

**plan***m*  
**Mentoring** for Women Natural  
and Engineering Scientists  
2004–2006

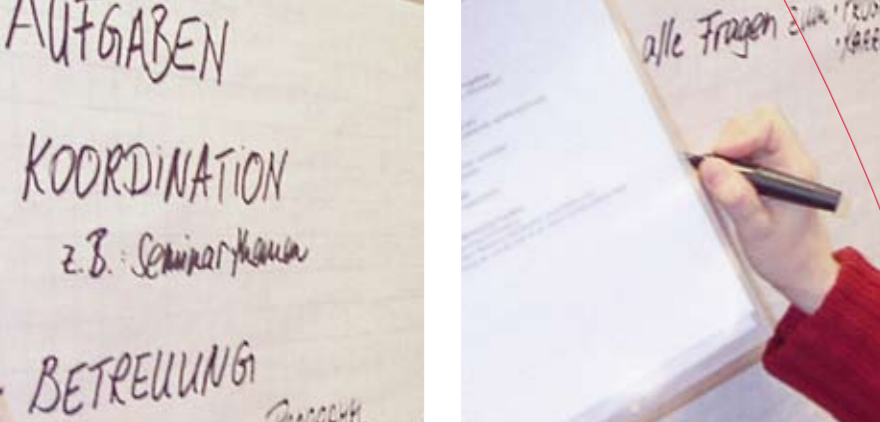
**Evaluation**





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## Imprint

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**Dear Ladies and Gentlemen,  
Dear Readers,**

I am very pleased to be able to present to you the Final Report of *plan m*, the Mentoring Programme for Women Natural and Engineering Scientists aiming for a professorship. It will give you the opportunity to gain a detailed insight into the impacts and, in particular, the benefits that the project provided.

While the twenty-percent share of women professors that Bremen University can boast has earned us a leading position throughout Germany in ranking of equal opportunities policies, the declining share in the percentage of women from graduation up to professorship is no reason to be satisfied. Bremen University does not wish to, and is unable to, do without the skills and potential of a large number of these women scientists and scholars. This is why we have responded to the tilt in the gender balance with a wide range of activities. We have introduced performance-related allocation of funding incorporating an indicator to promote women. Although the higher education science programme has been concluded, we are continuing financial support for women scientists and scholars. We are working towards a framework target agreement in supervising doctorates that also aims at the gender-balanced support of new blood. And we are changing the rules for appointment procedures with the explicit aim of wishing to appoint significantly more women. Furthermore, we are active regarding a wide range of aspects in improving the compatibility of childcare with an academic career.

*plan m* is a programme to promote new blood that has been specially designed for women scientists who have demonstrated excellence with the aim of encouraging women to take up an academic career. We regard implementing the guiding principle of gender balance as a further highly successful

approach. To us, the synthesis of staff development and gender policy seems to be very promising. With appointment training for women scientists, career development workshops, supporting peer mentoring initiatives among women scientists and the *plan m* follow-up programme for women scholars in the humanities and social sciences that started in January 2007, we are further extending these activities.

We look forward to seeing what experience will be like with the second mentoring group. We regard establishing a network with all women scientists involved in *plan m* so that colleagues can advise one another and continue to exchange specialist know-how as a special opportunity.

A successful concept is one side of the story, but dedicated actors are the other: the mentees and mentors involved have given *plan m* life. They have entered a learning process, shared their knowledge and invested a large amount of time. I would above all like to express my thanks to the professors, who have been willing to engage in mentoring despite their more than tight schedules and their own supervising duties. Here, I would also like to thank the two members of the Equal Opportunities Office, Anneliese Niehoff und Susanne Abeld, who, both with their conceptual ideas and their considerable efforts during the implementing phase, have managed to achieve a positive outcome of a model that represents a novelty at Bremen University. Last but not least, my thanks goes to the Wolfgang Ritter Foundation which, with its willingness to financially support an instrument of this kind to promote women scientists and scholars, can boast a considerable contribution to its success.

Gerd-Rüdiger Kück  
Registrar, Bremen University



## plan m – a gender-balanced staff development tool

> 1

*Scenes in day-to-day university life:*

- As a natural scientist, she often finds herself the only woman in the teams, on panels and in university committees. A part of her remains alien and invisible while she is working.
- In order to maintain teaching, a post-doc shelves her academic ambitions. Her confidence in her own research skills and her hopes of soon being ready for an appointment are vanishing. Her male colleagues are much less active in teaching.
- A scientific assistant is sharing her office with a male doctoral candidate. Their common professor requests him to present his research results at conferences and in specialist journals. There, he is introduced to the most important figures of the *scientific community*. Her own work enjoys friendly, passive accompaniment: “She’ll ask if she really needs anything.”

In the University of Münster’s WKA survey<sup>1</sup>, 80% of today’s women professors stated that they had been supported and introduced to their professorship by a mentor. They regard informal support as key to their career. This factor in qualifying, which is not in any way regulated, benefits male scientists and scholars much more than it does their women colleagues. What makes this mentoring relationship, which has developed in the course of time between the master (only few of whom happen to be women), and the scholar so important in an academic career?

Via his supervisor, the male junior scientist or scholar is introduced to the *old-boys* networks of the respective *scientific community*. Via their advocacy, he is given more attention in appointment procedures, in reports or in renowned specialist journals. Via his mentor, efforts are made to recruit him to doctoral positions, promote him to attractive posts, integrate him in interesting research projects, or have him requested for a call to a professorship,

or he obtains valuable background information regarding forthcoming appointment procedures. He is taken along to congresses, where he is given the floor to present his own achievements.

Passing on knowledge about how to present oneself to the *scientific community*, for instance, with regard to recommendations on successful publication strategies, which goes without saying, is another key trump card the mentee-mentor tandem offers and whose importance can hardly be overrated. Examining the possible assumption of career-relevant duties in university committees and being able to move in the field of higher education politics play a further important role. Into the bargain, the pupil learns a lot about his professor’s style of leadership, his conduct as a superior and how he handles time budgets and financial resources. These are valuable insights that help to gradually hone one’s own disposition and skills as a leader.

The culture of promoting individuals and demanding performance from them goes hand in hand with an appraisal of one’s own achievements and motivation for the further career steps. Gender still influences the supervisor’s appraisal and perception in regard to junior scientists, although often subconsciously. The notion of excellence is tinged with gender as for role models predominantly tend to be male. Male scientists are often given a *male bonus* and a greater degree of attention than their female colleagues<sup>2</sup>.

These factors intermesh with the exemplary role of the mentor. Male junior scientists are guided by their male professor when asking themselves whether they could pursue his approach or adopt his style. In the context of promotion relations based on the same sexes, identifying with whoever already happens to be a successful mentor will be much easier. However, the price to pay is often very high: considerable self-exploitation, a 300-percent

<sup>1</sup> Projekt Wissenschaftskarriere, Institut für Politikwissenschaft, Münster (Hg.) 2004: *Karrierewege von Professorinnen an Hochschulen in Deutschland, Münster.*

<sup>2</sup> Weneras, Christine; Wold, Agnes 1997: *Nepotism and Sexism in Peer Review.* In: *Nature* vol. 22, 341-343. European Commission (Hg.) 2004: *EUR – Gender and Excellence in the Making.*



effort, a lonely and yet ingenious pursuit of one's vocation, and all this poorly paid and with an acceptance of long-term personal dependence.

The guiding notion of science suggests neutrality, objectivity and a pure quest for academic excellence. This distorted image eclipses the highly subjective non-academic inclusion and exclusion processes in research and teaching. It is particularly the lack of integration into their respective *scientific communities* and the latently lower level of engagement on the part of the supervisors and seniors vis-à-vis their women colleagues that complicate careers in a frequently hardly perceptible manner. Being put at a minor disadvantage in a variety of ways, being treated pejoratively and not being perceived result in a gradual *cooling out*<sup>3</sup> among many women with potentially promising careers. What this frequently leads to is the assumption that one is not suitable for an academic career or the decision to no longer wish to work in an academic field. Handed down gender-specific divisions of labour as well as a lack of role models of women in executive positions reinforce the sobering down and exclusion processes that women academics experience.

So no wonder the share of women among scientists and scholars declines strongly from graduation up to the level of a W2/W3 professorship. The transitional phases from graduating up to the doctoral phase, from there to the post-doc and then on to the professorship are precarious from the angle of feminist politics. The share of women sinks steadily. Out of the original 49.5% women graduates from higher education institutions, 14.3% become professors (www.cews.org, Federal average statistics, 2005). At Bremen University, figures among the women natural and engineering scientists drop from a 33-percent student share through 21% in the non-professorial academic staff to a women professors' share of just 12%.

Taking action against this *leaky pipeline* in the academic system is an issue of gender equality, an issue of academic quality as well as being one of responsible handling of resources.

*plan m*, the Mentoring Programme for Women Natural and Engineering Scientists aiming to become professors, sets out from the informal career support relations and the introduction to the scientific communities (which women scientists and scholars often lack). With this programme, we wish to counter women academics being put at a structural disadvantage. *plan m* explicitly supports promotional relations between women professors and women academics. Here, *plan m* combines gender equality policy and staff development elements. The programme is based on a person-related and process-oriented approach that establishes supportive relationships, develops networks and critically reflects the higher education institution with its processes of exclusion. We are confident that this combination will promote the processes of clarifying objectives among mentees as well as developing their skills, motivate more women to pursue an academic career and, furthermore, sensitise the institution itself towards of its exclusion mechanisms.

The target group has been restricted to women on purpose, especially to also be able to address the cross-section topic of "academic culture and gender" on the basis of experience. The experience that women gather in higher education differs in structure from that of their male colleagues. Moreover, the comforting discovery that "I'm not the only one" defuses self-accusations and releases potentials to act.

We have intentionally opted for the very restricted target group of natural and engineering scientists aiming to become professors in order to make a contribution by the institution of higher education to the institution of higher education. For the *leaky-*

*pipe* phenomenon suggests that women, more than men, tend to be "supported away" from an academic career to other career tracks. Since the cultures of the various disciplines in universities vary considerably, concentrating on subjects in which women are marginalised from the day on that they start studying appeared to us to be a worthwhile focus. We have been able to counter the daily experience of many natural and engineering scientists being relative strangers "alone among men", in particular by providing networking. At the same time, we thought it would make sense to orient the seminars and meetings as closely as possible on the respective subjects in order to improve the prospects of gaining specifically useful, career-relevant knowledge.

Feedback from those involved as well as from third parties ("We could do with something like that, too!") shows that an approach combining personal learning with institutional reflection, getting together women scientists and scholars in a similar situation as well as experienced women professors, results in a wide range of positive effects. Examples here are a sounder notion of the profession one is aiming for, a significantly increased motivation to work and tangible improvements in professional status. You will find the detailed assessments and developments of the mentees who participated in our Final Report. I now look forward to presenting to you Susanne Abeld's evaluation and wish you happy reading.

Anneliese Niehoff  
Equal Opportunities Office,  
Project Head *plan m*

<sup>3</sup> Maurer, Elisabeth; Ulmi, Marianne 2005: *Geschlechterdifferenz und Nachwuchsförderung in der Wissenschaft*, Zürich.



## plan m Mentoring for Women Natural and Engineering Scientists

### 2.1. The concept

Against the background of structural obstacles to women's careers in academics, the Equal Opportunities Office developed the support programme for junior academics "plan m Mentoring for Women Natural and Engineering Scientists" and ran it from January 2004 to July 2006. The programme focused on professionalising researchers to handle career management in academics.

The academic world has its own "career culture"; i.e. attaining the status of a professor is regulated by certain formal structures such as hierarchies, staff posts, finance and higher education legislation and characterised by informal, gender-specific practice like mentoring, networking, as well as processes of recognition and exclusion. Career strategies such as being visible to the *scientific community*, high publication rates, sophisticated academic profiles and the acquisition of third-party funding are hallmarks of academics. Managing one's own career in academics means planning, realising and again and again assessing one's career in a continuous process in this field with its own formal structures, its gender-specific rules of the game, and its moral concepts. One's own motivation, personal skills and life concepts are integrated into this process, resulting in an ongoing balancing of individual interests and needs with the requirements and values of academic organisation. Thus making a successful career for oneself is not only the product of achievements in a subject but represents an interactive process that is actively shaped and demands special qualifications.

#### The programme structure

This is precisely where *plan m* starts. Professionalising junior women academics in career management means enabling them to benefit from

an individual learning and development process with a view to designing their career. It also means establishing support structures and creating a framework in which women academics learn from one another and can support each other. This is why *plan m* was conceived with 4 modules – *one-to-one* mentoring, seminar programme, networking and *peer group* – in a manner that, beyond the acquisition of career-specific knowledge and performance skills, each mentee could develop a supportive relationship with a professor – male or female – and thus improve her integration in the *scientific community* and other professional networks. The modules ran in parallel, corresponded with one another and are presented in the following.

#### One-to-one Mentoring

In *one-to-one* mentoring, a woman junior scientist was given advice on developing her academic career by a professor (mentor) over a period of 12 months. In this context, the mentors handed on their personal knowledge, which they themselves had gathered in the course of their career, to the junior scientists. This resulted in a knowledge transfer of informal expert knowhow that has as yet hardly been practised in the formal training of scientists. The advisory process was divided into several phases. First, career and programme targets were defined and strategies were developed with which these were to be attained (planning). Their implementation in day-to-day work (realisation) and the success of the exercise were constantly checked as the programme progressed (controlling), redesigned if required and again assessed, so that an ongoing process of steering career activities took place.

For most of the mentors, supporting the mentee coincided with an intensive process of reflecting

on how their own career had progressed and on their leadership role. The sensitisation towards the situation of women in academics enabled by this process had already been conceived in designing the programme, and giving an impulse to cultural changes in science organisation was intentional, too. The professors also had the opportunity to acquire new styles of leadership and extend their executive skills in workshops in which the mentoring activities of women experts were accompanied. Not only did the mentees thus benefit from these tandem activities, but the professors did, too.

### Seminar programme

In the seminar programme, five workshops were run on career management in academics: "Organisational and Staff Structures at Bremen University", "Career Planning: Career Analysis and Strategy Development", "Networking in Academics", "Assessments in Natural and Engineering Sciences", "Applying for Third-Party Funding at the DFG" and "Developing Leadership Skills". They were combined with internal workshops for mentees and mentors to support the learning process and to acquire leadership instruments (first and second preparatory workshop, interim report,

## 2.2. Data and development

Eleven women doctoral candidates, post-docs and professorial candidates from the subjects of physics, biology, informatics, geology, production engineering and geography participated in *plan m*. In response to an extensive advertising campaign (personal letters to all academic staff in the natural

and engineering sciences, posters and information events), they applied for *plan m* and were selected among 21 applicants. The selection criteria were their academic suitability for an academic career, certified by a statement from a liaison professor and 2 professors of the programme advisory council as

### Networking

In order to ensure a greater integration of the mentees in their *scientific community* as well as the development of professional networks, the programme provided for the support of the participants in establishing their disciplinary and professional networks via a Networking Workshop and the setting up of a *plan m* network. It served the purpose of an opportunity to exchange career-relevant information, offering helpful contacts and preparing (interdisciplinary) collaborative research schemes.

### Peer group

Women in the natural and engineering sciences are often on their own in this male preserve. There is a lack of exchange and advice from colleagues. Therefore the *peer group* served to learn from women in the same situation, to exchange experience with everyday and career situations and to strengthen each other.

well as marked social skills and the motivation for a sophisticated and time-intensive staff development programme alongside day-to-day professional activities.

The programme started for the mentees in January 2005, with a preparatory workshop in which the learning targets for *plan m* and for the selection of mentors were defined. This was followed by a three-month matching phase to form the mentoring tandem. Eleven mentors, ten of them women, confirmed their participation in the programme on request of the University. In the second preparatory workshop, the mentoring pairs agreed on their working goals in written contracts, reassessed them in the interim balance workshop after 6 months and evaluated their results in the final seminar<sup>4</sup>. The official launch of the programme was celebrated with an opening event in June 2005, as

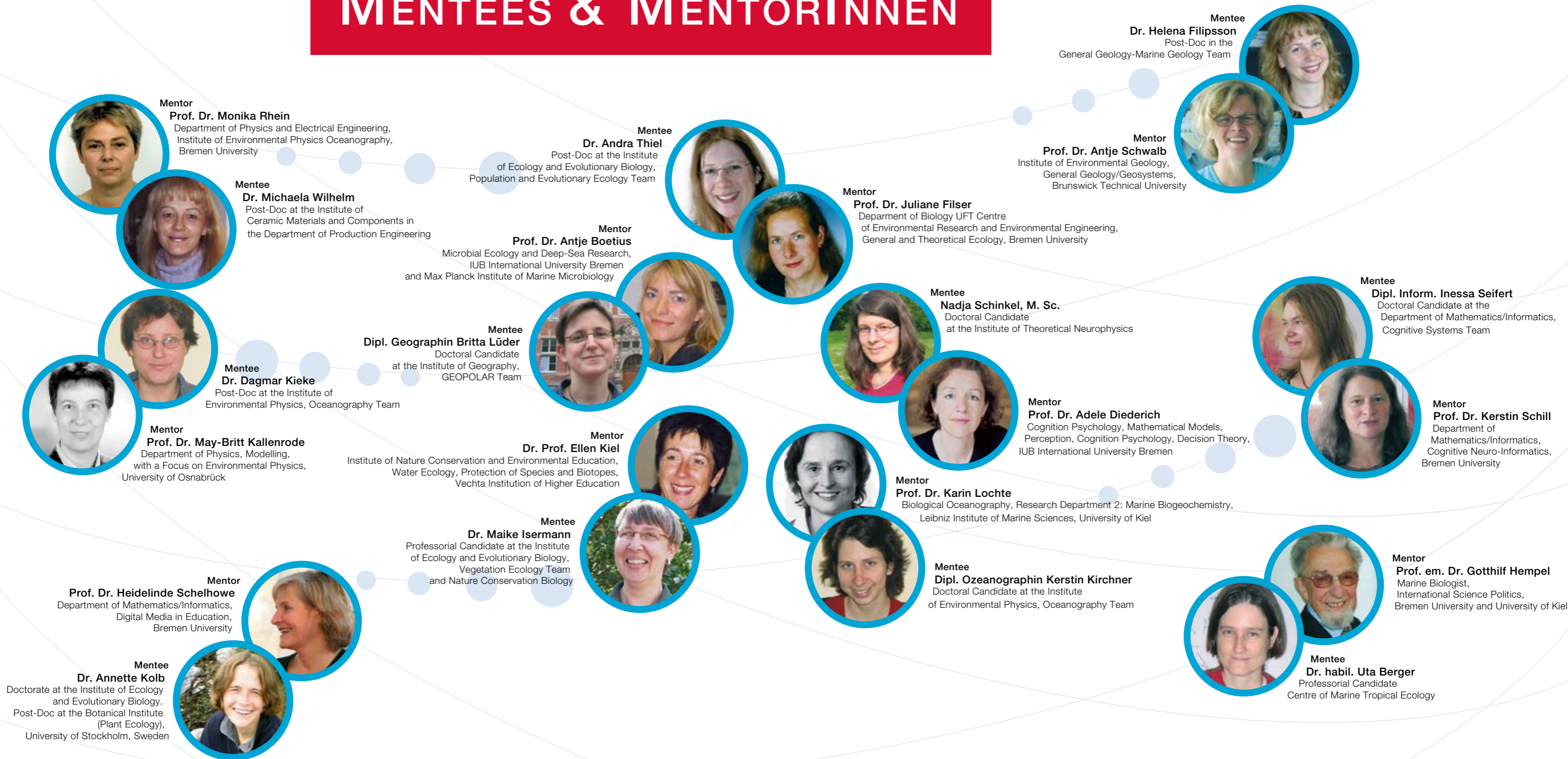
was its conclusion with a final event in July 2006. An internal advisory council comprising experts of the University's Management, funding for research and junior scientists, staff development, the faculty and academic assistants, the staff council and an external woman mentoring specialist provided advice during the development and implementation of *plan m*. In the preparatory phase, various consultative talks were also held with members of the staff development unit and the internal Office against Discrimination and Violence – Expertise and Conflict Counselling, ADE. In addition, the latter headed a workshop and was also available to the project for advice during the programme.

*plan m* was primarily financed with the University's own funds and money from foundations. Also, the mentees paid fees for attending the seminars.



<sup>4</sup>As a rule, 5-6 mentors participated in the workshops. The contents and tasks that related to the mentoring pair but could not be addressed owing to the absence of a mentor were dealt with in individual talks in the following tandem meeting.

## MENTEES & MENTORINNEN





## 2.4. Seminar programme

### 1. "First Preparatory Workshop for Mentees"

Date: 14.1.2005

Head: Franziska Jantzen, freelance academic consultant, Susanne Abeld, Programme Manager

Getting to know each other and getting organised as a mentee group. Individual motivation, agreeing fields and targets of learning for the programme. Reflecting on one's own skills and strengths. Benefit of career planning for science. Selecting mentors. Defining the seminar programme. Working agreement with the Programme Manager.

### 2. "Second Preparatory Workshop for Mentors and Mentees"

Date: 28.5.2005

Head: Sabine Klein-Schonfeld ADE, Office against Discrimination and Violence – Bremen University's Expertise and Conflict Counselling

The mentees and mentors get to know each other. Clarifying the working relations in the mentoring pair. Describing one's own roles and tasks. Common definition of the mentoring goals, framework conditions and work structure. Prospects and risks of gender-specific mentoring working alliances. Written work agreement in the tandem.

### 3. "Organisational and Staff Structures at Bremen University"

Date: 20.7.2005

Head: Anneliese Niehoff, Head, Equal Opportunities Office

Formal organisational structures at Bremen University. Formal and informal decision-making structures. Contracts: Hanseatic City of Bremen with University, University with Deans and Professors. Allocating posts for women scientists. Networking at Bremen University via working on committees. Appointment procedures. Staff structure at Bremen University.

### 4. "Career Planning: Career Analysis and Strategy Development"

Date: 26. and 27.10.05

Head: Franziska Jantzen, freelance academic consultant

The internal career: clarifying individual motivation to work as a scientist and identifying concealed patterns. Establishing and managing a career in science. Gender-specific rules, values and norms of the academic system. Developing an individual strategy having identified one's position, field analysis and definition of a target.

### 5. „Networking in Science“

Date: 25.11.2005

Head: Isabell Beuter, CEWS Center of Excellence Women and Science

Networking theory. Analysis of one's own network. Defining a goal for personal networking. Developing an individual network strategy. Examples of *best practice*.

### 6. "Interim Balance for Mentees and Mentors"

Date: 6.1.2006, half the day

Head: Anneliese Niehoff, Project Head, Susanne Abeld, Programme Manager

Reflecting on tandem activities so far. Clarifying the goals attained. Defining the goals for the next half a year. Roundtable: mentees and mentors discuss "Politics in Science and Assessment and Marking Procedures".

### 7. "Evaluations in the Natural and Engineering Sciences"

Date: 17.2.2006, half the day

Head: Prof. Dr. Karin Lochte, University of Kiel, Dr. Ulrike Wyputta, Science Council

Structure and mission of the Science Council, requirements for a career in evaluating, evaluating institutes and Collaborative Research Centres: quality criteria, choice of evaluators, evaluation process: formal procedure, conflicts of interests

### 8. "Applying for Third-Party Funding at the DFG"

Date: 22.2.2006, half the day

Head: Prof. Dr. Antje Schwalb, Technical University (TU) of Brunswick

Explaining quality criteria for a successful application for third-party funding at the DFG, discussion of an example of *best practice*. Formal procedure of assessing applications at the DFG, guidelines for DFG Assessors.

### 9. "From Researcher to Boss – Skills in Staff Management and Team Heading for Women Scientists"

Date: 18. and 19.5.2006

Head: Franziska Jantzen, freelance academic consultant

Basics of staff management and development processes in the team. Developing an understanding of leadership. Extending one's personal scope of action. How do I perform a leadership role in an area that is largely dominated by men? Role change: From the colleague to the boss. Heading teams. Roles in teams. Establishing a feedback culture.

### 10. "Final Workshop with Mentees and Mentors"

Date: 21.7.2006

Head: Anneliese Niehoff, Project Head, Susanne Abeld, Programme Manager

Evaluating mentoring activities and the programme. Agreements on further networking.

Susanne Abeld  
Programme Manager, plan m



## Evaluation

### 3.1. Goals of internal evaluation

*plan m* was intended to enable the junior women scientists to go through an individually oriented learning process in which they could develop their potentials for professional career management. The programme structures and the interventions were accordingly tailored to the need for support among the mentees and the resources of the mentors.

An internal evaluation concluding the programme assessed to what degree the mentees and mentors had individually benefited from the programme and how effective the modules had been to this end. The results also inform on how the University has benefited from the implementation of *plan m*.

### 3.2. Evaluation methods

Data was established in two phases, and with different methods. First of all, in a final workshop attended by all mentees and five mentors, a moderated talk on results was held in which the replies to the question “How have you benefited from participating in *plan m*?” were discussed and clustered. On the basis of personal experience with the programme, success criteria were commonly defined that describe what personal learning success comprises, which interventions have led to it and the benefit that *plan m* provides for the institution. Clustering revealed a consensual rating of results that showed which categories applied to most of the participants<sup>5</sup>. Parts of the discussion and their results were taken minutes of by the head and Programme Manager during the workshop. They yielded important clues to the design of a questionnaire with which the results of the mentees were to subsequently be treated in depth. There was a 100-percent return of questionnaires. The texts of the replies were interpreted by the Programme Manager against the background of her personal observations and experience with the participants and then once again clustered. The resulting categories corresponded to those of the first survey and added to its precision.

In a combined summary, the results of the two procedures draw an overall picture that reflects the benefits both for the mentees and mentors and for the University.

In the following chapters, the results will now be presented via a description of the effects that the interventions had for the mentees and the mentors<sup>6</sup>. Chapter 3.3. first of all describes the impact that the programme as a whole has had on career behaviour among the junior women scientists. This is followed by a description of the most important results for the mentees from *one-to-one* mentoring activities in Chapter 3.4. and a presentation of experience that all participants made with the *peer group* and networking in Chapter 3.5. The insights gained by the professors through their mentorship and their attendance of the internal workshops are described in the following chapter, 3.6., in separate. Finally, all results together with the benefits for the University are summarised in core statements in Chapter 3.7.

<sup>5</sup> In this context, references to “most” participants refer to a scale of at least 90%. However, since just 5 out of 11 mentors attended the final workshop, the results are not representative of the entire group of mentors but merely reflect the experience of this small group.

<sup>6</sup> The names used here are pseudonyms.

### 3.3. Effects of professionalisation in career management

Professionalising career management raised motivation for an academic career and was reflected in a clear stepping up of career activities. The insights and processes that led to this will be described in more detail in the following.

A substantial gain that the mentees refer to is to have developed an awareness of the key importance that career management bears. Previously, most of them had concentrated on stepping up their subject skills and extending their research fields. By participating in *plan m*, they realised that an excellent academic qualification is not enough for an academic career, but that career management represents a further field of action that requires certain knowledge and specific skills needed to act. They learnt the rules of academic culture and the ways in which it works, and on this basis, they developed a matrix of criteria that are conducive to a successful career in science. This reference was helpful for them in being able to actively develop their career and being in a better position to recognise their own options. Here, Gudrun says:

*"The events and talks on career planning were most valuable to me. I gained a much better picture of my options and am more capable of making decisions, recognising opportunities [...] and reflecting on the prospects."*

Melanie argues:

*"It is important to create awareness of a catalogue of criteria for an academic career. But this catalogue is not static. Rather, it changes as time goes by. One has to be well informed, as it were, about what could be important in the next few years [...]."*

The mentees identified the following contents as important knowledge for this matrix:

Knowledge about formal structures

- How higher education is organised, the roles of committees, the structure of the DFG and the Science Council;
- Possible fields of activity and career tracks in science;
- Passages on status and the legal framework for academic careers;
- Criteria for a recognised academic profile.

Knowing about informal structures

- Criteria for a successful career that are inherent in academic culture, such as personal promotional relations, networks, visibility in the scientific community, international research activities, publishing strategies;
- Gender-specific rules of academic culture.

Knowing about structures that are conducive to careers and the associated intensive reflexion of career conditions and personal motives, skills and life-plans helped them make a better assessment of the potential course that their future career track would take. While the day-to-day academic life of junior scientists is overwhelmingly determined by responding to a "flood" of tasks and demands they have to address (and, often enough, doing a doctorate or qualifying as a professor turns into a sideline activity pursued in the evening), the mentees now succeeded in consciously structuring their scope of action for career development. They defined short- and long-term goals, developed targets to achieve these goals and actively implemented them. Such an active approach to shaping a career resulted in changes in everyday life, which were reflected in their more actively approaching their supervisors and demanding more support for their academic career. The mentees asked them about more opportunities to publish or about a research group of their own, requested

them to introduce them to important figures in the *scientific community* and demanded assistance in designing and applying for third-party-funded projects. In accordance with their goals, tasks, thematic fields and contacts were now assessed to see whether they were conducive to their careers or presented obstacles. Activities hampering their careers were delegated more often, while they gave more priority to their academic work.

Sabine says:

*"I am giving more consideration to what is a benefit to me and what may be harmful in the widest sense."*

Svenja notes:

*"This also includes giving up the notion that I have to see to everything that has been transferred to me [...]. Now I am trying to focus on those tasks that are most important to me [...]."*

The ability to manage one's career more efficiently considerably raised the motivation among the junior scientists to pursue an academic career. This also went hand in hand with a positive response among the mentors to the activities of the participants, which was reflected in greater attention and support for their academic career. Commenting on this, Hilke says:

*"Since I revealed my goal of becoming a professor to my supervisor, he has been giving me more information about congresses and publications."*

Ingrid says:

*"1. Reflexion > more straightforward routes and goals and thus a greater motivation to achieve them. Think more about "elements" / steps in my career and am therefore acting more purposefully and consciously than previously."*

The career behaviour of the mentees was now significantly more strategic. In particular, their



activities to become more familiar with "networking" and "self-presentation in the *scientific community*" increased. Professional and disciplinary networks were analysed with regard to their usefulness, and beneficial contacts were newly established. To this end, they took advantage of conferences, congresses as well as teams at both Federal and international level. In addition, some of them initiated new projects for which co-operation partners had to be won over and the network needed to be extended. Furthermore, they gave more lectures at conferences and congresses, organised sessions there and raised their publishing rate. Here, Mareike comments:

*"[...] I have applied my network activities more purposefully: being in touch with old contacts more regularly and in a more focused manner, checking mail lists and activating contacts as well as systematically establishing new ones."*

Silvia maintains:

*"[I] get prepared [to go to] conferences and the like (find out in advance what I want from whom, whom I am going to meet) to be able to establish contacts with a purpose rather than leaving things to chance."*

Karin says:

*"[I] am making a greater effort to enhance my visibility to the scientific community: e.g. have taken up suggestions from co-mentees to organise individual symposia/sessions at conferences and chair them [...]."*

Professionalisation in career management has also resulted in the participants changing their status more quickly or consolidating their positions in teams. Already while *plan m* was in progress, one mentee received a call from a renowned university. Others got posts as lecturers as well as one junior researcher and one post-doc post, and doctoral candidates wrote their applications for grants for



follow-up research projects in parallel to doing their doctorate. Two further mentees have had their contracts extended and now hold posts for an unlimited period or have been approved teams of their own. Thus they now have a larger area of responsibility, and they have been given the opportunity to develop perspectives in long-term talks on careers with their superiors. Sandra comments on this:

*"I believe that the mentoring programme is the reason that the period between qualifying as a university lecturer and being appointed to a post only lasted 1.5 years."*

Imke notes:

*"I am still a doctoral candidate. However, plan m and, in particular, the encouraging remarks of other participants at the "Round Table", have made me more determined to seek a post-doc position as*

### 3.4. Effects of mentoring

The mentees had already been on the lookout for professors that might be suitable for them as mentors during the period of applying for the programme. They informed themselves on homepages, consulted network partners and superiors and discussed the issue with colleagues. During the first preparatory workshop, they then developed criteria with which they checked their choice. If professors indicated that they would be interested in a mentorship, both would then meet for an initial talk in which they had the opportunity to see if co-operating was conceivable. For 10 of 11 mentees, it was already clear in the run-up to the programme that they wished to work together with a woman mentor<sup>7</sup>. Experiences that

*early as possible. [...] [I] have developed an idea for a possible project for my post-doc period and am now writing an application to the DAAD [...]."*

Silvia says:

*"Significantly more responsible duties have since been transferred to me, and together with me, prerequisites have been created to enable the creation of a research group team of my own, which is what I have had in mind for a long time. This has opened up a long-term career perspective for me [...]."*

The success scored, the favourable prospects and the skills acquired in career management resulted in 7 out of 11 mentees clearly opting for an academic career after the programme. The 4 other mentees stated that they would like to stay with academics but would simultaneously pursue other options.

women gain in day-to-day academic life differ from those of their male colleagues. Since women are rare in the natural and engineering sciences, junior women scientists often lack role models and women colleagues with whom they can discuss career ambitions or difficulties with their careers. Rather, what they experience is that male superiors or colleagues dispute their subject skills when they approach them with personal interests or problems. This is why the mentees took advantage of being supported by the advice of a woman professor as a role model. Here, Mareike commented:

*"I chose a woman mentor on purpose because a female role model and a corresponding vita was*

*and has continued to be important."*

Karin says:

*"To me, it is important that the mentor is a woman since, in my opinion, a woman is better at assessing or understanding certain problems (self-representation of women, women being accepted by male bosses, competition with male colleagues, etc.). This was what made discussions and problem solutions regarding this thematic field, which occurs in many different areas, possible in the first place."*

And Silvia says:

*"Yes, I believe that in this manner, I was able to approach her (the mentor) more openly. Often, when you discuss problems with men, they give you the feeling that they are not taking you seriously, and that you are a poor scientist."*

For more than a year, the mentees discussed their career development with their mentees. They analysed the academic profile, the presence in the scientific community and links to researchers and projects that could further their careers. Strategies and measures were developed and implemented to extend necessary career activities. Here, focusing on the current work situation to analyse career prospects played an important role. How was the mentee accepted in the team? Did duties and structures allow rising to higher positions? Often enough, it is what appear to be the normal things in everyday work that turn out to be career traps some of which can be identified as gender-specific: the minutes that need to be written and which the only woman scientist is again and again asked to do; organising a congress instead of giving a lecture there or time-consuming teaching instead of research activities.

Things that keep academic life going but leave little time for work conducive to one's career. With the aid of the mentor, the junior scientist learnt how to hone her perception of these potential career

obstacles. She also learnt that the partly lesser degree of support or an insufficient provision of resources had less to do with her alleged weaker subject skills than with the exclusive behaviour of her superiors. This shift in perspective and encouragement by the mentors strengthened the mentees' perception of their skills as well as their self-confidence. They recognised what resources to ask for and learnt which changes were possible and necessary at the workplace. Here, the experience of the mentees was very helpful for them. With their support, they extended their potential for action. This considerably raised their motivation for an academic career. Imke describes this as follows:

*"[In the talks with my mentor], possible problems were discussed and various options for action determined. Progress in these developments was continuously reported on, and further steps were discussed. These talks made me confident that certain demands are justified and showed me various approaches to try out. This raised my motivation and made it easier for me to attain various intermediate goals (e.g. enlarging my area of responsibility, improved perception in the team)."*

The role model of the woman mentor was also an enrichment in planning the course of the career for the mentees, serving many as a guide. In the talks, the mentors let the junior scientists participate in the reflexion process on their own academic career. The mentees were given the opportunity to discuss personal motivation as well as decisions and conflicts relating to career development with an experienced woman scientist. For example, experience gathered by the mentor with the compatibility of career and family helped with considerations regarding the mentees' own family planning. Together, they discussed suitable points in time, thought about how the desire to have a child could be realised without jeopardising a research stay, an important aspect of a career, e.g. in the USA. Here, they also bore the age limits

<sup>7</sup> This chapter exclusively deals with the effects of mentoring in these 10 tandems.

imposed on the allocation of funds and posts in mind. Insights into the individual development of the mentors' careers was very important to the mentees' own motivation to become professors. For the current reforms of the higher education and research system and the cuts and limited contracts linked with them are causing uncertainty among many junior scientists and scholars regarding the profession they wish to opt for. Adapting to what has now become a severe standardisation of the qualification process (3 years for the doctorate, a swift transition to the post-doc position, junior professorship within five years of 5 years of doing the doctorate), appears to many as necessary owing to strong competition for scarce resources. It does not make things easier for women that the standards are geared to a male normal biography. The insight that the career development of the women mentors was not always straightforward encouraged the mentees to pursue their own course even if it did not always fulfil the norm. The role model of the woman mentor gave them certainty that a professorship was attainable. Here, Sandra said:

*"My mentor's vita was not straightforward or determined. This showed me that I can continue to*

### 3.5. Effects of the peer group and the plan m network

The object of the *peer group* module was collegial advice among the mentees and the setting up of their network, which was extended beyond the group with the mentors.

Right from the onset, the participants saw themselves as a committed learning group.

*pursue my present goal without having to worry too much about the future. You usually manage to get back 'on the right track'."*

Once a professorship has been achieved, the woman scientist belongs to the group of the small number of female executive staff. For her, holding a leading position in a male-dominated professional field often means being a lone fighter and having to prove her skills again and again. Additionally, the formal training of a woman scientist does not provide for any professionalisation of leadership skills. So women professors are not prepared for their new role and the duties and expectations it entails. It was therefore all the more important for the mentees to be able to discuss executive duties and leadership styles. They could learn how to head research teams, were given important advice on supervising doctoral candidates or discussed their self-understanding of leadership. This enabled them to more consciously exercise their own leadership duties and assume new ones. Here, Ingrid states:

*"I have learnt a lot about the relationship between the boss and 'subordinates' [...]."*

Together, they formulated seminar contents, independently organised a workshop on evaluation methods, planned *round tables* with mentors and arranged a monthly *group of regulars*. The aim was to learn from the experience of the others in day-to-day academic life, support one another in difficult situations and hand on knowhow as well

as contacts beneficial to their careers. The status heterogeneity of the mentees – doctoral candidates, post-docs and professorial candidates – was assessed as very beneficial since they thus disposed of a broader knowledge informed by experience as a group. Post-docs could advise doctoral candidates on their forthcoming defence, candidates for a professorship received feedback from the perspective of the younger women academics regarding their leadership skills, and networking strategies were commonly worked out on the basis of different positions. Interest was taken in how the other mentees organise their course in academics, as was their readiness to share their knowledge. Here, Gudrun states:

*"It is nice to note that other mentees dispose of much expertise that I can draw on."*

The monthly *group of regulars* therefore became an important "institution" for all mentees because it was here that this desired sharing of experience or knowledge could take place. Thus the *peer group* arranged that one mentee respectively would present her research work and the focal contents of the team at a meeting. Discussing this together created opportunities to get to know the subject skills and research areas of the others, which generated ideas for collaborative schemes and projects, including interdisciplinary ones. They gave each other tips on applications for third-party funding and referred to mentors doing research in similar fields who could therefore be helpful contacts for the mentees. They shared information on disciplinary and professional networks and discussed academic cultures abroad in comparison to the rules of their own academic culture. The desire to discuss these issues and far more topics with the mentors quickly became apparent, so that two groups of *Round Tables* were started at which current higher education policy at the University, appointment issues or problems regarding the compatibility of career and family



were discussed. Sharing different perspectives and individual experience that women professors had gained in a male-dominated professional area proved very worthwhile both for the mentees and for the mentors. The *Round Table* became a place where women in academics – from the doctoral candidate to the woman professor – could reflect on their individual experience and critically review the academic structures. There is little time for this in day-to-day academic life. For both groups, this resulted in a sensitisation towards discriminatory structures in academic activities.

The get-together of mentees and Mentors at the *Round Table*, the workshops and the public events enabled the participants to establish a new network of women researchers. Women mentors got to know junior women scientists and women professors rising in status and coming from different or similar subject areas. Mentees got the opportunity to talk to other mentees. Research trends, invitations to apply for posts and opportunities for collaborative programmes were discussed, and general career-relevant information was handed on. Thus the mentoring programme *plan m* provided the impetus to establish a new interdisciplinary network for natural and engineering sciences that is going to be made use of beyond the duration of the programme.

In addition, the *group of regulars* offered scope for the mutual emotional support of mentees, which is often neglected in the male preserve of "natural and engineering sciences". In several cases, difficulties and experiences cannot be discussed with colleagues, which frequently leaves women academics left to their own devices and with only little appreciation coming from others. In the mentee group, this important mutual support and advice was now taking place. The women scientists mutually reflected their strengths, found solutions and encouraged one another to accept challenges. By sharing their issues with each other,

**REFLEXION DER TANDEM-ARBEIT**

1. Was hat Ihnen an der Mentoringarbeit bisher gut gefallen?
2. Welche Ziele haben Sie bisher realisiert?  
Welche Ziele sind noch offen?
3. Was hat Ihnen geholfen, die Ziele zu erreichen?



they realised that they had similar problems and experiences, which contributed to positive self-experience. Thus Mareike noted:

*"Others have problems, too. I'm quite normal [...]."*

All in all, the group talks resulted in the mentees gaining more confidence regarding their skills and feeling better apt to cope with their tasks, which raised motivation for their career development.

### 3.6. Benefit for mentors

Inquiries among professors whether they wished to participate in the programme as mentors met with a lively interest; most of them regarded special individual support for women academics as "long overdue", especially in the natural and engineering sciences, and they were *quite ready* to spend some time on this intensive work. Here, Ms. Hubert said:

*"In addition to my professorship, I am on two highly sophisticated committees and [originally] intended to take on no further extra tasks this year. But I believe that the programme is so interesting that I look forward to assuming mentorship."*

Thus commitment among the professors was considerable. In addition to individual counselling of mentees, a core group of 5–6 mentors regularly took part in the internal workshops – second preparatory workshop, interim balance, *Round Table* – as well as the two public opening and final events. In addition, two women mentees headed workshops ("Assessments" and "Applications for Third-Party Funding at the DFG") and handed on their expertise to the mentees. In addition to the tandem activities, this women mentors'

Here, Gudrun said:

*"I have also benefited considerably from sharing issues with the other mentees. Getting to know that others have similar problems has made me more self-confident, and often, experienced mentees were able to give me some good advice. This resulted in my coming back from most of seminars and group meetings of regulars with greater motivation."*

group sought sharing of experiences with women colleagues and junior scientists. In the final workshop, they discussed how they had personally benefited from participating in the programme. The statements are represented in the following as recorded.

All in all, the women mentors stressed that intensive co-operation with the respective mentee and the common "discussions" had been "very great fun" for them. Progress and success had emerged quickly, so that "working with the mentee was considerably satisfying" and made them "eager to see how things will continue with them". Frequently, a substantial relationship developed in the tandems that also prevailed beyond the programme.

The tandem activities, which were pursued on a very confidential basis in most cases, not only offered a deep mutual insight into the everyday worlds of women professors and junior scientists but also, as a rule, went hand in hand with an intense process of self-reflexion. Encouraged by the mentees' interest in the special path they had pursued up to becoming a professor, their own

career from studying up to the professorship was reconstructed. Here, they identified important personal resources and motivations, supportive relationships, deviations and strategies and how they cleared structural hurdles. They developed a considerable "awareness of informal structures" and gained sensitivity towards gender-specific rules. The link between collapses and success in careers as well as supportive and non-supportive structures now became much more obvious to many. Thus one mentee pointed out that the "problem of compatibility [should] not be viewed individually, but [is] part of a larger structure". In addition, the younger women professors took advantage of reflecting on their careers to review their current situation and their academic environment and considered this "very important for one's own career".

Discussing the issue of women professors in executive roles in a male-dominated work context also caused the women mentors to reflect on their own attitudes and skills. What sort of a role model am I? What is my communication like? How do I lead and motivate? Does my team work effectively? Questions that were now being considered more carefully in day-to-day activities and the debating of which brought about changes. Here, the talks with the mentee were a great help for it was from her that the woman university lecturer got feedback on how she, the mentee representing her colleagues, experienced her style of leadership. She thus gained important ideas and encouragement. For example, in the presence of her mentor, Hilke said:

*"My mentor treats her staff and students very respectfully. She approaches them as equals and does not pull rank."*

For executive staff in general, and for women professors in particular, such feedback is rare since it is hardly established in traditional, hierarchical academic culture. Thus mentoring activities gave

the women professors the opportunity to assess their leadership styles and gain new insights that they put into practice in day-to-day academic life. For example, some of them noticed that while they were giving their doctoral candidates good support in terms of the respective subject, they would do well to focus more on addressing career planning. This was now to change. Here, Ms. Schneider comments:

*"Mentoring work has taught me how to focus more actively on my protégés and not only give them advice at the subject level but also on career planning."*

In addition, methods from the field of staff leadership were imparted in the internal seminars such as professionally defining targets, finalising contracts, feedback rules and general conversational skills. Practising these instruments over one year resulted in the women professors transferring them to their everyday work and assessing the finalising of a contract with doctoral candidates as a very productive instrument to work with.

The common seminars and, in particular, the discussions at the *Round Table* on science management and gender-specific rules of academic culture enabled the women professors to engage in a rare share of experience among colleagues outside their *scientific community* that they attached considerable importance to. All in all, the different perspectives and experiences of their colleagues, the comparison of cultures in disciplines and the partly also differing experience that the new generation of women scientists had gained resulted in a multifaceted view of career conditions and opportunities for women in the natural and engineering sciences. This highlighted the problem fields of junior scientists even more, which convinced many women professors that there was a need for gender-specific support

programmes. As actors of *plan m*, they got to know an effective instrument to support junior academics that addresses the special situations of women. Looking back on their experience with the programme, they generally assessed the modules of *one-to-one* mentoring, seminar programme, *peer group* and networking as a successful and important combination and appreciated that *plan m* as a whole was a very effective and innovative staff

### 3.7. Summary

Summing up the results, it can be said that *plan m* has been of considerable benefit both to the mentees and the mentors and to the University. The successful combination of the 4 modules of *one-to-one* mentoring, seminar programme, networking and *peer group* enabled the mentees a high level of professionalization for their career management and the mentors a deepening of their potentials to support junior academics. It was the concept of learning in the context of substantial relationships between the mentors and mentees that contributed to the high quality of the results. In the following, the results are presented in a summarised form in core statements.

#### Benefit for the mentees

- **Professionalising career management in academics**  
The mentees acquired complex knowledge and key performance skills. Confidence in being able to steer their professional career in a purposeful manner resulted in:

development instrument. They also handed on this experience in their role as decision-makers to their higher education institutions and their departments. Ms Kaprius notes:

*"I am very enthusiastic about the programme. It is important that such special support should have a firm framework."*

- **High motivation for the academic career**
- **Proactive and strategic handling of career ambitions**
- **Greater integration and better visibility in the scientific community**
- **Increase in job satisfaction**
- **Improved communication with colleagues and superiors**
- **Quicker changes in status**
- **Career steps while the programme was underway**
- **Active taking on of executive tasks**
- **Sustainable contacts and support structures**

#### Benefit for the mentors

- **Interdisciplinary networking**
- **Deepening of leadership skills and transfer to everyday working life**
- **Improvement in gender-specific individual support**
- **Getting familiar with an innovative support programme for junior academics and disseminating it in one's own higher education institution or department**

#### Benefit for the University

- **Gaining junior academics for science**  
¾ of the participants opted for an academic career and purposefully put the development of their career into practice.
- **Faster change of status**  
Thanks to the professionalisation of career management, the length of the mentees' doctoral candidate phase or of the period spent in the respective status groups was shortened. The transition to the next level in the hierarchy was made more quickly.
- **Increasing the share of women in the non-professorial academic staff and in executive positions**  
Winning over the mentees and actually integrating them in science contributed to increasing the share of women in the non-professorial academic staff and in executive positions.

### 3.8. Outlook

Thanks to the successful running of the pilot project, the follow-up programme *plan m* Mentoring for Women Academics in the Social Sciences and Humanities was already started in January 2007. Here, "International Networking" is being offered as an additional module. The mentees are being supported in establishing contacts with professors in their community abroad and in intensifying them during a several-week stay at the respective foreign institution.

Susanne Abeld  
Programme Manager, *plan m*



- **Shift in values thanks to gender sensitisation**  
Both the junior academics and the professors were sensitised towards gender-specific practice in day-to-day academic life via the programme, which initiated processes of change in academic culture.
- **Extending co-operation**  
New (interdisciplinary) collaborative programmes could be prepared via actively pursued networking of junior staff in their communities but also with the mentors.

## Questionnaire on *plan m* 2006

### A. Questions regarding your personal benefit

- How have you benefited from participating in *plan m* with regard to your professional career?  
*Please give as many details and be as specific as possible in answering the questions. Quote examples to illustrate your statements (e.g. if you say: "The mentoring programme has shown me how to go about planning my career strategically", then describe a situation in which you acted strategically).*

### B. Questions on career development

- Which statement applies to you? Please tick.

To me, it was clear at the beginning of the mentoring programme that I wished to stay in academics. Participating in *plan m* has strengthened this decision for me.

To me, it was clear at the beginning of the mentoring programme that I wished to stay in academics. After participating in *plan m*, I changed my opinion and am going to embark on an alternative career.

To me, it was clear at the beginning of the mentoring programme that I wished to stay in academics. Having participated in *plan m*, I am uncertain and will be on the lookout for alternatives in parallel to my academic career.

At the beginning of the programme, I was uncertain whether I wanted to stay in science. Having participated in *plan m*, I have opted for an academic career.

At the beginning of the programme, I was uncertain whether I wanted to stay in science. Having participated in the programme, I have realised that I do not wish to embark on an academic career.

At the beginning of the programme, I was uncertain whether I wanted to stay in science. Having participated in *plan m*, I am still uncertain and will be on the lookout for alternatives in parallel to pursuing my academic career.

- Did your status change in the course of the mentoring programme (doctoral candidate, post-doc, professorial candidate)? If so, what influence did *plan m* have on this development?
- Did your internal position change in the course of the mentoring programme (e.g. renewing a contract, regular member of staff instead of grant)? If so, how did *plan m* influence this development?

### C. Questions regarding your personal learning success

- What are the 3 most important theoretical insights to you that you have gained from the programme?
- What input was lacking to you and should under all circumstances be imparted in the context of a mentoring programme?
- What do you regard as the 3 most important performance skills (e.g. asserting oneself in the team, purposeful networking) that you acquired in the programme?  
*Please give one example each to illustrate your statements.*
- Which other performance skills do you regard as important in an academic career and should under all circumstances be imparted in the context of a mentoring programme?
- What are the 3 most important insights about yourself that you have gained from the programme?  
*Please give one example each to illustrate your statements.*

**D. Questions on the mentoring tandem**

1. What were the 3 most important experiences, insights, and /or performance skills that you gained from the tandem relationship?  
*Please refer to one example each to illustrate your statements.*
2. Did the mentor's sex play a role for you? If so, why?
3. What was lacking in the tandem work? What was the reason for this?

**E. Questions about the programme**

1. What is your assessment of the seminar programme?
2. What is your assessment of the programme modules *one-to-one* mentoring, seminar programme, *group of regulars*, *Round Table*?

**F. Question on networking**

1. How did participating in *plan m* influence your networking activities?

**G. Space for further comments, supplements, etc.**