Women in Innovation, Science and Technology

24th October 2005

Proposal for Call : FP6-2005-Science and society -17
4.3.5.2 (C): Deepening the knowledge base
Co-ordination Actions

List of Participants

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<td>Prof Henry Etzkowitz Institute for Policy and Practice</td>
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<td>Mr Stefan Fuchs Institute for Employment Research</td>
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<td>Dr Marina Ranga Romanian Committee on Gender, Science and Technology</td>
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<td>TASTI</td>
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1. Proposal summary page

Women in Innovation Science and Technology (WIST)

Topic addressed: 4.3.5.2 (C) Deepening the knowledge base

1.1 Proposal Abstract

Women’s role in the interface professions between science and the economy is increasingly salient to achieve European objectives of enhancing the utilization of science in the economy. This four country project will construct some of the first measures of women’s participation and career advancement in TIE (Transfer, Incubation and Entrepreneurship) professions. We have designed a staged series of research tasks, integrating qualitative and quantitative approaches, to produce valid statistics that can then be utilized on a broader scale. These indicators will complement and enhance existing measures of women’s participation in the SET professions.
2 Scientific and technological objectives of the project and state of the art

2.1 Objectives of the Project

The project takes as its objective the extension of statistical data to be more inclusive of women in S&T to apply to the role of women in technology transfer and related S&T interface fields as well as research and scientific decision making. Interface fields are increasingly central to achieving European objectives of mining science for economic utility and resolving the so-called European Paradox.

More detailed objectives

1. What is the rate and level of participation of women in transfer, incubation and entrepreneurship (TIE) organizations in the four countries?
2. Are differences due to structural and organisational factors, gender issues or a combination?
3. How does the position of women in traditional organisations such as academia and industry compare to those of women in the TIE professions?
4. Is there any difference in the position of women in TIE across the countries? Why?

2.2 State of the Art

In most European countries, there are now proportionally more female than male graduates under 30, but women remain under-represented in science and in decision-making bodies concerned with scientific issues. This is both a waste of human resources and a serious obstacle for the development of the sciences and for European society as a whole (Cordis, 2005). An EC funded study based on 3,400 interviews with female and male professors in six countries found that women experience burnout, exhaustion and a higher level of anxiety than men (Zimmer, 2003).

Women leave scientific fields disproportionately to men (Commission Staff Working Document, 2005) If women are not at the 'bench' in proportion to their numbers or in traditional scientific decision making capacities, where do they go? Have they left science entirely? Or, are they participating in science in non-traditional ways such as in the emerging economic and informational areas of science. These transfer, incubation, entrepreneurship (TIE) fields have grown in importance and expanded in recent years as science has become an increasingly significant pillar of knowledge based economies. The intersection between transfer, innovation, entrepreneurship (TIE) and gender relations is the core of the WIST project. According to Jiahong Juda, “Scientists and engineers are rarely well trained and well positioned to participate in commercialising even their own technology, and women scientists and engineers, especially, have been all but shut out www.indianwenglishnews.com. On the other hand, a Silicon Valley based organisation of women technical entrepreneurs holds that, “The pipeline of women with scientific and technical backgrounds, a first class business education and management experience has improved dramatically over the past decade” (www.fwe.org) These two contrasting quotations provide implicit competing hypotheses for our analysis of women in TIE professions.

There is a considerable debate on the efficacy of TIE organizations such as incubators (Rothaermel and Thursby, 2005) technology transfer offices (Siegel, Waldman and Link, 2003), science parks and the role of technology-based start-ups, including some examination of their organizational dynamics, especially of start-ups in knowledge transfer (e.g. Ensley and Hmieleski, 2005) but there has been relatively little analysis of gender relations within TIE organizations with a few notable exceptions (See Smith-Doerr, 2004 and Ahl, 2004 for a discussion of the state of the art in the US and Europe). One study noted women’s predominant presence in a leading US university technology transfer office but did not pursue the implications of this finding (Owen-Smith, 2005).

Women moving from S&T fields to the economy are impeded from taking full advantage of their intellectual capital in negotiating this transition. Although the Joint Analysis and Strategy for Self-Employment for Women with technical and scientific education (JASS) project (JASS WIREC
2001) was initiated in response to a particular circumstance of industrial transition, the researchers concluded that the basic issue of under-utilization of women with scientific and technological (S&T) skills, was common to all European countries in one form or another. In addition, the project determined that there was a lack of relevant statistics. A further significant finding was that women entrepreneurs with an S&T background typically started companies in non-technical fields. Moreover, women entrepreneurs typically had extensive experience in S&T but little managerial experience in contrast to their male counterparts. This latter finding can likely be explained by the time constraints that women typically operate under in balancing work and personal life in technical careers. Women are implicitly channelled to concentrate on research and afforded little time to engage in the “politicking” required for organizational advancement in any regime (Gupta et. al. 2004).

Various European-wide and individual country initiatives have been taken to remedy the barriers to women’s participation in innovation and the entrepreneurship gap among women. A number of organizational efforts have been made and new networks have been created across Europe to promote women’s entrepreneurship, including in high-tech fields. ProWomen En-Promotion of Women Entrepreneurship in 16 European Regions is a Network for exchange of best practices (Women-entrepreneurs@ec.eu.int). There is a growing call for improving the rate of women’s participation in start-up activity. For example, in the U.K., the Cambridge MIT Institute offers mid-career short course in entrepreneurship and innovation for women in S&T professions to encourage them to undertake start-ups (www.admin.cam.ac.uk/news). Women Entrepreneurship Development in Sofia and Vratsa Bulgaria focuses on training exercises in business and marketing plans. The Finland Central Association of Women Entrepreneurs has developed a programme for Networking Women entrepreneurs across frontiers (www.yrittajanaiset.fi).

Most professional groupings, regardless of the numbers of women exhibit patterns of hierarchical sex segregation. Women legal and medical professionals, whilst displaying near numerical parity with men, are subject to marked vertical sex segregation, resulting in major salary differences between equally qualified women and men (Anleu, 1992; Riska & Wegar, 1993; Schultz and Shaw, 2003). So also are women scientists, regardless of whether they are located in low or high presence scientific fields (European Commission, 2000). One explanation for this is the phenomenon of ‘territorial sex segregation’ and ‘ghettoisation’ (Rossiter, 1982; 1995). As the supply of qualified women rose and new opportunities in scientific work emerged from the development of ‘big science’ and the need for large staffs of assistants in research centres, women were sidelined into fields that were low in status and disregarded as mainstream science. This implied marginalization and underutilization of women. However, in recent years, some territorially distinct areas are being re-valued with significant implications for women in science and technology. As certain ancillary tasks relating to the economic and social uses of science become more important, so do the holders of those positions. It is noteworthy that women, whether they have actively sought positions in the new uses of science or been sidelined into them, have attained leadership roles in such venues as European Union research networks and US technology transfer offices. We aim to isolate factors that differentiate these organisations from the traditional ones so as to understand whether women can retain their prominence in emerging fields, such as technology transfer, or whether historical patterns will hold with women being pushed out as the status of a field rises. As the role of science in society changes, we may expect greater territorial integration.

**Gender Division and Separation**

A general gendered separation of labour in S&T may be identified, with women focusing on the biological sciences and medicine and men on the physical sciences and engineering. Similar phenomena may be observed at more fine-grained levels within particular medical, nursing and engineering subfields. These bifurcations have traditionally been associated, with significant status differentiation between male and female professionals (Etzkowitz, 1971).

Cultural and gender differences have been noted between and within the engineering and the physical sciences and the biological and medical sciences (Smith-Doerr, 2004). The meagre presence of women in industrial research (15%) has been found be even more lacking than in the public sector (30%) in Europe. The FLOSPOLS activity (IST-FP6) provides a European indicator of participation
of women in non-traditional scientific and technical areas. In this instance women have a lower rate of participation in Open Source Software development (5%) in comparison to (25%) to proprietary software development. Over the last few years however it has become evident that developments in work and employment have affected different groups of women in different ways. Whilst the majority of women remain concentrated in low-skilled, often insecure areas of work suffering the negative consequences of restructuring, a number of women are increasing their share of employment in secure, full-time managerial and professional jobs. And it has been claimed that within some organisational structures women managers are beginning to actively challenge patriarchal management structures and frameworks (see Maddock 1999).

A number of authors have commented that the rise in the numbers of women in employment and their progression up organisational hierarchies is undoubtedly closely linked to increased levels of educational achievement amongst women (Crompton, 1997; Walby, 1997) coupled with an increasing awareness of equal opportunities issues, both within organisations and in terms of employment policy in general, notably at the level of the European Union (see Rubery et al, 1999). Processes occurring inside organisations have also played a crucial role in shaping the experience of women in the workplace with increasing emphasis placed upon ‘less hierarchical, more empathetic and co-operative styles of management’ (McDowell 1997:11). This has taken place alongside the ‘flattening’ or ‘de-layering’ or organisational structures and an emphasis on the importance of teamwork. In some sectors and occupations of the emerging new areas of science and technology women remain persistently underrepresented, while in others women seem to be gaining ground. This contrary phenomena needs to be understood in the context of the organisational processes, institutional and social factors.

The proposed project will enhance the state of the art by developing indicators on women’s participation and career satisfaction in TIE organisations. This is a new data resource that will fill gaps in existing knowledge. Partners will also undertake case studies of both flat and hierarchical organisations to test two competing hypothesis currently within the women and science literature to establish whether the patterns of participation and advancement are similar within TIE organisations. Smith Doerr (2004) has asserted for example that biotechnology firms, with their flat organisational structures and emphasis on teamwork and cooperation, provide a better environment for women. In such organisations, networking skills are more highly rewarded. This is in contrast to that made by other scholars (summarised by Padavic and Reskin 2002) that in order to have equal opportunities for promotion, women need the formal policies, rules and long job ladders that large bureaucracies offer. Where there is evidence that women have succeeded within particular types of organisations researchers will isolate those factors that differentiate that form of organisation from the others, examining whether differences can be attributed to particular structural or organisational characteristics or are a consequence of different forms of science. In addition the team will identify good practice by organizations that overcome gender inequalities and enhance career development opportunities for female employees. The project will provide an examination of those factors that lead to women becoming leaders or researchers in innovative enterprises.
3. **Relevance to the objectives of the Science and Society programme**

This project links two key issues:

(i) the role of science and technology in economic growth; and

(ii) gender equity in S&T.

These two issues have been highlighted by the European Parliament, which has stated that, “European competitiveness depends upon innovation, including research and development and technology transfer” and that it “Approves the aim of collating a more comprehensive set of statistics on the involvement of women in different fields of science and research” (European Parliament, 2000). Most fundamentally, the project contributes to continuing effort in Europe to realize the objectives of Articles 2 and 3 of the Treaty establishing the European Community by analyzing the role of women in the transfer and entrepreneurial aspects of S&T, so that it can better “make a joint assessment of ongoing policies, taking into account benchmarking and best practice in Member States” (Council of the European Union, 1999.)

The project to develop statistical indicators of women in S&T interface professions will advance the Lisbon objectives of enhancing the utilization of science in the European economy, the Barcelona target of R&D expansion as well as operationalise proposals in the Commission’s “Science and technology, the key to Europe’s future—guidelines for future European Union policy to support research.” The Report states that, “A systematic analysis of the interplay between science and society is needed. Gender research can add perspective, stimulate new methodologies and is a driver for innovation. Specific issues exist and should be addressed in well-focused research areas. One of these issues is the role of women in the TIE professions that are crucial to achieving throughput from the expansion of R&D.” The report specifically states that “The role of women in the areas of innovation, entrepreneurship, patent creation, technology and ICT development, needs to be stimulated and requires more in-depth analysis.” (p.14)

These concerns are not entirely new. “Equity, Excellence, Efficacy and Efficiency” were the watchwords of the International Workshop organized by the Commission of the European Community (Logue and Talapessy, 1993). The underlying theme of the meeting was that under representation of women in S&T professions due to gender discrimination represented a loss of human resources investment and lesser performance of Europe in S&T given that increasing numbers of women were being trained in S&T, but not allowed to realize their full potential in all aspects of the scientific and technological enterprise. During the more than a decade that has passed since this landmark workshop, two key events have occurred that have sharpened the issues raised: (1) increased awareness of the role of S&T in future of Europe as set forth in the Lisbon Agenda and the (2) institutionalization of women and science issues within the Commission through the Women and Science Programme.

In 1991 the US National Research Council stated that identifying new opportunities for women to “take their places besides men in S&T was the key agenda item for the 1990’s. The opportunities that the Committee on Women in Science and Engineering (CWSE) focused on were the laboratory and the need to increase participation of women to contribute to “high tech economic growth” through research. There has been relatively little note taken of the participation of women in TIE’S other than in individual situations (Owen-Smith, 2005).
4. **Potential impact**

The indicators of the participation of women in the professions at the intersection between science and the economy, produced through this project, will focus attention on the role of women in science and enterprise. It is expected that these human capital indicators of Transfer, Incubation and Entrepreneurship (TIE) will contribute to:

- resolving the so-called European Paradox of a gap between research productivity and economic growth,
- providing a better understanding of the “Gender Gap,” the increased numbers of women trained in science and technology and the significantly smaller numbers of women participating in S&T professions.

4.1 **Exploitation and dissemination plans**

The dissemination plan will be executed at three levels of scientific contribution, policy development and public understanding of science, in various combinations. For example:

(i) The data developed in this project is intended to feed into the work of the Helsinki Group on Women and Science in two ways:

- the bi-yearly discussions of the Helsinki Group, whose remit is “...to explore the ways in which the potential, skills and expertise of women could best be secured.... The WIST agenda of participation and advancement of women in the S&T interface professions could be a subject for discussion at one of these meetings for “sharing and comparing experiences.”
- the work of the Statistical Correspondents of the Helsinki Group since an outcome will be new statistical indicators focused on S&T interface that could be considered for adoption by the various national participants as well as by the EU itself.

(ii) The data developed in this project could also provide a good basis for policy-making by national governments willing to improve gender equality and women’s participation in S&T and related fields.

(iii) The project results could provide significant input for the activities of several United Nations agencies dealing with gender issues, such as the UN Commission on Science and Technology for Development and its Gender Advisory Board, the Division for Advancement of Women (DAW), UNIFEM, etc.

(iv) Articles will be drafted for the Policy Forums in Science and Nature. These pieces will be the basis for a broader information strategy in the print and digital media. This will include distribution of memos with suggested follow-up article and discussion topics to reporters from the science and business press, the construction of a website at WISE and the distribution of a blog.

(v) Talking points will be developed around the objectives of the Lisbon Agenda and the increasingly widely recognized fact that Europe can ill afford to continue to lose a significant portion of half its brainpower. Moreover, the point will be emphasized underutilization of trained women in science and technology is a waste of resources, However it will also be pointed out that these resources can be efficaciously utilized through women’s participation in translating science into use as well as making new discoveries at the “bench.”

(vi) Dissemination plans will also include an end of project workshop to critically evaluate the instruments developed during the project and to provide a platform for discussion between policymakers and those whose central interests relate to women and science and a conference to disseminate the findings of the project to a wider group of academics and policy makers.
4.2 Contributions to standards

The project will produce the first indicators of the participation and advancement of women in the interface professions of transfer, incubation and entrepreneurship (TIE) at the intersection between science and the economy. Given that these indicators will be derived from a research programme based upon a small, diverse sample of countries, it is projected that the scale-up process to the thirty member states will follow efficiently.
5. **Consortium**

5.1 **The Partnership**

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<th>Country</th>
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<tr>
<td>UK</td>
<td>Prof. Henry Etzkowitz, Prof Judith Glover, Dr Catherine Hodgson, Cheryl Conway</td>
</tr>
<tr>
<td>Germany</td>
<td>Mr Stefan Fuchs, Dr. Corinna Kleinert, Juliane Achatz</td>
</tr>
<tr>
<td>Romania</td>
<td>Dr Marina Ranga,</td>
</tr>
<tr>
<td>Finland</td>
<td>Professor Marja Vehvilainen, Dr Oili-Helena Ylijoki,</td>
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</table>

The consortium was selected on the basis of a number of criteria:

- The team has an unparalleled reputation in research on women and science, women in the labour market and the representation of women across various occupations;
- The team has a clear understanding of the policy and theoretical framework within which women and science is situated;
- The team is multidisciplinary, and has expertise in qualitative and quantitative research methods, developing methodologies, conducting focus groups and face to face interviews and also undertaking organisational ethnographies;
- All teams have access to networks of women and science informants within their respective countries;
- All members of the team have worked with the policy community and can bring to the project existing contacts through which the results can be effectively disseminated and applied.

5.1.1 **Institute for Policy and Practice (IPP) - Women Innovation Science and Enterprise group**

The IPP is an internationally-recognised focus for applied social science in the University of Newcastle, bringing together a set of research centres and individual researchers, to stimulate interdisciplinary and multidisciplinary projects. One new grouping which has been established is the Women in Innovation, Science and Enterprise (WISE) group. WISE brings together an interdisciplinary grouping of Newcastle University's researchers on Women in S&T, Enterprise and Entrepreneurship, creating a critical mass in this field. WISE draws upon staff from the Centre for Urban and Regional Development Studies (CURDS) and emerging centre for Knowledge, Innovation, Technology and Enterprise (KITE). Both these centres are built around staff with extensive experience of participation in international research projects including many framework programme projects from FP3 to FP6 and the new WISE group consists of five researchers with an extensive international network of collaborators. The IPP provides an effective research infrastructure for its constituent parts including administrative support for projects and a well endowed research environment.

**Henry Etzkowitz (Lead Partner)**

Henry is chair in Management of Innovation, Creativity and Enterprise at the Business School of the University of Newcastle-Upon-Tyne and is Director of its Women, Innovation, Science, Enterprise (WISE) Research Unit. He has conducted extensive research on women in science, supported by the National Science Foundation, in the United States. He is a participant in the Florence Gender and Excellence process, sponsored by the European Union, and will present this programme at the American Association for the Advancement of Science. Henry is a leading researcher on university-industry relations and is co-founder of the Triple Helix international conference series on university-industry-government relations (Amsterdam, 1996; New York, 1998; Rio de Janeiro, 2000; Copenhagen, 2002, Torino, 2005, Singapore, 2007 ) [www.triplehelix5.com]. He has published extensively on women and minorities in science, academic-industry relations and science and technology policy.
Selected Publications

Women in Science: A Fair Shake? (With Gupta) *Minerva* in Press


Incubation of Incubators: Innovation as a Triple Helix of University-Industry-Government Networks *Science and Public Policy*, April, 2002


Athena Unbound: The Advancement of Women in Science and Technology (with Kemelgor and Uzzi) Cambridge University Press, 2000


Judith Glover

Judith is Professor of Employment Studies and Assistant Dean (Research) in the School of Business and Social Sciences and will be involved in the project as a visiting professor. Judith has research interests in women's employment, with particular reference to women and scientific employment. Included on the European Commission list of experts on specific science and technology policy issues, her work has been funded by the ESRC and the European Commission Research Directorate General. She has worked with the Research Directorate General as a member of the ETAN/STRATA Expert Group on the situation of women scientists in Central & Eastern Europe and the Baltic States. She is on the European Commission list of experts on specific science and technology policy issues.

Selected Publications


5.1.2 Institute for Employment Research (IAB)

Since 1967 the Institute for Employment Research ("IAB") has been operating as the Federal Employment Services ("Bundesagentur für Arbeit") research institution. IAB was established to provide a sound scientific basis which would be required if the Federal Employment Services wanted to perform their duties with foresight. The IAB provides the single largest data base on German employees in Germany, covering all employees who pay social security, as well as extensive data on companies and economic branches. As indicated by the name of the institute – “Berufsforschung” - occupations form a central area of research and study. For the project, the data of the institute could be analysed with the particular focus on women and science. Research activities are defined in consultation with the Federal Ministry of Economics and Labour; the regular, swift and complete publication of working reports and results ensures the public airing of such research. The following key-words describe the IAB’s work: own research work, surveys, theoretical and methodological basic work, information and documentation, medial transformation of research results, advisory function in policy matters, coordination of relevant research activities,
improvement of labour market statistic, maintaining close links with university research, commissioning research projects.

**Stefan Fuchs (Lead Partner)**

Stefan is head of the regional research network at the Institute for Employment Research (IAB) in Nuremberg. He has conducted extensive research on women in science, supported by the National Science Foundation, the Max Planck Society, the Volkswagen Foundation and the Robert Bosch Foundation. In 2002 he reviewed the situation of women in science in Germany for the Enquete Commission on Globalization of the German Parliament. This year he finished a project on the situation of women in veterinary medicine in Germany.

**Selected Publications:**


2004: Attitudes Toward Gender, Work, and Family Among Men and Women Scientists in Germany and the U.S. *Journal of Women and Minorities in Science and Engineering* Vol 10, S.99-129 (with Sandra Hanson, Silke Aisenbrey and Nataliya Kravets).


**5.1.3 National Centre for Programme Management**

National Centre for Programme Management was created as a national structure with the key mission to evaluate and monitor the research programmes launched at the national level. NCPM’s mission is to appropriately coordinate the whole range of activities related to programme/project management, especially those associated with the National Plan of Research, Development and Innovation. NCPM performs three main functions: to manage programmes of scientific research, technological development and/or innovation, partially or totally financed by the Ministry of Education and Research; to manage other programmes of scientific research, technological development and/or innovation, financially supported by other sources; to carry out related activities. The Centre performs many activities including: organizing competitions meant to achieve the objectives of the programmes; assessing and selecting the projects participating in the competitions; providing consultancy and technical assistance supporting the process of elaborating and running the projects; training and improving human resources, in order to ensure a professional programme/project management, by organizing training sessions and maintaining an on-going process of formation; disseminating programme-related information on a national and international level. The NCPM co-ordinates three major programmes of the National RDI Plan: CORINT (International Cooperation and Partnership); BIOTECH (Bio-technology); INFOSOC (Information Society). NCPM is deeply involved in the elaboration of national strategies in research, development and innovation and the dissemination of research results. The centre works towards facilitating the contact between academic research bodies, private companies and public authorities.
Marina Ranga (Lead Partner)

Marina is a founding member of the Romanian Committee on Gender in Science and Technology, set up in 2001 with the goal to promote women’s participation in S&T and the development of R&D projects with significant impact on women's work, particularly in rural communities and less favoured areas, and to work towards the build-up of a National Programme on Gender in S&T. Since 2003 she has been working as a Country correspondent for Romania in DG Enterprise’s ‘Innovation TrendChart’ and authored the 2004 and 2005 editions of the Country Report ‘Annual Policy Trends and Appraisal Report for Romania’. Recently, she became an Associate Member of DG Research’s initiative ERAWATCH Network, covering different innovation issues in Romania. Her knowledge of the Romanian RDI system also relies on her former work as Head of the Foreign Affairs Department of the Ministry of Research and Technology of Romania. Marina is Assistant Professor of Innovation Management in the Faculty of Management and Organisation of the University of Groningen, the Netherlands. Marina’s research interests focus on different aspects of University-Industry links and academic entrepreneurship, including women’s participation in science and technology and related fields. She will be involved in the project as the co-ordinator of the Romanian partner team. Since 1995 Marina has been a member of the Gender Advisory Board (GAB) of the UN Commission on Science and Technology for Development (UN-CSTD) and has worked with other UN agencies, such as the UN-CSTD and the UN Economic Commission of Europe as a representative of Romania.

Selected Publications


5.1.4 Research Group for Science, Technology and Innovation Studies (TaSTI)

TaSTI was founded in 2002 by combining two existing research groups at the University of Tampere: the Science Studies Unit and the Research Group for Innovation Systems and Organisational Learning. TaSTI carries out multidisciplinary research that helps to understand the functioning of science and technology systems and the processes of generating knowledge and innovations. Currently TaSTI has 19 members. The research is funded from various external sources, such as the Academy of Finland, the National Technology Agency and the EU. The current focus areas of TaSTI’s research are the following: Utilization and impacts of research; The regionalization and internationalization of science, technology and innovation activities; The functioning of research communities and change in academic cultures and identities; The structure and socio-epistemic boundaries of knowledge; Business environments, organisational innovations and the development of competencies; Indicators and evaluation of R&D; Development of Finnish science, technology and innovation policies

Marja Vehviläinen

Marja works currently as a Professor in Women’s and Gender Studies at the University of Tampere. She has studied and supervised research in gender and technology studies in the context of professional developers of technology and organisations as well as the uses of technology and
information society, and she has published broadly both in national Finnish and international forums. She has been a member of a Nordic research network on Information Technology, Transnational Democracy and Gender and of the programme committee in several international conferences on gender and technology. Research methods used in her studies include oral histories, autobiographies, theme interviews, organisational ethnographies, and text analysis. She is currently developing a new research project on the nexus of gender, expertise and technology by focusing on professionals in internationally networked ICT companies.

**Selected Publications**


Please see appendix 1 for details of other researchers involved with the project.

**5.2 Scientific Advisory Board**

A Scientific Advisory Board will bring additional expertise to the project in the areas of TIE organisations, gender and SET, and statistical methodology.

**Membership**

David Ferguson - Distinguished Professor and Chair, Technology and Society Department, School of Engineering and Applied Sciences, Stony Brook University (SUNY). David will provide statistical expertise.

Namrata Gupta - Indian Institute of Technology at Kanpur, India

Jan Peters - Managing Director of Katalytik (from January 1999 until March 2002 Jan was head of the DTI Promoting SET for Women unit and a member of the European Commission Helsinki Group.)

Helen Pickering – Deputy Vice-Chancellor of the University of Teesside. She is a Board Member and Chair of the Executive Committee of Universities for the North East

Mariana Saad - Scientific Attaché, Humanities and Social Sciences French Embassy in the UK

Luis Saenz - Director, International Science Park Association, Barcelona.

Londa Schiebinger - Finberg Director, Institute for Research on Women and Gender

Laurel Smith- Doerr - Assistant Professor of Sociology, Brown University, Stanford University
6 Project management

The overall project management will be provided by the Institute of Policy and Practice (IPP), and will be under the direct supervision of Professor Henry Etzkowitz assisted by experienced IPP administrative and secretarial staff. A dedicated research administrator will be appointed to work on the project part time to ensure effective co-ordination. The University of Newcastle Business Development Division will be responsible for the administration and distribution of finances to the other partners. Extensive previous experience of leading projects in the Framework programme will ensure that the administration will be handled efficiently and according to the correct procedures.

Each of the teams involved in the project has nominated a local project manager who will be responsible for the supervision of the work and the administrative arrangements within that organisation. The project managers will comprise a management team for the project, and will meet at four to six-monthly intervals at alternate locations around the network. It is intended that the project managers should be familiar with both the scientific progress and the finances, in order to facilitate timely response to any queries that may emerge. This group will be responsible for the collective monitoring of timetables and outputs, for ensuring that financial arrangements are adhered to, and for planning the dissemination of the results of each module of work. A more detailed financial breakdown is shown below and clearly shows that the overall financial planning for the project is adequate.

Responsibility for each workpackage is shared out amongst the members of the team, and most workpackages involve several members working in collaboration. In each case the additional time involved in undertaking such supervisory tasks has been added into the workpackage itself, and the nominated workpackage leader will be accountable to the overall project manager for the deliverables for that workpackage.
<table>
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<tr>
<th>Participant Role</th>
<th>Participant No</th>
<th>Participant Short Name</th>
<th>Number of person/months</th>
<th>Personnel Costs</th>
<th>Durable Equipment</th>
<th>Consumables</th>
<th>Travel and Subsistence</th>
<th>Dissemination Activities</th>
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<th>Other specific costs</th>
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**Key**
1 = Newcastle  2 = Germany  3 = Romania  4 = Finland
6.1 The planned schedule of meetings between partners

Month 1: Introductory workshop involving the four teams to discuss methodological and conceptual issues related to the project.

Month 6: Workshop for the four teams to discuss state of the art synthesis and formulate research questions to be explored through the case study work. The TIE Participation measure will also be reviewed. Preliminary thoughts regarding the Career Advancement Index will also be explored.

Month 12: Workshop to review progress of case studies and discuss implementing the TIE Participation measure.

Month 15: Workshop to review variable definitions for Career Advancement Index, refine and revise interview guide and review team progress.

Month 20: Workshop to review team progress regarding in-depth interviews and discuss issues related to the Career Advancement Index. The partners will also discuss project dissemination activities.

Month 23: Dissemination seminar and conference and discussion of final report.

The partnership will additionally use electronic forms of communication for sharing ideas, experiences, findings and results. Drawing from previous experiences, these tools will be actively managed to ensure that they contribute to the shaping of a strong network identity and culture. Partners will also be asked to prepare and circulate regular progress reports. Significant investment in both face to face and electronic communication has been built into the project to ensure the success of collaboration, although all teams have experience of international research collaboration.

6.2 Reporting Procedure

Technical reports will be submitted to the Commission every six months and will consist of progress reports to which will be attached deliverables according to the timetable below. The reports at twelve and twenty four months will cover the whole of the previous year. Financial reports will accompany the reports at twelve and twenty four months, with details of expenditure to date.

6.3 Intellectual Property Agreements

The project will not lead to any specific item of commercially exploitable technology as its objectives are to collect socio-economic data and develop new theories and approaches to policy development. All deliverables will therefore be subject simply to normal copyright protection. In this, each deliverable will be jointly copyright of the teams involved in the production of that document, but all partners in the project will be granted rights to reproduce sections of all project reports and incorporate elements within other documents specified as deliverables from that project. All such documents shall list the names of the principle authors, but give credit to the full project consortium. This is however not intended to infringe on the rights of individual members of the consortium to protect their intellectual property from reproduction in works that fall outside of the description of project deliverables. Thus a member of the consortium will be able to make use of their own intellectual property in academic publications outside of the project, but will not be able to use the intellectual property in academic publications outside of the project, but will not be able to use the intellectual property of another consortium member without the permissions and acknowledgements required by international copyright law.
7. Detailed Implementation plan

7.1 Introduction

Through this four country project, we will produce indices of women’s participation and career advancement in TIE (Transfer, Incubation and Entrepreneurship) professions. We have designed a staged series of research tasks to gather existing information, conduct interviews to explore gender and organisational issues, produce draft indices, and pilot them. Our objective at this stage is to achieve valid indicators; a future project within a greater number of countries will be necessary in order to insure reliability of the measures. We have integrated qualitative and quantitative techniques into our research plan in order to achieve our objectives. Since the area for which we are proposing to produce indicators is a new one, it is important to carefully analyze the issues qualitatively before constructing a quantitative measure.

We expect that a measure of women’s participation in TIE professions at different levels can be designed on the basis of a literature review and discussions with the person in charge of administration within our case study organisations. However, the more subtle issues involved in negotiating work life, and balancing personal life, requires a more complex process of triangulation prior to constructing measures of career advancement, especially since we wish to take different types of organisational designs into account. Thus, we have designed a staged set of explorations through use of informants, focus groups and individual interviews to better understand the interaction between organisational design and gender relations in TIE.

On the basis of previous related research, we have developed some preliminary propositions and hypotheses. For example, the greatest share of licensing and transfer opportunities have occurred in the biological sciences and medicine so women’s concentration in these fields may be expected to carry over into participation and advancement in TIE professions. The shift in focus from the physical to the biological sciences, especially in the economic uses of science, may have played a role in opening up these fields to greater participation by women, for example, in biotechnology firms (Smith Doerr, 2004). Rather than women being pushed out as the status of a field rises; women may be holding their beachhead in these emerging TIE fields (Etzkowitz and Gupta, In Press). We expect that women’s presence in the emerging sector of public private interface in S&T will be higher than industrial research in general. If it differs significantly and positively, there may be significant lessons for other spheres to learn in attracting women’s participation and promoting their advancement.

7.2 Sample design

Our sample design is structured at three levels: national, organisational and individual. We have selected four countries (Finland, Germany, Romania and the United Kingdom) with significant differences in gender relations, scientific systems and interface characteristics. These countries have been selected to exemplify conditions that will be found across the EU. This will allow us to generalize the indicators developed in this project to a broader range of EU countries in the future.

Country Characteristics

Finland has a strong tradition of egalitarian social relations which has recently led to the institution of strong measures to bring about equal participation of women in all spheres of society, including science and technology. Finland is noted for having a balanced university and research institute S&T system and an emergent tradition of high tech start-ups, especially in IT.

Germany has a tradition of traditional gender relations that has marginalized women in S&T, although there have been recent initiatives for change. The public S&T system is led by a strong research institute sector with universities as second level players, although that is changing. The Institute sector includes a set of strong specialized institutes targeted at meeting industry’s needs, these include the Max Planck Society and the Fraunhofer Society.
Romania has an official egalitarian system of gender relations rooted in the previous regime that led to a high level of participation of women in S&T, although in many scientific domains leadership positions are often occupied by men. The current RDI system is composed of a mix of (i) technological research institutions (about 85 percent), performed by national R&D institutes, public research institutions and private firms with R&D activities, (ii) natural, exact and socio-humanistic research institutes of the Romanian Academy and branch academies (Academy of Agricultural and Forestry Sciences and Academy of Medical Sciences) (about 10 percent), and (iii) public and private universities (about 5 percent). An increasing role is played by innovation-related institutions, such as science parks, technology and business incubators, etc., which complement the public and private research institutes as the locus of transfer activity.

In the United Kingdom the representation of women in many scientific fields has shown slow change over several decades. In university science-based employment, women are concentrated in low level positions, even in those fields where their overall representation is relatively high. In many Information Technology departments, women students and staff are almost entirely absent. The main thrust of government activity comes currently from the Department for Trade and Industry which has funded a UK Resource Centre for Women in Science, Engineering and Technology which provides information and advice to employers and potential employees. Retention of qualified women scientists is a key issue, following a report that showed very high levels of drop-out from scientific employment.

Organisational Characteristics

Organisational types have been selected to exemplify the different types of interface mechanism among university and industry, and government for the translation of research results into economic activity, both intermediaries and subsidiaries. Although most countries will have examples of all types, there are strong national differences in emphasis. Examples include technology transfer offices, start-ups, science parks, incubators venture capital firms, intermediary organisations, European Union (and similar) Research Networks, R&D funding agencies. We expect to identify different types of hierarchical and flat organisations which will enable us to investigate hypothesis related the conditions which best facilitate participation and advancement.

Individual Characteristics

We will identify the presence and position of women within different TIE organisations. We wish especially to identify women scientists who have successfully translated their research background into careers in the transfer and interface professions. We expect this may be accomplished through additional education in business or law. Conversely we expect to identify women with business and legal backgrounds who have picked up technological expertise, either through additional education or through worklife in the transfer and interface. We hypothesis that it is these hybrid individuals that are the key to successful interface.

Development of indicators

Through this project we are developing measures of women's participation and career advancement in TIE organisations. In addition, we wish to understand the difference both within and among organisations and countries. Any attempt to look at participation and career advancement must be in relationship to some real or perceived categories (with some categories being more valued than others). In order to accomplish these objectives we need to take several preliminary steps such as characterising TIE job categories and job functions. Such a characterization of job categories/functions will help us to get a handle on the participation issue and will enable us to address a number of questions such as:

- how is "career advancement" defined in different types of organisations and in different countries?
- are there clearly defined career paths that might be identified with some weighting scheme that might be applied to determine the value of various paths?
• how does time in a specific job category/function affect the overall measure of advancement? (For example, moving from A to B to C, with each stage taking 5 years is different from moving from A to B to C where A takes 5 years, B takes 2 years, and C takes 6 years).

Thus, we will need to develop measures of job categories/function and measures of advancement paths.
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7.4 Graphical Representation of Project Components

- WP1: Introductory Workshop
- WP2: Review of State of the Art
- WP3: Case Studies of TIE Organisations
- WP4: Qualitative Interviews
- WP5: Career Advancement Index
- WP6: Dissemination Activities
### Workpackages

<table>
<thead>
<tr>
<th>Workpackage No(^1)</th>
<th>Workpackage title</th>
<th>Lead contract or No(^2)</th>
<th>Person-months (^3)</th>
<th>Start month (^4)</th>
<th>End month (^5)</th>
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\(^1\) Workpackage number: WP 1 – WP n.

\(^2\) Number of the contractor leading the work in this workpackage.

\(^3\) The total number of person-months allocated to each workpackage.

\(^4\) Relative start date for the work in the specific workpackages, month 0 marking the start of the project, and all other start dates being relative to this start date.

\(^5\) Relative end date, month 0 marking the start of the project, and all ends dates being relative to this start date.

\(^6\) Deliverable number: Number for the deliverable(s)/result(s) mentioned in the workpackage: D1 - Dn.
### 7.6 Deliverables

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<td>D8</td>
<td>Management Control and Financial reporting</td>
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<td>R</td>
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7 Deliverable numbers in order of delivery dates: D1 – Dn
8 Month in which the deliverables will be available. Month 0 marking the start of the project, and all delivery dates being relative to this start date.
9 Please indicate the nature of the deliverable using one of the following codes:
   - R = Report
   - P = Prototype
   - D = Demonstrator
   - O = Other
10 Please indicate the dissemination level using one of the following codes:
   - PU = Public
   - PP = Restricted to other programme participants (including the Commission Services).
   - RE = Restricted to a group specified by the consortium (including the Commission Services).
   - CO = Confidential, only for members of the consortium (including the Commission Services).
7.7 Workpackage description

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**Objectives**
The objective of this workpackage is to have an introductory workshop for the country teams to discuss methodological and conceptual frameworks for the research programme and division of labour.

**Description of work**
In preparation for the meeting each team will prepare an overview statement of the state of the art of Women in Science in their country and the organisational pattern of TIE organisations and professional groups.

**Deliverables**
A synthetic background paper will be produced from these documents and the comparative analysis that is undertaken of them through workshop discussion.

**Milestones and expected result**
Development of a consensus between the four research teams on the research strategy, methodology and priorities for investigation.

A decision will be taken concerning the focus of investigation on TIE organisations in particular countries. Attention will be paid to regional balance.

A preliminary characterisation of TIE occupations and career structures will be developed as the basis for constructing the TIE participation measure.

---

11 Milestones are control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.
Workpackage number | 2 | Start date or starting event: | M2

**Workpackage title:** Review of State of the Art

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| Person-months per participant: | 5 | 5 | 5 | 5 |

### Objectives

To produce a detailed state of the art review of women’s participation and experience in transfer and interface organisations in the context of gender relations in S&T and business firms in the sample countries to provide context for the focus on gender issues in TIE organisations and professions.

### Description of work

Partners will firstly undertake a national policy level analysis which outlines transfer and interface activities within their respective countries and documents their development over time. This will be followed by a review of studies carried out on specific organisational types for example technology transfer offices, incubator facilities, science parks, intermediary organisations to develop early-stage technology for commercialization. Where possible, partners will also aim to review any literature on the individual experiences of women within interface organisations. Contingency Plan. If literature is not available, interviews with key informants will be undertaken e.g. journalists following the issue, parliamentary staff, TIE organisation directors. A TIE Participation measure will be formulated.

### Deliverables

A report which synthesises the state of the art reviews and/or report of interviews with informants on women and TIE organisations.

### Milestones\(^{12}\) and expected result

A synthesis paper from the various state of the art reviews discussed above will be produced. The report will be presented and discussed at a consortium meeting, which will include members of the Scientific Advisory Board, on the basis of which a number of hypotheses and specific research questions will be formulated to be explored through focus groups and in-depth interviews in the next phases of the project.

The TIE Participation measure will be reviewed by Country Team Leaders, the Scientific Advisory Board and key informants. Preliminary thoughts regarding the Career Advancement Index will also be exchanged.

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\(^{12}\) Milestones are control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.
Workpackage number | 3 | Start date or starting event: | M7

**Workpackage title: Derivation of Measures and Indices**

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**Objectives:**

We have dual objectives; 1) collection of data on women’s participation in TIE organisations to derive and validate the TIE Participation Measure especially the TIE occupation category definitions to determine whether the field is adequately specified. 2) to collect background material and qualitative data to allow us to formulate the components for the Career Advancement Index.

**Description of work**

Case studies of the origin, development and current working practices of 6 TIE organisations will be produced in each country. Partners will identify organisations through interviews with directors and members of TIE organisations, professional organisations and networks within each country. Documentary materials will be collected including internal and external evaluations, background reports, interviews with long time members and observers of these organisations will also be undertaken.

The person in charge of administration in each organisation will be asked to provide information on women’s participation; we will also attempt to collect time series data to the extent that it is available. This data will then be used to populate the TIE Participation Measure.

To develop the components of the Career Advancement Index we will then undertake six focus groups of women and men on issues related to advancement within TIE organisations. We will consider the following issues:

- gender relations;
- evidence of facilitating factors - role-models, mentors; collegiality;
- working conditions;
- evidence of social networks, communities of practice, professional associations, cross organisational co-operation/support/learning.

A report on the findings from the focus groups will be prepared by each country team.

Based on the Focus Groups an interview guide will be developed which will be used during in-depth interviews with women in the next phase of the research. We envisage that the interview guide will include questions on:

- the educational and career history of women;
- the career trajectories of women;
- the ‘lived experiences’ of women including issues related to work life balance;
- the extent to which women amass and benefit from social capital;
- whether barriers to employment and progression exist within one form of organisation rather than another;

The Newcastle Team will propose variable definitions for the Career Advancement Index for review and comment by the other teams. The comment period will include consultation with colleagues and informants and review by the Scientific Advisory Board to insure that we have well specified variables.
**Deliverables**

A report on the findings from the focus groups will be prepared by each country team.
A TIE Participation Measure with data from 24 organisations across four countries.
A comparative analysis of these findings will be produced; the analysis will include a discussion of the effect of organisation formats on women’s participation, career advancement and presence in leadership roles.

**Milestones** and expected result

Derivation and validation of the TIE Participation Index.
The constituent elements for the TIE Career Advancement Index will be specified.
Country team leaders will meet to review proposed variable definitions for the Career Advancement Index and arrive at a consensus for its contents in consultation with the Scientific Advisory Board.
This phase of the project will give us the basis for developing an in-depth interview guide for the next phase of the work.

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13 Milestones are control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.
Workpackage number | 4 | Start date or starting event: | M15

**Workpackage title: Deriving the Career Advancement Index**

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**Objectives:** To pilot an instrument for collection of data for the Career Advancement Index in TIE organisations in the four countries.

**Description of work**
The interview guide will be tested initially in pilot interviews with women in TIE organisations.
Partners will revise interview guide in light of any discrepancies highlighted during the pilot interviews before undertaking in-depth interviews with 25 women within TIE organisations in order to gather data for the Career Advancement Index.

**Deliverables**
A report based on country level analyses of the themes based on data from the interviews.
A report based on comparative analysis of the interview data across partner countries.

**Milestones and expected result**
The interview data will be used to validate the Career Advancement Index to insure that we have specified appropriate categories, derived from the experiences of members of TIE professions.

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14 Milestones are control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.
Workpackage number | 5 | Start date or starting event: | 20
--- | --- | --- | ---
Workpackage title: Validating the Career Advancement Index

<table>
<thead>
<tr>
<th>Participant id</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person-months per participant:</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Objectives:**
To refine and validate the Career Advancement Index in TIE professions.

**Description of work**
A rating guide will be produced by the partners for analysts to use in determining individual scores in association with stage in career. Two analysts will review each interview and produce a rating. In cases where there are differences, they will discuss and arrive at a consensus. The individual rating will be summed into a measure. Partners will undertake preliminary preparations for a workshop and conference to validate and disseminate the project instruments.

**Deliverables**
A piloted Career Advancement Index for TIE professionals.

**Milestones\(^{15}\) and expected result**
A piloted Career Advancement Index for TIE professionals.

---

\(^{15}\) Milestones are control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.
**Workpackage number**: 6  
**Start date or starting event**: M23  

<table>
<thead>
<tr>
<th>Workpackage title: Dissemination Activities</th>
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<tbody>
<tr>
<td>Participant id</td>
</tr>
<tr>
<td>Person-months per participant:</td>
</tr>
</tbody>
</table>

**Objectives**: To receive feedback from the policy and academic community on the instruments developed in the project. To disseminate the results of the project through an academic and policy makers conference.

**Description of work**
Partners in association with the Scientific Advisory Board will invite key agents to a workshop, the purpose of which will be to (1) critically evaluate the instruments developed during the project; (2) to explore their policy relevance; (3) to consider future research directions; and, (4) to create a platform for dialogue between policy makers and those whose central interests relate to women and science.

Partners in association with the Scientific Advisory Board will undertake the organisation of an academic and policy-makers’ conference to further disseminate the results of the project.

**Deliverables**
- Workshop Proceedings
- Conference Proceedings

**Milestones** and expected result
The workshop contributes to validating the research project, policy formation and network building.

The conference will further disseminate the results of the project beyond the project teams and the Scientific Advisory Board.

---

16 Milestones are control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.
**Workpackage number** 7  
**Start date or starting event:** M24  
**Workpackage title: Final Report**  
**Participant id** 1 2 3 4  
**Person-months per participant:** 1 1 1 1

<table>
<thead>
<tr>
<th>Objectives</th>
<th>To produce a final report based on earlier synthesised findings plus feedback from the workshop, incorporating new material where available.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Description of work</th>
<th>This workpackage will consist of production of the final report and the dissemination of this material to relevant partners and other organisations. The workpackage will include the planning of further publications of the results in the scientific literature.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Deliverables</th>
<th>Final report and administrative reports for the Commission</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Milestones and expected result</th>
<th>The Final Report will address all of the questions raised in the proposal and incorporate methodological developments made during the research.</th>
</tr>
</thead>
</table>

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17 Milestones are control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.
<table>
<thead>
<tr>
<th>Workpackage number</th>
<th>8</th>
<th>Start date or starting event:</th>
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**Workpackage title: Consortium Management Activities**

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<td>0</td>
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**Objectives:** To present the project in external matters of technical, financial and administrative nature and to co-ordinate and liaise with CEC and with other FP6 projects/initiatives;

**Description of work**
- overall co-ordination of the activities and output of the project;
- management and reporting on administrative and financial aspects;
- co-ordination and liaison with other FP6 activities and projects

**Deliverables**
Management Control and Financial reporting

**Milestones** and expected result
High quality and timely execution of project work

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18 Milestones are control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.
7.8. Risk management

The overall project manager will be responsible for risk assessment during the project. At the beginning of the project the risks and their potential impact and related costs are assessed, the overall project manager is responsible for evaluating the likelihood of the risk and planning preventive actions. Risk management will be a regular item on agenda for consortium meetings and thus emerging risks will be reacted to in timely manner.

7.9 Other issues

7.9.1 Gender issues:

The issue of women within science is central to the objectives of this study and there is clear evidence throughout the proposal that gender issues constitute the main theme. Partners will also identify good practice by organisations that overcome gender inequalities and advance career opportunities for women. Through the exploitation and dissemination of the project partners will contribute to many of the debates on Women and Science currently underway and will add value to the existing knowledge pool by the provision of new indicators and statistical information. An end of project conference will disseminate the findings of the project to a wider audience of academics and policy-makers concerned with Women and Science.

In addition we have explicitly sought to include within the partnership a strong presence of women researchers in senior roles to implement and manage the project. Women are also represented on our Scientific Advisory Board.
# CA Project Effort Form

## Full duration of project

(insert person-months for activities in which participants are involved)

### Project acronym - WIST

<table>
<thead>
<tr>
<th>Co-ordination activities</th>
<th>Participant 1 IPP</th>
<th>Participant 2 IAB</th>
<th>Participant 3 RGC</th>
<th>Participant 4 TASTI</th>
<th>TOTAL PARTICIPANTS</th>
</tr>
</thead>
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<table>
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<tr>
<th>Consortium management activities</th>
<th>Participant 1 IPP</th>
<th>Participant 2 IAB</th>
<th>Participant 3 RGC</th>
<th>Participant 4 TASTI</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
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<td>Total consortium management</td>
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<td>-</td>
<td>-</td>
<td>4.8</td>
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</tbody>
</table>

**TOTAL ACTIVITIES** 28.8 24 24 24 100.8
Ethical issues checklist

Table A. Proposers are requested to fill in the following table

<table>
<thead>
<tr>
<th>Does your proposed research raise sensitive ethical questions related to:</th>
<th>YES</th>
<th>NO</th>
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</thead>
<tbody>
<tr>
<td>Human beings</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Human biological samples</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Personal data (whether identified by name or not)</td>
<td>X*</td>
<td></td>
</tr>
<tr>
<td>Genetic information</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Animals</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

*Where necessary strict measures will be taken to ensure that all personal data collected will be handled in ways which ensure full compliance with relevant national and EU legislation on data protection.

Table B. Proposers are requested to confirm that the proposed research does not involve:

- Research activity aimed at human cloning for reproductive purposes,
- Research activity intended to modify the genetic heritage of human beings which could make such changes heritable,
- Research activity intended to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.

<table>
<thead>
<tr>
<th>Confirmation: the proposed research involves none of the issues listed in Table B</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Further information on ethics requirements and rules are given at the science and ethics website at [http://europa.eu.int/comm/research/science-society/ethics/ethics_en.html](http://europa.eu.int/comm/research/science-society/ethics/ethics_en.html)

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1 Research relating to cancer treatment of the gonads can be financed
8. References


Anleu S (1992) Recruitment Practice and Women Lawyers’ Employment: An Examination of In-House Legal Departments in the United States, Sociology 26: 651-672


FLOSPOLS European Union Sixth Framework Programme (FP6), IST support action http://www.flosspols.org


Annex 1: Other researchers associated with the project

Institute for Policy and Practice - Women Innovation Science and Enterprise group

Cheryl Conway is a Research Associate within the Women, Innovation, Science, Enterprise (WISE) Research Unit at the Institute of Policy and Practice and has over 10 years experience of research on labour market and skills issues using both quantitative and qualitative research methods. Cheryl has worked on numerous projects which have investigated the implications of the restructuring of the global economy on women’s participation in the labour force and has particular expertise related to the migration patterns of highly skilled female workers in regions of the UK and Europe. She has undertaken work for a number of international, national and regional organisations including the European Commission, Department of Education and Employment (DfEE), and the Economic and Social Research Council (ESRC), she has presented her research findings to a variety of national and international audiences.

Selected Publications

Catherine Hodgson is a Research Associate within the Women, Innovation, Science, Enterprise (WISE) Research Unit at the Institute of Policy and Practice. She recently completed her PhD thesis on ‘Product Development Processes in Small and Medium Sized Manufacturing Firms in the North East of England’. Her current research interests lie in the area of regional science and innovation policy and gender and enterprise. Catherine has worked on a variety of research projects using both qualitative and ethnographic research methods including a study recently of men and women within university spin-out companies. She is currently working on an ESRC funded project examining regional science policies across the European Research Area.

Selected Publications

Institute for Employment Research (IAB)

Juliane Achatz is a researcher at the Institute for Employment Research (IAB) in Nuremberg. Her past and current work is on women in science and on the sex segregation of occupations, wages, and labour markets. She published several articles on these issues and her research was supported by the German Science Foundation (Deutsche Forschungsgemeinschaft, DFG).

Selected Publications:


Corinna Kleinert is a researcher at the Institute for Employment Research (IAB) in Nuremberg. She is working on transitions in employment courses, transitions between school and work, educational and employment processes. Her current work is on the representation of women in management in Germany. Until 2003 her research was on the careers of women and men in a large international insurance company.

Selected Publications:


National Centre for Programme Management

Full C.V.s of the Romanian team can be provided upon request

Doina Banciu

Ph.D. in Systems Engineering, Professor. Current work place and position (since 2001):- The National Institute of Research & Development in Informatics, General Director. Published extensively both books and academic journal articles. Doina has worked on a number of research projects for example Government National Research Program Information Society- INFOSOC (Programme Director) 2001 - ; Enabling Grids for E-science in Europe (Programme Director) 2004 - 2006; Project for public services in digital libraries (Project Director) 2004 – 2006.

Nicoleta Cristina


Nicoleta Scanteie

As of 1 January 2005, Nicoleta’s work at the National Centre for Programmes Management, within the National Programme for Information Society INFOSOC, has been mainly about monitoring at national level, all the IT&C projects financed by the Ministry of Education and Research. At the same time she studied for the Master degree in Electronic Public Administration at the University of Bucharest, which she graduated in June 2005.
Florea Cristina

Currently employed at the National Centre for Programme Management, Biotech, as Programme Director. Previously General Director of the National Institute for Research and Development of Biological Sciences.

Adriana – Maria Fianu

Currently employed at the National Centre for Programme Management with economic responsibility of projects. Previously employed at the National Institute for Research and Development in Informatics as an Economist on the INFOSOC PROGRAMME a national program of research, development and innovation.

Ms Roxana Rus

Currently employed at the National Centre for Programme Management as the “NATO –Security through Science” Sub-programme Monitor, as well as the “Research for Excellence” Modul III Monitor. She also worked together with the Diplomatic Body of Romania’s Embassy in Brussels, for several actions meant to improve Romania’s image towards the European integration. She also successfully completed an internship at the European Commission, Unit B2, Structuring European Research Area, Strengthening Cooperation in Research and the European Scientific Base, in the period 16 June – 14 September, 2005. The results of her internship at the European Commission consist, among other projects, of a Statistics Presentation on the General Participation in ERA-NET, during the first 4 calls.

Research Group for Science, Technology and Innovation Studies (TaSTI)

Oili-Helena Ylijoki (PhD), is a senior researcher at TaSTI and a docent of social psychology at the University of Tampere, Finland. She has long research experience in the fields of sociology of science and higher education studies. Recently she has been involved in studying the impact of the changes in science policy and university management on research cultures and academic identities in different organisational settings and disciplines, including technological fields. Her current research interests include gender aspects in researchers’ career paths and identities. She is a member of the board of the Finnish Post-Graduate School in Science and Technology Studies and acts as a reviewer for several international journals. The focus of her research has been on qualitative methods (e.g. biographical interviews, non-active role playing, written narratives) but she has participated also in projects using a quantitative approach (e.g. a large survey of all heads of departments and research units at all Finnish universities).

Selected Publications:


