

BEST PRACTICE FOR DOCTORAL EDUCATION IN THE MAX PLANCK SOCIETY

Proposal for common guidelines

In order to ensure optimal conditions for excellent doctoral education throughout the Max Planck Society (MPS), and in response to a request by the President of the MPS, the Max Planck PhDnet proposes that the following best practices be adopted by the entities taking part in doctoral education. The catalogue below is intended to complement (i) the *Guidelines for Doctoral Training at Max Planck Institutes* endorsed by the Scientific Council of the MPS in February 2012, as well as (ii) existing local regulations.

SUPERVISION

Success or failure of a PhD project is closely related to the quality of supervision. PhD students who consider abandoning their PhD projects often state personal problems with the supervisor as a reason.

Choosing the topic and the supervisor

PhD students experience a higher degree of satisfaction with their supervision if they choose their supervisors themselves. If they also choose the topic of the dissertation themselves, they are much more motivated.

Therefore, prospective PhD students should be given the chance to come into contact with several potential supervisors early on, at their interview or before starting their PhD, to discuss possible topics. Furthermore, every applicant should have the opportunity to talk to a local PhD representative.

Well-balanced student-to-supervisor ratio

It is of mutual interest that scientists should not take on more PhD students than they are able to supervise. Different research traditions and different task structures across disciplines lead to differences in what is perceived as an optimal student-to-supervisor ratio. Upon agreement, an experienced and suitably qualified scientist other than the *Principal Supervisor* may serve as *Day-to-Day Supervisor*. In such cases, it is all the more important that the *Principal Supervisor* remains involved in the development of the PhD project and in strategic decisions affecting it. Overall, PhDnet survey data indicate that supervisors with five or fewer PhD students at a time score highest in PhD student satisfaction.

Thesis Advisory Committee

The success of any scientific project can be greatly enhanced when it is discussed with multiple experienced scientists. Therefore, it is highly recommended that a *Thesis Advisory Committee* (TAC) is formed in mutual agreement between the PhD student and *Principal Supervisor*. In addition to the *Principal Supervisor* and the *Day-to-Day Supervisor* (if applicable), TACs should consist of additional independent scientists (e.g. other directors, group leaders or university professors), ideally involving a scientific member of the university at which the thesis is to be defended. It has proven useful that the PhD student meets with the TAC once or twice per year to discuss progress, results and subsequent steps to take. A TAC meeting should reserve time for short sessions during which (i) the *Principal Supervisor* and

the *Day-to-Day Supervisor* (if applicable) are not present so that the PhD student can talk to the remaining TAC members alone, and (ii) the PhD student is not present so that the TAC members can discuss among themselves.

Regular meetings

Regular meetings between PhD students and their supervisors are important for constructive supervision and successful completion of the PhD project. Every PhD student should have a contact person in their group at any time in order to resolve problems and questions in a timely manner as they arise.

PhD students and their supervisors should come together at regular intervals and deliberate extensively about results, past and future development as well as strategic decisions regarding the PhD project.

Framework conditions for a PhD project

As early as possible, but no later than six months into the PhD project, PhD students and their supervisors should be clear about, and agree upon, its framework conditions, in particular

- the outline of the PhD project
- the people and resources involved
- the timeline for the PhD project and its funding
- the formal requirements of graduation at the respective university and faculty
- expected extra tasks not directly related to the PhD project
- significant risks that could be encountered.

As the PhD project is a dynamic process, the framework conditions may be updated in mutual agreement as required. It is strongly recommended that there be written records on what has been agreed upon, for subsequent reference and as a basis for documenting progress at the aforementioned meetings.

The supervisor should make every effort that the PhD project is designed in such a way that it can be completed within the projected time frame, and see to it that funding is provided for the entire duration of the project. PhD students and supervisors should explicitly discuss scenarios that could pose threats to successful completion of the PhD project, including departure of the supervisor or failure to obtain important data. Provision should be made for these scenarios, for example by sketching supervision alternatives or a possible back-up project.

Confidant

When PhD students consider abandoning their PhD project, the reasons are often personal problems with their supervisors. Therefore, after the PhD student has had time to become familiar with an institute and its people at the beginning of the PhD project, a local confidant should be selected who would be available as a mediator in case of conflict. It is advisable that the confidant possess a certain level of seniority and be able to act independently of the supervisor. In the interest of successfully completing the PhD, the range of mediation options should include a change of supervisors.

Training the supervisors

Scientists who supervise PhD students should take advantage of the training opportunities in leadership, communication, conflict resolution, etc. which are offered by the MPS. On the part of the MPS, trainings in supervision should be offered through the training catalogue on a regular basis.

SUPPORT

Representation of PhD students

PhD student representatives should be elected at all institutes, as they facilitate the exchange of information and opinions between students, supervisors and administrators. Their work merits recognition and support. In particular, institute resources should be made available to them, and leaves of absence should be granted to attend relevant student-related events such as the PhDnet's annual General Meeting.

Personal development

Apart from scientific education, there is great demand for training courses on soft skills, for instance written and oral communication techniques, project management, and job hunting. Such courses should be available on a regular basis and in geographical proximity. Financial and organizational support should be provided to organize such courses and seminars, e.g. through the PhDnet. At the discretion of IMPRS officials, certain IMPRS training activities could be opened to non-IMPRS PhD students.

Academic development

Presenting at conferences, publishing one's work and engaging in exchange with the global community of scholars are at the heart of science. Therefore, PhD students should be encouraged to actively participate in these activities from an early stage. Support for attending major international conferences should be provided.

Career development

While working on their projects, PhD students undergo an important phase in their lives and make momentous decisions, in particular with respect to their future career path. Many PhD students are uncertain about their career prospects in science, and not all PhD students can continue to pursue a scientific career after they graduate.

Thus, it is all the more important that contact persons for questions on career development both within and outside science are available. High-profile scientists, alumni and other external experts can provide first-hand insights from their own experience, and PhD students should be given ample opportunity to get into contact with them. Informal "fireside chats" have proven a particularly valuable event format for this purpose. In the long term, there is significant potential for issues of career development and networking in further developing alumni culture and mentoring within the MPS.

WORK AND FAMILY LIFE

The MPS is a vanguard in efforts to make work and family life compatible. PhD students should also experience this, irrespective of whether they are on a contract or receive a stipend.

- PhD students with children should be able to take parental leave without suffering negative consequences; their contracts and stipends should automatically be extended to compensate for the extra time spent on childcare.
- For PhD students who have to care for their children, all opportunities for financial benefits should be exhausted to compensate for their additional expenses.
- Day-care can and should be subsidized for PhD students, as they are financially less well situated in comparison to other staff.
- Official events at the institutes should be scheduled in a way that is compatible with the availability of day-care providers. In particular, events should end such that parents can pick up their children in time.
- PhD students and supervisors should be aware of the options that allow parents to work from home.

ADMINISTRATIVE ASPECTS

International students

International PhD students face additional difficulties when finding their way through German bureaucracies. All institutes should ensure adequate orientation for international students in a language that is intelligible to them. Support and advice beyond mere administrative matters, for instance with housing, is greatly appreciated and permits international students to focus on their scientific work promptly after arrival.

Contracts vs. stipends

Awarding PhD contracts and stipends is governed by clear policies. Directors must be aware of the relevant differences between the types of funding and their key consequences when offering a position to a candidate. In particular, institutes should ensure that stipends are implemented according to the guidelines with respect to stipend holders' being independent and not bound by directives. Conversely, PhD students have to be informed of the underlying conditions *before* accepting scholarships or signing contracts. From this perspective too, it is advisable for prospective PhD students to meet with a local PhD representative at their job interview. If both stipend or contract can be offered to fund a particular PhD student, it is recommended to involve that student in the choice after providing advice on the matter. In any case, every measure should be taken in order to minimize disadvantages arising from either type of funding. Notably, PhD students in comparable situations should receive comparable net income.