

REMAT

Research Management Training for Early Career Researchers

*Where did we start
and
what did we learn?*

Review of two years of experience

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ReMaT – Research Management Training for Early-Career Researchers

Where did we start and what did we learn? Review of two years of experience

1. What is ReMaT?

ReMaT is a compact form of research management training for PhD students and early-career researchers. Developed as a Specific Support Action (SSA) with Framework 6 (FP6) funding during 2007-2008, the project addresses the need for complementary skills training in doctoral education and its take-up in the European Higher Education Area (EHEA). Since the SSA was funded as part of the Life Sciences Priority in FP6, the target group comprised young scientists studying for research degrees in the biosciences.

ReMaT was conceived and developed by a partnership comprising the Brussels Office of the Hermann von Helmholtz Association of German Research Centres, the Science Enterprise Centre at Oxford University's Saïd Business School and TuTech Innovation GmbH, the knowledge transfer arm of Hamburg University of Technology.

The content of ReMaT has been developed through consultation with focus groups comprising experienced and early-stage researchers, senior industrial research managers, entrepreneurs and PhD programme directors. The workshops have been piloted at various locations in Europe, with both participants and external observers providing feedback. Overall, 126 participants representing 27 nationalities from 58 institutions took part.

This report provides a summary of the experiences of the ReMaT partners in developing the concept and pilot workshops.

Complementary Skills:

Skills such as communication, writing, which go beyond the specific knowledge needed as a (bio)scientist

Transferable Skills:

Skills which can be transferred to other fields and are still useful even when there is an abrupt change in the job description, e.g. problem solving, project management

Because of the great overlap between complementary skills and transferable skills, we do not attempt to make a clear distinction between the two terms in this publication.

1.1 Introduction

Scientific knowledge lies at the heart of the European knowledge economy. We need researchers who not only discover new knowledge, but also understand how to manage and fund research, transfer knowledge to others and develop and manage their innovative ideas for maximum social and economic benefit. In a global economy, employers seek people who are not only highly trained, but also highly adaptable and mobile, able to function effectively in a variety of different contexts – both academic and commercially oriented – during their professional careers.

1.2 Rationale of the ReMaT project

Various factors are currently driving the need to train young researchers at the PhD level and give them increased access to training in complementary professional and personal skills. One such driver can be seen in the challenges of a fast-changing global labour market. Europe is already experiencing a shortage of well-trained researchers in a variety of fields, and it is anticipated that this shortfall will become even more widespread and acute unless adequate measures are taken to attract young people to careers in science and prepare them adequately for the future workplace.

With evolving demands on society and the economy, researchers in the future are likely to find themselves employed in areas not directly related to their field of study and will use their research training in many different capacities over their careers. Since only about one-third of PhD holders in the sciences remain in academic research over the long term, it is necessary to train young scientists to be able to work effectively in a variety of contexts, who can move easily across geographical borders and interface between the very different work cultures of the industrial and the academic sectors.

A second driver for enhanced training opportunities in complementary skills can be derived from the policy objectives of the European Union, such as the Lisbon Agenda and the Barcelona target aiming to increase spending on research and development by the Member States. Clearly, research cannot be carried out without researchers, and it has been estimated that Europe will need to train some 700,000 additional scientists in the coming years if it is to compete with other global players in research and technological development. The European Commission has recommended increasing the number of researchers in the EU-27 labour force from currently five to nine researchers per 1000 in order to reach the proportion of researchers required to achieve the Barcelona target of 3% expenditures of the gross national product (GNP) for research and technological development.¹

¹ European Commission, DG Research, Towards a European Research Area – Science, Technology and Innovation. Key Figures 2007, p. 85.

In this context, the European Charter for Researchers strongly recommends the establishment of new initiatives to foster professional development for researchers throughout all phases of their careers.² These policy objectives are being

implemented in various instruments and programmes of the Seventh Framework Programme, for example in some of the Marie Curie actions such as the Initial Training Networks, which require complementary training for PhD candidates as an integral part of PhD training programmes and thus provide a model for best practice. Similar training initiatives and programmes for complementary training in PhD education are also being developed at the national level in some, though not all, Member States.

A third driver is the Bologna process, which is being extended beyond the Bachelor's and Master's degrees to examine the state of doctoral education throughout Europe. The objective here is to encourage national governments to define quality standards for PhD education and ensure the comparability of degrees as a way of facilitating researcher mobility throughout Europe. A recent trends survey conducted by the European University Association reported that 30% of institutions in Europe now have established graduate schools providing research training leading to a doctorate, while half of all institutions awarding doctoral degrees offer taught courses at the doctoral level.³ This suggests that, while the establishment of structured curricula at the doctoral level remains a controversial issue in many countries, there does seem to be an increasing trend in favour of PhD curricula that offer a breadth of training in science and complementary skills resulting in a comprehensive overview of a scientific field, without sacrificing the in-depth grounding provided by the independent research project. The Bergen Declaration of the Conference of Ministers Responsible for European Higher Education identifies these as key components of doctoral education, making explicit mention of the need to include training in transferable skills.⁴

To respond to these pressures in a fast-changing global economy, educators will need to develop new concepts of doctoral education that add value to their institutions and enhance the employability and mobility of young researchers if they want to stay competitive in the educational "marketplace".

1.3 ReMaT objectives

For those wishing to establish a research career or those who wish to use a PhD qualification in other contexts, research funding, knowledge management and exploitation as well as academic entrepreneurship are now considered essential components of complementary skills training. Many training opportunities in these

² www.europa.eu/int/eracareers/europeancharter, p. 40.

³ David Crosier, Louis Purser, Hanne Smidt, Trends V – European Universities Shaping the European Higher Education Area, p. 28.

⁴ Conference of European Ministers Responsible for Higher Education, The European Higher Education Area: Achieving the Goals, Bergen, 19-20 May 2005, pp.3-4.

areas currently exist for experienced researchers beyond the level of the doctorate. Although many PhD programmes now recognise the need for complementary professional and personal skills training and make some provision for it, the availability and quality of transferable skills training at the PhD level throughout Europe is at best uneven.

ReMaT addresses this lack and develops a model for delivering research management training that can be readily taken up on a regular basis by institutions throughout Europe. This was achieved through a pilot programme of five workshops carried out in different locations throughout Europe, using a highly interactive format and learning materials that have been specifically developed or adapted to introduce research and knowledge management skills to the target group of PhD candidates in the biosciences.

1.4 Project partners

The ReMaT workshops have been developed by individuals and organisations with many years of practical experience in academia and industry and a commitment to PhD education:

- Brussels Office of the Helmholtz Association of German Research Centres (Project coordinator). The Helmholtz Association of German Research Centres, with 16 research centres, ca. 28,000 employees and an annual budget of 2.4 billion Euros, is Germany's largest research organisation (www.helmholtz.de). Currently, the Helmholtz Association in cooperation with partner universities provides facilities and training for more than 4000 PhD candidates.
- Oxford Science Enterprise Centre, Saïd Business School, University of Oxford. Based at Oxford University's Saïd Business School, the Oxford Science Enterprise Centre (OxSEC) encourages entrepreneurship in the University's science and technology communities (<http://www.sbs.ox.ac.uk/entrepreneurship/>).
- TuTech Innovation GmbH is owned jointly by Hamburg University of Technology and the Free and Hanseatic City of Hamburg with the mission of promoting effective transfer and exploitation of scientific and technical knowledge (<http://tutech.de/>).

The European University Association (EUA) identifies structured doctoral degree programmes as the best way to educate students to meet the multiple challenges of the knowledge society. It follows that the demand for complementary research management skills training will increase.⁵

The challenge for institutions providing PhD education is to equip students with these skills without encroaching too much into the time available to carry out research. Different universities across Europe address this need in different ways, but some not at all. ReMaT has been conceived to address the challenge of delivering complementary skills training in a compact form.

⁵ Doctoral Programmes in Europe's Universities: Achievements and Challenges EUA 2007

1.5 Format of ReMaT

The intensive two-day workshop has been designed to offer an introduction to research management through a series of interactive modules on complementary skills. Staged over two days, the target group includes PhD candidates from across Europe. Participation is limited to 25, with half the students coming from the host location and the other half open to participants from across Europe. In this way the participants are given excellent networking opportunities in addition to the training programme itself.

The modules focus on a range of issues relating to the management of research projects from knowledge creation in research-based environments, to knowledge exploitation in commercial environments. In addition to the modules, the concept seeks to provide participants with “views from the other side”: “enterprising academics”, i.e. people who have used their PhD education in a variety of contexts, talk about their experiences and thus act in some way as role models.

In short, ReMaT intends to provide a foundation in complementary skills for managing research through informal interactive teaching in small groups. The objective is to introduce participants to views on science management, science funding and exploitation that they may not otherwise appreciate from just working on a research project. It offers PhD candidates and early-stage researchers the opportunity to understand the dynamics of the entire value chain around scientific research and to develop skills for managing their knowledge and innovation.

ReMaT aims to give participants:

- An understanding of the different contexts in which research operates – from academia to industry, from fundamental to applied research
- An awareness of the skills needed to manage international, multidisciplinary research projects
- Knowledge of how to fund research, from the EC as well as from private-sector funding bodies
- A foundation in the specific skills needed to fund, manage, disseminate and commercially exploit their scientific research throughout their career
- Opportunities for international networking

2. Overview of the Development of the ReMaT Concept

The core of the ReMaT project was the development and execution of **pilot workshops**. Before piloting the workshops, the concept was discussed with a **focus group**. Another focus group was asked to review the experiences after the four workshops had been held. In addition, the project team regularly sought the advice of persons who are strongly engaged in PhD education in higher-education institutions. These persons formed the informal **advisory board**, which consisted of heads of graduate schools and leading representatives of university and student associations from different European countries. The advisory board provided the

project team with insights on the needs of research institutions and supervisors as well as PhD candidates in doctoral education.

2.1 The First Focus Group – Aim and Results

Twelve bioscience PhD candidates from a broad range of fields were invited to Brussels in May 2007 to share their personal experiences and compare their respective situations as young researchers. The countries represented a cross-section of Europe, including the Czech Republic, Germany, Italy, Slovenia, Sweden and United Kingdom. The Focus Group aimed to sensitise the ReMaT partners to the current situation in various countries, so that they would not be biased by their own experience and national systems. The team wanted to learn about the expectations and wishes of the PhD candidates with the main objective of validating the planned workshop concept against the needs of PhD candidates.



Figure1. Participants at the third workshop, Budapest

Emerging from this discussion was the realisation that differences between two research institutions providing PhD projects can be bigger than national differences. The general impression was that the majority of PhD candidates enjoyed the freedom offered in the execution of their PhD project, but were concerned that this freedom can also be very risky. Many of the participants expressed a desire for more structure and support from their supervisors, but without the requirement of too many compulsory courses. They were aware of a lacking knowledge in areas relating to management topics, career advice and career options. Only a few had a vision of where they would like to work after having finished their PhD, but they were convinced that they should be able to participate actively in transferring their ideas to others who might use and exploit them.

“I learned a lot about management. This overview was really important for my future career because I have realised all the options we have after the PhD and the importance of the notion behind the management.”
(Marilena Djata Cabral, École Doctorale, Toulouse)

Individual comments included the remark that there seemed to be a lack of qualified speakers for courses in complementary skills. An Italian PhD candidate complained about management courses offered only in the native language instead of English, which effectively excludes foreign PhD candidates who otherwise carry out their work in English from participating.

In summary, the PhD candidates appreciate the importance of transferable skills which complement their scientific knowledge and improve their employability, but given their lack of experience they are not able to precisely state what exactly they would like to learn.

Among the topics that were mentioned are:

- How can we organise our PhD project better?
- Who can support us in exploiting our research?
- Patenting or publishing – how to deal with it?
- How can we get financing?
- How can we learn about the work culture in industry?

As this list overlapped almost identically with the planned contents of the ReMaT module, the project team felt mandated to move forward on holding the pilot workshops.

2.2 The Four Pilot Workshops – Aim and Results

Five pilot workshops were held between November 2007 and December 2008 in Zagreb, Budapest, Toulouse, Stockholm and Hamburg. The pilot workshops aimed to test the viability of the format developed and to evaluate the response from participants (PhD candidates) as well as a limited number of observers involved with PhD programme management.



Figure 2. Participants at the third workshop, Budapest

„The most valuable thing this workshop has given me is the insight on the world outside of the ivory tower of pure research.“
(Benno Kreuels, Bernhard Nocht Institute, Hamburg)

The feedback from all participants was considered an essential part of the exercise in order to be able to disseminate the ReMaT experience as an example of good

practice. Between one and four observers attended each workshop, from Croatia, France, Germany, Spain, Switzerland and Sweden.

A total of 25 participants attended each workshop, half of them recruited by the host organisation and half of them coming from all other European countries. The five modules were complemented by an open forum with guest speakers and a dinner to stimulate networking. The stated aim of the workshop was to stimulate an interest in learning more about the topics and to facilitate networking between European countries. Obviously each module itself could provide only a “teaser”, but was designed to give participants the wherewithal subsequently to tackle subjects such as grant acquisition, project management etc. on their own.

Table 1. Contents of ReMaT modules

Module	Contents
Module I: Contexts of modern research and careers in bioscience	How can I perform successfully in different research environments and enhance my employability? <ul style="list-style-type: none"> ○ Varying roles of the researcher in the knowledge-based economy ○ Identifying key transferable skills and knowledge beyond the scientific field ○ Identifying my own personal situation and career goals
Module II: Managing interdisciplinary research projects	What does it mean to work on collaborative research projects with diverse organisations and goals? <ul style="list-style-type: none"> ○ Understanding the different perspectives of project partners ○ Key challenges in managing collaborative projects
Module III: Invention, innovation and the law	How can I exploit the results of my research? <ul style="list-style-type: none"> ○ Intellectual Property Rights (IPR), definition and policies, publishing versus patenting ○ Identifying my own IPR interests and those of my partners ○ Making use of a patent exploitation office
Module IV: Acquiring research grants in a European context	How and where can I apply for research funding in Europe? <ul style="list-style-type: none"> ○ Overview of funding systems in different EU countries ○ Grant funding processes ○ Building a consortium of project partners
Module V: Realising potential – exploiting research and technology	What is technology transfer and how can I use it to commercialise my research? <ul style="list-style-type: none"> ○ What are the options? ○ Entrepreneurial academics ○ Raising funds to commercialise research

The workshops were offered for free, with travel grants being made available for those who needed them. This was particularly important for those coming from New Member States. Each workshop received more applications than could be accepted. In addition to the information on the ReMaT website, the PhD candidates themselves passed around the announcement of the workshops on their own initiative and recommended the workshop to their colleagues. We reached PhD candidates now working in 15 Member States, 5 Candidate Countries and 1 Associated Country, some of whom originally came from countries outside the European Union, including Russia, Colombia and China.

The feedback from all five workshops showed a high level of satisfaction on the part of both participants and observers. The participating PhD candidates as well as the hosting organisations and observers appreciated the workshop as a useful complement to existing training courses. According to the participants' feedback, the topics which were valued the most included the networking and the modules "Project

<i>Workshop (Venue and Date)</i>	<i>No. of participants</i>	<i>Countries represented</i>
Rudger Bošković Institute, Zagreb, Croatia (5-6 Nov. 2007)	25, 1 observer	DE, CZ, FI, HR, PL, UK
Université Sabatier Faculty of Medicine, Toulouse, France (5-6 Feb. 2008)	25, 1 observer	AT, BE, CZ, DE, DK, FI, FR, PL, SL, UK
Central European University, Budapest, Hungary (14-15 April 2008)	26, 2 observers	CZ, DE, IT, PL, AT, HU, FI, HR, ES, SI, BU, BiH, EE, TR
Karolinska Institute, Stockholm, Sweden (9-10 June 2008)	25, 5 observers	FI, DK, CZ, DE, SE, IT, PL, AT, FI, TR, BE, RO, ES, NL, SI, YU,
TuTech Innovation GmbH, Hamburg, Germany (2-3 December 2008)	26, 2 observers	CH, FR, ES, EE, BE, PL, IT, DE

Management” and “Applying for Grants”. Many of the participants would have liked a longer duration of the workshop and more detailed information. This shows that the goal of “whetting appetites” worked very well.

Participants at all five pilot workshops covered a wide diversity of approaches to doctoral education: from unstructured to structured doctoral programmes; from institutions that had “seen better days” to world-renowned institutions performing cutting-edge research. In all, 126 participants representing 27 nationalities took part. The individual research and career interests of the participants ranged from staying in blue-sky research to research careers in industry to those who wished to found their own enterprises. However, despite the huge variation in needs, research background and topic and career interests, the feedback from all the workshops proved that the ReMaT concept is able to meet most of these needs. The workshops receive overwhelmingly high scores, with most participants stating that gaining a broader perspective on how they could use their PhD and what additional skills might be useful was the most valuable result of ReMaT workshop.

Research Management Training Workshop (ReMaT) Example of Standard Programme

Day 1

09:00-09:45	Registration and Morning Coffee
09:45-10:00	Welcome address
10:00-11:30	Module I Contexts of modern research
11:30-12:15	Module II Managing inter-disciplinary projects
12:15-13:15	Lunch
13:15-14:15	Module II Case study analysis
14:15-15:00	Module III Invention, Innovation and the Law
15:00-15:15	Coffee Break
15:15-16:30	Module III Invention, Innovation and the Law
17:00-19:00	Europe in Hamburg – Culture and politics
19:30	Networking Dinner

Day 2

08:45-09:00	Morning Coffee
09:00-11:00	Module IV Acquiring research grants in Europe
11:00-11:15	Coffee Break
11:15-13:00	Module V Exploiting Research & Technology
13:00-14:00	Lunch
14:00-15:00	Open Forum
15:00-16:00	Discussion
16:00	Close

“I liked a lot this workshop. I didn't come as complete "tabula rasa" but this new information put some new enthusiasm/curiosity in my way of looking on professional life.”

(Dragomira Majhen, PhD candidate in Zagreb, Croatia)

2.3 The Second Focus Group – the High-Level Expert Group – Aim and Results

In September 2008, after the fourth pilot workshop, 12 high-level persons involved in PhD education were invited to a second “High-Level Expert Focus Group”. The focus group comprised heads of graduate schools, heads of organisations and associations concerned with the development of doctoral education, including UK Grad, the EUA, the European Consortium of Innovative Universities (ECIU), the League of European Research Universities (LERU), representatives of the European Commission working in the People (Marie Curie) Programme, representatives of industry involved in recruiting academic staff and two PhD candidates who had participated in our workshops - one involved in a Marie Curie Initial Training Network, and the other active in the Czech section of Eurodocs, the European PhD students’ organisation. These 12 experts came from Belgium, the Czech Republic, France, Germany, Switzerland and the UK. All are working in the field of biosciences or represented areas relating to higher and doctoral education in general.

In the first part of the High-Level Expert Group, a lively discussion took place on the factors influencing PhD education; how doctoral education can best meet the demands of society, employers, research and the PhD candidates themselves; as well as on specific experiences and best practices. There was a strong consensus among the members of the group that PhD candidates need to be able to take the initiative to organise themselves and plan their job career thoroughly according to their individual aims. To be able to do this, PhD candidates need a set of transferable skills. These skills complement the scientific knowledge which is the essential foundation of the advanced research degree, but which is not sufficient for a future career. It was emphasised that many PhD candidates have already acquired many transferable skills, e.g. time management or tolerance to frustration, so they need to learn to appreciate their own existing complementary skills as well as to recognise which skills they must acquire in addition.

The industrial representative, Hilary Green, Head of R&D Communication Department at Nestlé, stated that Nestlé looks for a special “spark” in recruiting young PhDs. Job candidates must show that they are able to solve problems, ask questions, and demonstrate that they are self-starters with an ability to see the wider picture.

To enable PhD candidates to organise their PhD project and their career and to recognise and value necessary complementary skills, the group emphasised the need for guidance and efficient supervision. Offering a wide variety of appropriate courses as part of a structured doctoral programme provides effective support, but this should be done on an elective basis. John Smith, Deputy Secretary General of

the EUA, stressed that the strength of the European system of doctoral education is the extreme diversity of doctoral programmes as well as the fact that courses are not mandatory. The need for complementary skills differs from one research field to another, and this diversity needs to be taken into account; e.g. the needs of biologists differ completely from researchers in the humanities and the social sciences, as was highlighted by Rae Condie, Deputy Principal of the University of Strathclyde. LERU representative Katrin Maes stated that career support for PhD candidates must take into account the fact that only 5% of PhD holders usually end up in an academic career. So PhD candidates should be exposed to different career perspectives within research and outside of research.

In the second part of the meeting, the concept developed by the ReMaT project team, the insights gained during the pilot workshops and the feedback of the workshop participants and observers were presented by the ReMaT coordinator, Susan Kentner. The High-Level Expert Group discussed the ReMaT concept, and ideas on how to achieve further dissemination of research management training were gathered.

The overall ReMaT concept was highly commended. The group of high-level experts confirmed that the approach and topics are relevant and appropriate, that the two-day length corresponds well to the time constraints faced by PhD candidates, but allows for enough depth to stimulate broader thinking. Many of the comments of the experts echoed feedback already received from the workshop participants and observers. They agreed that there is indeed a need for such workshops. The Group also stated that the contents of the ReMaT workshops are appropriate for most, if not all, research disciplines and that the concept can easily be adapted to research areas other than the biosciences. Yet, they strongly recommended limiting the workshops to a specific research area whenever offered. This selection will ensure that there is enough common ground among the participants and allow for the use of sufficiently specific examples.

All members of the High-Level Expert Group are already involved in different activities and projects to promote the offering of training on complementary skills and career planning as part of doctoral education. The main common finding was that the high demand on the part of the PhD candidates could not be met owing to insufficient financing and a lack of able, English-speaking trainers with experience in the special environment of PhD candidates and their research projects.

The experts expressed concern that a lot of initiatives funded by public money begin well, but end too soon because there is no longer funding available to sustain the initiative. As both PhD candidates and their research institutions often work on very limited financial budgets, financing by research institutions seems only realistic for elite institutions with adequate resources. As a result, it was emphasised that there needs to be more public seed capital to continue programmes like ReMaT, the UK Grad programme or the House of the Doctoral Schools at University Pierre and Marie Curie in Paris, to name only three examples. The case of the UK Grad programme shows what can be achieved with long periods of funding.

The lack of capable, English-speaking trainers was also considered to be equally relevant. Trainers able to give PhD candidates a broader perspective in topics such

as research management, the exploitation of research in industry or society and career planning need to know the world of researchers in academia and must also have firsthand experience of the world outside of academia, e.g. in industry, technology transfer or patent attorney offices. Moreover, they need excellent communication skills, and given that research groups are becoming ever more international, a very good command of the English language. In Europe, only training workshops in English have the potential to attract PhD candidates from all European countries, to support the necessary networking between young researchers and to integrate all European PhD candidates who work at a certain institution. Up to now the number of possible training courses is limited by the lack of available trainers.

Building on these two observations, the following recommendations were given by the High-Level Expert Group:

- More public financing is needed to broaden the dissemination of training in complementary skills. The European Commission as well as national research and education ministries should provide more sustainable funding.
- As there is a great demand as well as a need, it is necessary to train a greater number of trainers to offer courses on complementary skills and career development. Train-the-trainer concepts should be developed (and funded) to increase the number of English-speaking trainers who are able to communicate a wider perspective on research management and to promote complementary skills training as an integral part of doctoral education.
- Courses like ReMaT should remain voluntary. PhD candidates should be permitted to choose courses which they perceive as the best matching their needs and long-term objective and they should have access to adequate individual training. Voluntary schemes are more likely to encourage an open-minded interest, necessary to ensuring uptake.
- The aim of the ReMaT project team to offer the ReMaT courses on a cost-covering basis after the end of the project was seen as a worthwhile goal that should be implemented.
- To achieve the widest possible acceptance for the ReMaT concept, the ReMaT project team should address the highest management level in universities and research institutions, e.g. Vice Presidents or Deputy Vice Chancellors responsible for doctoral education.
- The ReMaT project team should continue to develop “train-the-trainer” courses to enable a broader range of institutions to develop similar doctoral courses.

3. Integration of ReMaT Workshops into Graduate School Programmes – Toulouse Case Study

Discussions on doctoral education often deal with accreditation needs and possibilities for courses to be accepted as credits. Accreditation schemes should measure the performance of PhD programmes and can contribute to increased mobility of PhD candidates. On the other hand, many PhD candidates fear being subjected to too many compulsory elements as degree requirements, and this is sometimes seen as a disadvantage of accreditation.

The ReMaT project together with the hosting institutions tested the possibility of integrating ReMaT workshops into graduate school programmes, including the assignment of a certain number of credit points.

The Doctoral School of Life Sciences at University Paul Sabatier in Toulouse, which hosted the second ReMaT pilot workshop, already has a structured doctoral programme that offers both training courses on scientific topics as well as topics like scientific writing. Each PhD candidate must attend a certain number of these courses and is awarded credit points upon completion. The institution awarded attendance at the ReMaT workshop with credit points which were fully accepted as a contribution to the necessary total. The ReMaT workshop covered topics which are not yet offered at University Paul Sabatier in Toulouse. This suggests that ReMaT workshops can be easily integrated into structured doctoral programmes and can complement already existing course offerings.



Figure 3. Participants at the first workshop, Zagreb

Selected quotations of participants

“More speakers can be invited in order to tell their experiences in research management, their communication skills & socialization skills, time for exercises was not enough to discuss.”

“You can work as much as you can but if you don't know how to present it to commission you just stay on the level your on - for high level of research you need to make groups of people (various preferations and skills), find money and bring your brilliant idea to end!”

“Thank you soo much. Now I have a much better view on the future and do not fear that time after PhD Great Workshop.”

“Thanks for the excellent workshop. You w[h]et my appetite.”

“I benefit a lot from ReMat Workshop. Thank you very much for your organisation. I will share my knowledge as soon as I go to my institute.”

“I hope to see the Remat-Team giving a work-shop in Vienna, as a part of our PhD Programme.”

“I was positively surprised that the majority of lectures/trainers were women, since this is never the case in any conference. It encourages to see that women can be that successful and strong.”

4. Summary – Lessons Learnt

Summarising the entire experience of the ReMaT project leads to the following conclusions:

- All stakeholders agree that the ReMaT concept seems to meet the needs of the current situation with regard to complementary skills training in doctoral educations.
- Two days is the appropriate length for the workshop.
- The topics covered are seen to be the key relevant subjects.
- English is the preferred language for the workshop. In some cases training in English is part of the training objectives.
- PhD candidates as well as those responsible for PhD education appreciated the widening of perspectives offered to the workshop participants.
- A majority of participants expressed a desire to learn more and for the workshop to be of longer duration. We interpret this to mean that the ReMaT workshops have succeeded in their goal of stimulating each participant subsequently to take the initiative in organising his/her own training programme tailored on individual needs and motivated by the curiosity awakened through the new perspectives gained through the workshop.
- Voluntary participation and diversity are key values which should be kept.
- Integration into already existing structured programmes and systems of credit points can be achieved easily.
- The workshops also offer great value for doctoral education that is strongly apprenticeship oriented and based on an individual research project without structured programme and training units.
- The concept is adaptable to all research areas, but limiting workshops to a specific research area is preferable.
- There is a high demand for courses like ReMaT on the part of both PhD candidates and supervisors and research institutions. A continuation of the workshops is therefore desirable.
- The problem of financing without funding has to be explored in the future.
- Providing for an adequate number experienced trainers who are able to teach in English and who have the right background needs to be addressed, possibly through a “Train-the-Trainer” concept.

5. Continuing ReMaT

The overarching objectives of ReMaT are to expand the availability and access to high-quality complementary skills training, provide a model for delivering research management training and establish complementary skills training as an integral part of doctoral education throughout Europe.

The two-year ReMaT project has been able to make considerable progress towards realising these objectives, but there is obviously still quite a way to go before research management training and other forms of complementary skills training will be readily available to doctoral students everywhere. The need and the educational concept underlying ReMaT have been proven, but obstacles remain to establishing complementary skills training as a standard component of doctoral education. Some of these have to do with divergent cultural attitudes that affect conceptions of doctoral education in general and thus the take-up of complementary training in research and knowledge management in doctoral curricula. Many other obstacles can be ultimately traced to financial constraints that limit the priorities and activities of universities and doctoral programme directors. In both cases, it might be possible to counteract these obstacles by encouraging the exchange and analysis of best practice as well as facilitating the development of new concepts that identify the specific strengths and competences of educational institutions and take into account local circumstances.

As a step in this direction, the ReMaT partners plan to continue ReMaT after the end of the project in December 2008. It will be offered as an in-house course on a cost-covering basis at the request of research institutions, universities or graduate schools. Host organisations are expected to provide facilities for conducting the workshop. The delivery can be tailored and adapted to meet specific requests and circumstances.

The project team will also offer “Train-the-Trainer” workshops to assist institutions in creating their own research management training courses based on the ReMaT model.

For detailed information it is recommended to contact remat@tutech.

6. Project Partners:



Brussels Office of the Hermann von Helmholtz Association of German Research Centres. The Helmholtz Association with its 16 research centres is Germany's largest research organisation.

www.helmholtz.de



Based at Oxford University's Saïd Business School, the Oxford Centre for Entrepreneurship and Innovation encourages entrepreneurship in the University's science and technology communities.

www.sbs.ox.ac.uk/entrepreneurship



TuTech Innovation GmbH is owned jointly by Hamburg University of Technology and the Free and Hanseatic City of Hamburg with the mission of promoting effective transfer and exploitation of scientific and technical knowledge.

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