
<td>em laser médicos, UCatolica, (S1-doctors,A2,LS)</td>
<td>médicos, UCatolica, (S1-doctors,A2,LS)</td>
<td>resultados de aprendizagem e objectivos de aprendizagem, UBI, (S1-docentes de UBI, A1,LS)</td>
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</tr>
</tbody>
</table>
| Cursos livres: Basic mathematics, immunity and infection, UMadeira, (S2,A1,LS) | Acção de formação para docentes:  
- Formação competências, resultados de aprendizagem e objectivos de aprendizagem, UBI, (S1-docentes de UBI, A1,LS) | Acção de formação para docentes:  
- Formação competências, resultados de aprendizagem e objectivos de aprendizagem, UBI, (S1-docentes de UBI, A1,LS) | Formação peer instruction, UBI, (S1-docentes de UBI, A1,LS) |
| Cursos de especialização e pós-graduação-varias áreas, UTL, (S2,A1,LS/ES) | Cursos para aprofundamento de conhecimento de Processo Bologna, UBI, (S2,A1,LS) | Cursos para aprofundamento de conhecimento de Processo Bologna, UBI, (S2,A1,LS) | Cursos para aprofundamento de conhecimento de Processo Bologna, UBI, (S2,A1,LS) |
| | Curso de utilização de TIC no processo do ensino, UBI, (S2,A1,LS) | Curso de utilização de TIC no processo do ensino, UBI, (S2,A1,LS) | Curso de utilização de TIC no processo do ensino, UBI, (S2,A1,LS) |
| | Curso em e-learning como ferramenta de aprendizagem, UBI, (S2,A1,LS) | Curso em e-learning como ferramenta de aprendizagem, UBI, (S2,A1,LS) | Curso em e-learning como ferramenta de aprendizagem, UBI, (S2,A1,LS) |
| | Cursos de especialização e pós-graduação-varias áreas, UTL, (S2,A1,LS/ES) | Cursos de especialização e pós-graduação-varias áreas, UTL, (S2,A1,LS/ES) | Cursos de especialização e pós-graduação-varias áreas, UTL, (S2,A1,LS/ES) |

**B. Personal effectiveness**

<table>
<thead>
<tr>
<th>Curso pratico de ilustrador cs5, UA (S1-experienced users of softwares, A1, LS)</th>
<th>Técnicas de apresentação, ISCTE, (S2,LS,A1)</th>
<th>Técnicas de apresentação, ISCTE, (S2,LS,A1)</th>
<th>Técnicas de apresentação, ISCTE, (S2,LS,A1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestão do stress (S2,A1,LS)</td>
<td>Organização pessoal e gestão do tempo, ISCTE, (S2,A1,LS)</td>
<td>Organização pessoal e gestão do tempo, ISCTE, (S2,A1,LS)</td>
<td>Organização pessoal e gestão do tempo, ISCTE, (S2,A1,LS)</td>
</tr>
<tr>
<td>Técnicas de apresentação, ISCTE, (S2,LS,A1)</td>
<td>Comunicação e</td>
<td>Comunicação e</td>
<td>Comunicação e</td>
</tr>
<tr>
<td>Organização pessoal e gestão do tempo, ISCTE, (S2,A1,LS)</td>
<td>desenvolvimento pessoal, ISCTE, (S2,A1,LS)</td>
<td>desenvolvimento pessoal, ISCTE, (S2,A1,LS)</td>
<td>desenvolvimento pessoal, ISCTE, (S2,A1,LS)</td>
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<tr>
<td>Comunicação e desenvolvimento pessoal, ISCTE, (S2,A1,LS)</td>
<td>Pensamento crítico, ISCTE, (S2,A1,LS)</td>
<td>Pensamento crítico, ISCTE, (S2,A1,LS)</td>
<td>Pensamento crítico, ISCTE, (S2,A1,LS)</td>
</tr>
<tr>
<td>Pensamento crítico, ISCTE, (S2,A1,LS)</td>
<td>Ética e deontologia, ISCTE, (S2,A1,LS)</td>
<td>Ética e deontologia, ISCTE, (S2,A1,LS)</td>
<td>Ética e deontologia, ISCTE, (S2,A1,LS)</td>
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<tr>
<td>Ética e deontologia, ISCTE, (S2,A1,LS)</td>
<td>Multiculturalismo, ISCTE, (S2,A1,LS)</td>
<td>Multiculturalismo, ISCTE, (S2,A1,LS)</td>
<td>Multiculturalismo, ISCTE, (S2,A1,LS)</td>
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<tr>
<td>Multiculturalismo, ISCTE, (S2,A1,LS)</td>
<td>Cursos de aperfeiçoamento, UL, (S1-faculty of medicine, A1,LS/ES)</td>
<td>Cursos de aperfeiçoamento, UL, (S1-faculty of medicine, A1,LS/ES)</td>
<td>Cursos de aperfeiçoamento, UL, (S1-faculty of medicine, A1,LS/ES)</td>
</tr>
<tr>
<td>Cursos de aperfeiçoamento, UEvora, (not defined)</td>
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</table>

**C. Research management**

<table>
<thead>
<tr>
<th>Cursos de formação avançada, UA:</th>
<th>Compras e gestão de prestação de serviços, UA, (S1,A1,LS)</th>
<th>Compras e gestão de prestação de serviços, UA, (S1,A1,LS)</th>
<th>Compras e gestão de prestação de serviços, UA, (S1,A1,LS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestão do tempo, (S2,A1,LS)</td>
<td>Gestão de projetos, UA, (S1,A1,LS)</td>
<td>Gestão de projetos, UA, (S1,A1,LS)</td>
<td>Gestão de projetos, UA, (S1,A1,LS)</td>
</tr>
<tr>
<td>Protocolo e organização de tempo (S2,A1,LS)</td>
<td>Compras e gestão de prestação de serviços, UA, (S1,A1,LS)</td>
<td>Compras e gestão de prestação de serviços, UA, (S1,A1,LS)</td>
<td>Compras e gestão de prestação de serviços, UA, (S1,A1,LS)</td>
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<tr>
<td>Compras e gestão de prestação de serviços, UA, (S1,A1,LS)</td>
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<td>Gestão de projetos, UA, (S1,A1,LS)</td>
<td>Gestão de projetos, UA, (S1,A1,LS)</td>
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<tr>
<td>Gestão de projetos, UA, (S1,A1,LS)</td>
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<td>Resolução de problemas e tomada de decisão, ISCTE, (S2,A1,LS)</td>
<td>Resolução de problemas e tomada de decisão, ISCTE, (S2,A1,LS)</td>
</tr>
<tr>
<td>Resolução de problemas e tomada de decisão, ISCTE, (S2,A1,LS)</td>
<td>Planeamento de projetos utilizando ferramentas informáticas, ISCTE, (S2,A1,LS/ES)</td>
<td>Planeamento de projetos utilizando ferramentas informáticas, ISCTE, (S2,A1,LS/ES)</td>
<td>Planeamento de projetos utilizando ferramentas informáticas, ISCTE, (S2,A1,LS/ES)</td>
</tr>
<tr>
<td>Planeamento de projetos utilizando ferramentas informáticas, ISCTE, (S2,A1,LS/ES)</td>
<td>Trabalho em equipa, ISCTE, (S2,A1,LS)</td>
<td>Trabalho em equipa, ISCTE, (S2,A1,LS)</td>
<td>Trabalho em equipa, ISCTE, (S2,A1,LS)</td>
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<td>Trabalho em equipa, ISCTE, (S2,A1,LS)</td>
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</tbody>
</table>

**Planeamento de projetos utilizando ferramentas informáticas, ISCTE, (S2,A1,LS/ES)**

**Trabalho em equipa, ISCTE, (S2,A1,LS)**

**Gestão de conflitos, ISCTE, (S2,A1,LS/ES)**

**Condução de reuniões, ISCTE,**
| Gestão de conflitos, ISCTE, (S2,A1,LS/ES) |
| Condução de reuniões, ISCTE, (S2,A1,LS) |
| Diversidade no local do trabalho, ISCTE, (S2,A1,LS) |
| Workshop-Estratégia empresarial e planeamento do marketing para PME, UM, (S2,A1,LS) |
| Liderar e motivar as equipas, UM, (S2,A1,LS) |
| Gestão comercial, UM, (S2,A1,LS) |
| Liderança escolar, UM, (S2,A1,LS) |
| Economia e gestão para farmacêuticos, UP, (S2,A1,LS) |
| Gestão de mudança organizacional, UL, (S2,A1,LS) |
| Curso em Business Intelligence, UCatólica, (S2,A1,LS) |
| Workshop on public relations, UBI, (S2,A1,LS) |
| Gestão de conflitos, ISCTE, (S2,A1,LS/ES) |
| Condução de reuniões, ISCTE, (S2,A1,LS) |
| Diversidade no local do trabalho, ISCTE, (S2,A1,LS) |
| Workshop-Estratégia empresarial e planeamento do marketing para PME, UM, (S2,A1,LS) |
| Liderar e motivar as equipas, UM, (S2,A1,LS) |
| Gestão comercial, UM, (S2,A1,LS) |
| Liderança escolar, UM, (S2,A1,LS) |
| Economia e gestão para farmacêuticos, UP, (S2,A1,LS) |
| Curso em Business Intelligence, UCatólica, (S2,A1,LS) |
| Workshop on public relations, UBI, (S2,A1,LS) |
| Diversidade no local do trabalho, ISCTE, (S2,A1,LS) |
| Workshop-Estratégia empresarial e planeamento do marketing para PME, UM, (S2,A1,LS) |
| Liderar e motivar as equipas, UM, (S2,A1,LS) |
| Gestão comercial, UM, (S2,A1,LS) |
| Economia e gestão para farmacêuticos, UP, (S2,A1,LS) |
| Curso de gestão e avaliação de performance, UP, (S2,A1,LS) |
| Gestão de mudança organizacional, UL, (S2,A1,LS) |
| Workshop on public relations, UBI, (S2,A1,LS) |

| D. Public engagement and impact of research |
| Cursos de formação avançada, UA: |
| • Como realizar apresentações de sucesso (S2,A1,LS) |
| Escrita de textos técnicos e científicos, ISCTE, (S2,A1,LS) |
| Atendimento ao público, UP, (S2,A1,LS) |
| Escrita de textos técnicos e científicos, ISCTE, (S2,A1,LS) |
| Atendimento ao público, UP, (S2,A1,LS) |
| Escrita de textos técnicos e científicos, ISCTE, (S2,A1,LS) |
| Atendimento ao público, UP, (S2,A1,LS) |

Diversidade no local do trabalho, ISCTE, (S2,A1,LS)

Workshop-Estratégia empresarial e planeamento do marketing para PME, UM, (S2,A1,LS)

Liderar e motivar as equipas, UM, (S2,A1,LS)

Gestão comercial, UM, (S2,A1,LS)

Economia e gestão para farmacêuticos, UP, (S2,A1,LS)

Curso de gestão e avaliação de performance, UP, (S2,A1,LS)

Gestão de mudança organizacional, UL, (S2,A1,LS)

Curso em Business Intelligence, UCatólica, (S2,A1,LS)

Workshop on public relations, UBI, (S2,A1,LS)
<table>
<thead>
<tr>
<th>Workshop em redacção e publicação científica, UP, (S2,A1,LS)</th>
<th>Workshop em redacção e publicação científica, UP, (S2,A1,LS)</th>
<th>Workshop em redacção e publicação científica, UP, (S2,A1,LS)</th>
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<tr>
<td>Redacção científica, UP, (S2,A1,LS)</td>
<td>Redacção científica, UP, (S2,A1,LS)</td>
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<td>Comunicação de informação, UP, (S2,A1,LS)</td>
<td>Comunicação de informação, UP, (S2,A1,LS)</td>
<td>Comunicação de informação, UP, (S2,A1,LS)</td>
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<tr>
<td>Formação em prestação de serviços, UP; (S2,A1,LS)</td>
<td>Formação em prestação de serviços, UP; (S2,A1,LS)</td>
<td>Formação em prestação de serviços, UP; (S2,A1,LS)</td>
</tr>
<tr>
<td>Higiene e segurança no trabalho, UL, (S2,A1,ES)</td>
<td>Higiene e segurança no trabalho, UL, (S2,A1,ES)</td>
<td>Higiene e segurança no trabalho, UL, (S2,A1,ES)</td>
</tr>
<tr>
<td>Formação em pesquisa e gestão de informação, UL, (S1, faculty of education, A1, LS)</td>
<td>Formação em pesquisa e gestão de informação, UL, (S1, faculty of education, A1, LS)</td>
<td>Formação em pesquisa e gestão de informação, UL, (S1, faculty of education, A1, LS)</td>
</tr>
</tbody>
</table>

If possible please provide a measure of how widely available the course is based on:

**Availability**

A1 – low available at a single institution
A2 – medium available at a number of institutions
A3 – large available nationally (note that this could also be a type of course that is
available nationally, e.g. in Ireland courses on research ethics are available for all
PhD students in every university however the course itself is delivered locally)

Access
Is the course available to a select group (S1) of researchers or to the whole
community (S2). For example, you would indicate S1 if the course is available only
for doctoral candidates on a particular PhD programme.
Remember that “training” comes in many forms and is not confined to well-defined
courses and professional accreditations. At senior level, it may come through
collaborations with academics in other countries on supervision, for example. In this
context it is important to recognize that there are two broad forms of skills training:

- **Learned Skills (LS)** acquired through dedicated Teaching & Learning courses
  (including classroom, workshop and online)
- **Experiential Skills (ES)** acquired through experience (e.g. teaching skills through
  running tutorials, supervising laboratory sessions and lecturing)

ACRONYMS:
UA- Universidade de Aveiro
UP- Universidade do Porto
UC- Universidade de Coimbra
UM- Universidade do Minho
UTL- Universidade Técnica de Lisboa
UNL- Universidade Nova de Lisboa
UL- Universidade de Lisboa
ISCTE-IUL- ISCTE-Instituto Universitário de Lisboa
UAberta- Universidade Aberta
UCatolica- Universidade Católica
UTAD- Universidade de Trás-os-Montes e Alto Douro
UAAlgarve- Universidade do Algarve
UBI- Universidade de Beira Interior
UAçores- Universidade de Açores
UMadeira- Universidade de Madeira

Skills Training Template Overview

**UNIVERSIDADE DE AVEIRO**
-offers specialized courses depending on the area, short or long-term courses (they
are available for PhD students and others who want to deepen their knowledge or
skills in certain areas).
-there are a lot of courses de formação especially for health professionals, teachers
of primary and secondary education, managers, engineers etc.
-there are also courses at the university level which aim at developing generic skills,
either just of their staff and faculty, or other population as well.

**ISCTE-IUL**
-there are courses of transversal skills focusing on: systemic abilities, interpersonal
abilities, and instrumental abilities. They are not restrictive and they are available at
the university level.

**UNIVERSIDADE DE COIMBRA**
-nothing could be found

UNIVERSIDADE DO MINHO
-not many courses available (at least concluding from the data available online). There are some specialization courses for professionals which are not restricted to certain population, profession type etc.

UNIVERSIDADE DO PORTO
-Porto has a lot of area-specific courses (similar to Aveiro). They are not restrictive and can be attended by all types of researchers in order to upgrade their skills or enhance their existing knowledge.
-a lot of courses for training people who work for companies and firms in the engineering and informatics sector is available as well.
courses developing generic skills are available at the university level

UNIVERSIDADE TECNICA DE LISBOA
-a great amount of area-specific courses developing certain skills is available

UNIVERSIDADE NOVA DE LISBOA
-could not find anything

UNIVERSIDADE DE LISBOA
- has a lot of skills courses in a variety of disciplines (actually, it varies across faculties. Faculties also organize specific courses available for all the disciplines and programmes at the very faculty).
-there are courses aimed at professionals, working people/formação.
-there seem to be no courses for developing generic skills at the university level available (website data).

UNIVERSIDADE ABERTA
-they also have courses of specific skills which depend on subject area.
-they offer a variety of courses for professionals and working people which can be attended by researchers at all levels.

UNIVERSIDADE CATOLICA
-courses for professionals (especially business), and working people are available.
availability of post-graduation courses (aiming at developing specific skills) in different areas.
-nothing on developing generic skills in particular has been found (website data).

UNIVERSIDADE DE EVORA
-offers courses of: technical specialization, formation (for professor at universities and teachers in primary and secondary schools), and short-term and long-term courses for developing skills in certain areas.
-there is a lack of information on the courses’ contents (website data).

UNIVERSIDADE DE TRAS-OS-MONTES E ALTO DOURO
-nothing found.

UNIVERSIDADE DO ALGARVE
-a few post-graduation courses in specific areas available.
-there is no information on the content of the courses (website data).

UNIVERSIDADE DE BEIRA INTERIOR
-has a specific programme, designed and written every year, for advancement of skills of their professors. As a part of the programme they offer specialization and formation courses for their professors, but also for other faculty members who feel they need to improve certain skills.
-they also offer specialization courses for professionals and working people from different areas.

UNIVERSIDADE DOS AÇORES
-they offer post-graduation courses of open character and specialization courses for professionals, mainly teachers of primary and secondary education. They also offer cursos livres de aprendizagem ao longo da vida from various area-specific subjects. 

**UNIVERSIDADE DE MADEIRA**

-have a couple of post-graduation courses in specific areas and cursos livres (some are area specific; others are more generic, e.g. Basic Mathematics).

**General Overview**

The majority of the universities offer area-specific courses and specialization courses for skills acquisition. There seem to be a lot of training courses for professionals and working people present at universities across Portugal. These may also be attended by researchers at all stages. In fact, the courses are usually not restrictive, however some previous knowledge and skill possession is desirable. The courses are also usually held at the university which promotes them, and little to none inter-university, or company/organisation-university cooperation is noticeable. Some universities offer courses which develop generic skills; such is the case with the University of Aveiro, the University of Porto and ISCTE-IUL. The offer of generic skills at the university level seems to be the best at ISCTE.

**Non-degree Courses Usually Found at Portuguese Universities:**

- Cursos de curta duração
- Cursos de longa duração
- Cursos de formação
- Cursos de formação avançada
- Cursos de especialização
- Cursos de pós-graduação
- Cursos de aperfeiçoamento
- Cursos de aprendizagem ao longo da vida
- Cursos de formação aos professores
- Cursos de valorização profissional
## Skills training: Slovenia

<table>
<thead>
<tr>
<th>Status</th>
<th>R1 First stage researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
</table>

### A. Research knowledge and skills
- Methodological courses
- Epistemological courses
- Laboratory/practical/ work

### B. Personal effectiveness
- Publishing research
- Preparing for the Job Market
- Thesis Completion
- Entrepreneurship skills (on faculties and in organization of the Ljubljana University Incubator (LUI)).
- Applying for grants
- Language courses
- Presentation skills
- Networking
- Flexible approach to change
- Conflict resolution

Applying for grants
Publishing research
<table>
<thead>
<tr>
<th>C. Research management</th>
<th>Project Management in the Research Context</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intellectual property</td>
</tr>
</tbody>
</table>

<p>| D. Public engagement and impact of research | Night of Researchers Participation in Target research programs | Lecturing Coordination/participation in the <strong>Target research programmes</strong> (Slovenian abbreviation is CRP) represent a system created in 2001 for inter-sectoral cooperation in planning and implementing networked R&amp;D projects for specific areas of public interest. <strong>IRI UL - Institute for Innovation and Development of University of Ljubljana</strong> - was established in 2007 by the University of Ljubljana and by leading Slovenian companies as the innovation and development institute and service for knowledge and technology transfer of Slovenia’s largest University. <strong>The Research Infrastructural Centers Network – MRIC UL</strong> – comprises infrastructural centres that provide specialized technical, instrumental, expert and informational support for the research and infrastructural groups of the University of Ljubljana, its pedagogical activity and users outside the University. <strong>Actions of the Slovenian Science Foundation</strong> <a href="http://www.szfsi.si/?lang=en">http://www.szfsi.si/?lang=en</a>, a not-for-profit national institution intended to accelerate and promote science and research |</p>
<table>
<thead>
<tr>
<th>Status</th>
<th>R1 First stage researcher</th>
<th>R2 Recognised Researcher</th>
<th>R3 Established Researcher</th>
<th>R4 Leading Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student / Employee</td>
<td></td>
<td>Employees</td>
<td></td>
</tr>
<tr>
<td></td>
<td>All universities follow the QAA Quality Code for research degrees (A3, S1) <a href="www.qaa.ac.uk/Newsroom/Consultatios/Pages/research-degrees.aspx">www.qaa.ac.uk/Newsroom/Consultatios/Pages/research-degrees.aspx</a></td>
<td>Research-intensive universities have a targeted programme of training for research staff (A3, S1) <a href="www.skills.cam.ac.uk/postdocs/">www.skills.cam.ac.uk/postdocs/</a></td>
<td>All universities have staff development programmes covering a range of training activities (A3, S2) <a href="www.warwick.ac.uk/services/lidc/">www.warwick.ac.uk/services/lidc/</a></td>
<td>As well as accessing staff development activities, some universities will also provide specific leadership programmes for senior staff (A2, S1) <a href="www.dur.ac.uk/hr/training/acaddeers/">www.dur.ac.uk/hr/training/acaddeers/</a> <a href="www.sheffield.ac.uk/hr/sld/lmd/sjiedleader/sl4">www.sheffield.ac.uk/hr/sld/lmd/sjiedleader/sl4</a></td>
</tr>
<tr>
<td>Overview</td>
<td>All universities have a comprehensive programme of training for doctoral researchers from induction through to graduation and employment (A3, S1) <a href="www.ed.ac.uk/schools-departments/institute-academic-development/postgraduate/doctoral/courses/course-list">www.ed.ac.uk/schools-departments/institute-academic-development/postgraduate/doctoral/courses/course-list</a></td>
<td>Research staff will also be able to access staff development courses (A3, S2) <a href="www.exeter.ac.uk/staff/development/research/rdp/">www.exeter.ac.uk/staff/development/research/rdp/</a></td>
<td>Most research staff will be expected to participate in appraisal and review processes (A3, S1) <a href="www.qla.ac.uk/services/staffdevelopment/learningcoursesandresources/performanceevaluationreview/">www.qla.ac.uk/services/staffdevelopment/learningcoursesandresources/performanceevaluationreview/</a></td>
<td>All universities will have regular appraisal and review processes for staff (A3, S2) <a href="www.qub.ac.uk/directorates/HumanResources/PersonnelDepartment/Appraisal/">www.qub.ac.uk/directorates/HumanResources/PersonnelDepartment/Appraisal/</a></td>
</tr>
<tr>
<td></td>
<td>Most universities allow doctoral researchers to access staff development courses (A3, S2) <a href="www.lse.ac.uk/intranet/LSEServices/TLCC/TLCPPhD/tech.aspx">www.lse.ac.uk/intranet/LSEServices/TLCC/TLCPPhD/tech.aspx</a></td>
<td>Most research staff will be expected to participate in appraisal and review processes (A3, S1) <a href="www.qla.ac.uk/services/staffdevelopment/learningcoursesandresources/performanceevaluationreview/">www.qla.ac.uk/services/staffdevelopment/learningcoursesandresources/performanceevaluationreview/</a></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### A. Research knowledge and skills

All universities have language provision (A3, S1). Examples include:
- [www.admin.ox.ac.uk/personnel/staffinfo/benefits/development/#d.en.52094](www.admin.ox.ac.uk/personnel/staffinfo/benefits/development/#d.en.52094)
- [www.liv.ac.uk/conted/summer_2009/courses_in_liverpool/Language_Courses.htm](www.liv.ac.uk/conted/summer_2009/courses_in_liverpool/Language_Courses.htm)

UK training for researchers in using and accessing information resources and services (A3, S2) [www.rin.ac.uk/our-work/researcher-development-and-skills](www.rin.ac.uk/our-work/researcher-development-and-skills)
| All universities will have targeted subject-specific training for doctoral researchers, usually at departmental level. (A3, S1).  
www.liv.ac.uk/gradschool/research_degree/subjectspecific.htm  
www.ed.ac.uk/schools-departments/institute-academic-development/postgraduate/doctoral/courses | Most researchers at these levels will develop their research knowledge and skills on the job. |
|---|---|
| All universities provide subject-specific skills training (A3, S2)  
www.mpls.ox.ac.uk/skills/courses  
www.artsmethods.manchester.ac.uk/ | Example of specific training to help transition from R2 to R3 (A2, S1)  
www.academiccareermanchester.ac.uk/foryou/postdoc/  
www.bris.ac.uk/researchstaff/yourcareer/stayingacademia/ |
| All universities have appraisal and personal development review processes (A3, S2)  
www.staffnet.manchester.ac.uk/employment/training/leadership-management/performance-and-development  
www.bangor.ac.uk/hr/staffdevelopment/developingperformance/managementskills.php.en |  |
| Vitae have courses and resources to help researchers in their effectiveness (A3, S2)  
www.vitae.ac.uk/researchers  
www.vitae.ac.uk/researchers/337551/Courses-and-events.html;  
www.vitae.ac.uk/researchers/15672/GRADschools.html |  |
| All university career services support postgraduate researchers. Some have dedicated careers advisors (A3, S1)  
www.sheffield.ac.uk/careers/postgraduates  
www.careers.manchester.ac.uk/student/postgraduates/ | Some universities have dedicated career advisors for research staff (A2, S1)  
www.ucl.ac.uk/careers/researchers/staff  
www2.warwick.ac.uk/services/idc/development/#4 |
| Some universities offer career coaching (A2, S1)  
www.bristol.ac.uk/pwe/career-coaching |  |
| UK Concordat to support research integrity (in consultation) (A3, S2)  
www.universitiesuk.ac.uk/Publications/Pages/workinprogress.aspx |  |
Most universities offer financial, project management, IP and applying for funding training (A3, S2) www.dundee.ac.uk/media/dundeewebsite/odp/documents/OPD%20brochure%20WEB.pdf http://staffdev.lrl.bris.ac.uk/staffdevelopment/courses/directory/courselist.pl?sect=Lm&sort=xcode&updown=offSD1PRO
www.ed.ac.uk/schools-departments/institute-academic-development/research-roles/research-only-staff/courses/bus-man-skills
www.york.ac.uk/admin/hr/courses/course.cfm?c=RD0069

The UK research office offers training e.g. Getting the Most out of European Funding (A3, S2) www.ukro.ac.uk/aboutukro/training/Pages/index.aspx

All Universities provide training in research skills, e.g. project management, ethics (A3, S1) www.training.cam.ac.uk/event/226476
www.sddu.leeds.ac.uk/sddu-index-of-research-student-courses.html
www.qla.ac.uk/students/jobs/researcherdevelopment/planyourprofessionaldevelopment/researchgovernanceandorganisation/

Overview of research governance provision (UK provision) (A2, S2) www.lfhe.ac.uk/governance/

D. Public engagement and impact of research

UK Concordat for Engaging the Public with Research (A3; S2) www.rcuk.ac.uk/per/Pages/Researchers.aspx

Resources and training for the commercialisation of research (A3, S2) www.praxisunico.org.uk/training/courses.asp

All universities have equality and diversity training and resources for new and aspiring research leaders (A3 S2)
www.st-andrews.ac.uk/staff/ppd/developyourself/courses/DiversityTrainingforManagers/

Vitae provide resources to support equality and diversity and for new and aspiring research leaders (A3, S1)
www.vitae.ac.uk/everyresearchercounts, www.vitae.ac.uk/pi

Communicating research is supported by National funding bodies and organisations (A3, S2) www.wellcome.ac.uk/Education-resources/Communicating-your-research/index.htm
NCCPE- How to do it support materials www.publicengagement.ac.uk/how

All universities provide people management training, e.g. developing staff, recruitment and selection, appraisal training (A3, S2)
www.dundee.ac.uk/media/dundeewebsite/odp/documents/OPD%20brochure%20WEB.pdf
www.staffnet.manchester.ac.uk/employment/training/leadership-management/management-courses/

Vitae has courses and resources on working with others and leadership (A3, S2) www.vitae.ac.uk/researchers, www.vitae.ac.uk/researchers/473131/Leadership-development.html

All universities provide supervisor training (A3, S2) www.cardiff.ac.uk/ugc/quality/supervisingresearchstudents/suprstr.html
UK professional recognition for teaching and learning: Associate fellow (A3, S1)  [www.heacademy.ac.uk/associate-fellow](http://www.heacademy.ac.uk/associate-fellow)

All universities will provide writing and communication skills training (A3, S2)  [www.ed.ac.uk/schools-departments/institute-academic-development/research-roles/research-only-staff/courses/comms-skills](http://www.ed.ac.uk/schools-departments/institute-academic-development/research-roles/research-only-staff/courses/comms-skills)

[http://training.csx.cam.ac.uk/event/218899](http://training.csx.cam.ac.uk/event/218899)

www.training.cam.ac.uk/cppd/course/cppd-acprac5

Most universities provide media training (A2, S2)  [http://staffdev.hr.bris.ac.uk/staffdevelopment/courses/directory/course.pl?sect=coas&sort=xcode&updown=asc#SD1TIS](http://staffdev.hr.bris.ac.uk/staffdevelopment/courses/directory/course.pl?sect=coas&sort=xcode&updown=asc#SD1TIS)

[www.dundee.ac.uk/media/dundeewebsite/opp/documents/OPD%20brochure%20WEB.pdf](http://www.dundee.ac.uk/media/dundeewebsite/opp/documents/OPD%20brochure%20WEB.pdf)

All universities provide training or guidance for examiners (A3, S2)  [www.surrey.ac.uk/library/researcher/academic/workshops/examiner_kshop.htm](http://www.surrey.ac.uk/library/researcher/academic/workshops/examiner_kshop.htm)

UK professional recognition for teaching and learning: Fellow (A3, S1)  [www.heacademy.ac.uk/fellow](http://www.heacademy.ac.uk/fellow)

All universities have leadership development programmes (A3, S1)  [www.ed.ac.uk/schools-departments/leadership-development/leadership-programme/overview](http://www.ed.ac.uk/schools-departments/leadership-development/leadership-programme/overview)

[www.sheffield.ac.uk/hr/sld/lmd/sldleader/](http://www.sheffield.ac.uk/hr/sld/lmd/sldleader/)

Leadership Foundation provide a range of leadership programmes for senior research managers (A3, S1)  [www.lfhe.ac.uk/support/](http://www.lfhe.ac.uk/support/)

UK professional recognition for teaching and learning: Senior Fellow (A3, S1)  [www.heacademy.ac.uk/senior-fellow](http://www.heacademy.ac.uk/senior-fellow)
APPENDIX 4

EUA - Skills provision in doctoral education

At the doctoral level, many universities do provide taught courses in transferable skills as well as skills awareness through career services such as career centres. EUA-CDE has some quantitative evidence about the developments, and there are a large number of detailed examples publicly available from our events webpage: http://www.eua.be/cde/meetings-and-events/past-events.aspx and from http://www.eua.be/eua-work-and-policy-area/research-and-innovation/doctoral-education/doc-careers-ii/

In the ARDE\textsuperscript{21} survey from 2011, 79% of the respondents had career development services, very often transferable skills training. The main trends in transferable skills training is 1) the development of two models: a comprehensive approach with a coherent offer of courses that are logically interconnected or an 'à la carte'-approach with a range of different courses to choose from. There is anecdotal evidence that fewer assign credits (ECTS or otherwise) to these courses. Many use external providers as these are seen to be able to give a non-university perspective and has approximately the same cost as using internal teachers.

2) Many turn to external funding for the skills provision. Depending on national programmes, structural funds can be used for this for ‘human capital investment’. In countries where structured doctoral education has been traditionally linked to externally funded programmes (Germany and to some extent Finland), skills provision is part of these programmes and its sustainability depends on the extent of the funding. The UK is an interesting examples, where skills provision has lost its funding source (the Roberts Funding), but universities have chosen to continue with internal funds. In the German excellence initiative, universities must pledge to secure sustainability after funding stops as part of the programme.

In the DOC-CAREERs project, one major finding was that large companies are looking mostly for technical skills and have the capacity to train staff in-house for generic skills, while SMEs are more interested in recruiting staff that already had training.

\textsuperscript{21} Survey on the implementation of quality management systems at European universities – N=112 institutions (app. 130,000 doctoral candidates). www.eua.be/arde
Background Information from Eurodoc Survey I

In 2011, Eurodoc published the Eurodoc Survey I (Ateş et al., 2011), a large-scale, pan-European survey on the situation of doctoral candidates and young researchers \((N=7561)\). Among others, the questionnaire comprised several questions measuring training opportunities during the doctorate. The most important results will be briefly described in the following to provide background information on training possibilities (transferable skills) for early stage researchers.

A general question on whether the doctoral candidate receives any kind of training at his/her university during the doctorate was strongly affirmed in five of the twelve surveyed countries\(^1\) (more than 80% of the participants answering with "Yes"): FI, NL, NO, ES, and SE.

Figure 1: Did you receive any kind of training (e.g. courses) at your university during your doctorate? (By Country)

Note: \(N=6611\), valid percentages, valid n. Source: Eurodoc data set (December 2010).

On a more specific level, it was measured whether training was compulsory or not. As Table 1 shows, training on transferable skills seems to be mainly offered on a voluntary basis.

\(^1\) The 12 countries included in the final report are Austria, Belgium, Croatia, Finland, France, Germany, the Netherlands, Norway, Portugal, Slovenia, Spain, and Sweden.
Table 1: Was the training you received voluntary or mandatory? - Transferable skills, e.g. presenting, report writing, project management etc. (By Country)

<table>
<thead>
<tr>
<th>Country</th>
<th>Voluntary (mentioned)</th>
<th>Mandatory (mentioned)</th>
<th>Not applicable</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>46.4%</td>
<td>23.2%</td>
<td>30.4%</td>
<td>349</td>
</tr>
<tr>
<td>Belgium</td>
<td>63.1%</td>
<td>12.3%</td>
<td>24.6%</td>
<td>203</td>
</tr>
<tr>
<td>Croatia</td>
<td>33.3%</td>
<td>20.3%</td>
<td>46.3%</td>
<td>123</td>
</tr>
<tr>
<td>Finland</td>
<td>65.3%</td>
<td>18.5%</td>
<td>16.3%</td>
<td>504</td>
</tr>
<tr>
<td>France</td>
<td>45.3%</td>
<td>21.5%</td>
<td>33.2%</td>
<td>539</td>
</tr>
<tr>
<td>Germany</td>
<td>61.2%</td>
<td>18.1%</td>
<td>20.7%</td>
<td>392</td>
</tr>
<tr>
<td>Netherlands</td>
<td>53.1%</td>
<td>29.4%</td>
<td>17.5%</td>
<td>401</td>
</tr>
<tr>
<td>Norway</td>
<td>44.4%</td>
<td>20.3%</td>
<td>35.3%</td>
<td>617</td>
</tr>
<tr>
<td>Portugal</td>
<td>30.5%</td>
<td>30.2%</td>
<td>39.2%</td>
<td>311</td>
</tr>
<tr>
<td>Slovenia</td>
<td>35.0%</td>
<td>30.8%</td>
<td>34.2%</td>
<td>117</td>
</tr>
<tr>
<td>Spain</td>
<td>29.9%</td>
<td>31.1%</td>
<td>39.0%</td>
<td>241</td>
</tr>
<tr>
<td>Sweden</td>
<td>39.8%</td>
<td>40.2%</td>
<td>20.0%</td>
<td>405</td>
</tr>
</tbody>
</table>

Note. N=4202, valid percentages, valid n. Source: Eurodoc data set (December 2010).

As the category “not applicable” includes people who did not have access to a transferable skills training at their home institution, it gives a hint of the prevalence of this kind of training among doctoral candidates.

When looking at the satisfaction with the transferable skills training, the most satisfied doctoral candidates (respondents indicating ‘4’ or ‘5’ on a 5-point response scale, 5=very satisfied) are found in Belgium, Germany, and the Netherlands (cf. Table 2).
Table 2: To what extent are you satisfied with the training you received? - Transferable skills (e.g. presenting, report writing, project management etc.) (By Country)

<table>
<thead>
<tr>
<th>Country</th>
<th>Not at all satisfied</th>
<th>Satisfied</th>
<th>Very satisfied</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>12.2%</td>
<td>13.5%</td>
<td>28.9%</td>
<td>27.6%</td>
</tr>
<tr>
<td>Belgium</td>
<td>4.5%</td>
<td>8.5%</td>
<td>26.7%</td>
<td>42.6%</td>
</tr>
<tr>
<td>Croatia</td>
<td>22.7%</td>
<td>17.6%</td>
<td>25.2%</td>
<td>22.7%</td>
</tr>
<tr>
<td>Finland</td>
<td>4.4%</td>
<td>14.4%</td>
<td>35.0%</td>
<td>35.4%</td>
</tr>
<tr>
<td>France</td>
<td>12.3%</td>
<td>12.7%</td>
<td>32.5%</td>
<td>29.4%</td>
</tr>
<tr>
<td>Germany</td>
<td>5.7%</td>
<td>8.6%</td>
<td>27.5%</td>
<td>38.4%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1.8%</td>
<td>7.3%</td>
<td>28.9%</td>
<td>46.1%</td>
</tr>
<tr>
<td>Norway</td>
<td>8.9%</td>
<td>15.7%</td>
<td>38.9%</td>
<td>27.3%</td>
</tr>
<tr>
<td>Portugal</td>
<td>8.6%</td>
<td>15.5%</td>
<td>30.2%</td>
<td>32.7%</td>
</tr>
</tbody>
</table>

Note. N=3860, valid percentages, valid n. Source: Eurodoc data set (December 2010)

Referring to the results presented in Table 1, rather high percentages of voluntary participation in transferable skills trainings can be found for these three countries (BE 63.1%, DE 61.2%, NL 53.1%). However, whether there is some kind of relationship between voluntariness in training participation and satisfaction with the training remains an open question.
Table 3 illustrates in which sector doctoral candidates would want to work after finishing their doctorate (it was possible to give multiple responses). The overwhelming majority wishes to stay in the academic research sector (university), followed by the public and the private non-academic research sector. However, as the capacities of universities and other research sectors to employ researchers are limited, this speaks for a need to support doctoral candidates in setting realistic goals for their future employment.

<table>
<thead>
<tr>
<th>Country</th>
<th>Academic research (University)</th>
<th>Public non-academic research sector</th>
<th>Private non-academic research sector</th>
<th>Public non-research sector</th>
<th>Private non-research sector</th>
<th>Non-Governmental Organization (NGO)</th>
<th>Military</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>69.5%</td>
<td>43.5%</td>
<td>50.5%</td>
<td>22.3%</td>
<td>31.3%</td>
<td>16.1%</td>
<td>1.6%</td>
<td>1.2%</td>
<td>547</td>
</tr>
<tr>
<td>Belgium</td>
<td>79.4%</td>
<td>46.3%</td>
<td>6.6%</td>
<td>53.7%</td>
<td>9.0%</td>
<td>4.2%</td>
<td>4.8%</td>
<td>0.8%</td>
<td>281</td>
</tr>
<tr>
<td>Croatia</td>
<td>83.2%</td>
<td>46.5%</td>
<td>21.7%</td>
<td>11.9%</td>
<td>6.7%</td>
<td>4.2%</td>
<td>3.7%</td>
<td>356</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>75.7%</td>
<td>60.6%</td>
<td>32.4%</td>
<td>22.7%</td>
<td>35.9%</td>
<td>6.7%</td>
<td>6.0%</td>
<td>617</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>74.8%</td>
<td>40.6%</td>
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Note: N=6737, valid percentages, valid a. Percentages and totals based on responses.
a. Dichotomy group tabulated at 1. Source: Eurodoc data set (December 2010)
Best Practices/ Examples

With regard to best practices a short-notice request among the Eurodoc members revealed a few examples of which two shall be mentioned:

- **France – L’Universite Nantes Angers le Mans**
  The university introduced a new programme in which they hire an HR consultant who gives advice to students on one to one basis for 1-2 hours. At the same time they have launched a ‘job dating’ programme where PhD candidates can talk with different HR consultants (from different industries). More information can be found at:
  http://www.english.lunam.fr/content/doctoriales-2012 http://doctoriales.lunam.fr/

- **ABG Intelligence**
  They use two training tools: 1) Self-assessment questionnaire (discipline does not play a role) and setting objectives and monitor career progression, with the support of professionals; 2) Valorisation of competences: It is run by an external HR consultancy. Topics: How to communicate beyond academia, identify skills, manage their career more in the longer term.

One important aspect that needs to be considered in any kind of training programme is to include doctoral candidates’ supervisors. This might be even more essential for transferable skills trainings, as for them the immediate benefit might be less obvious for supervisors. Hence, they would be hardly motivated to encourage the doctoral candidate to invest in such trainings. Unfortunately, in our best practice request no one reported of an institution that structurally involves supervisors in their training programme.

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Reference