Guidelines on Doctoral Training within the Helmholtz Association

Doctoral Training at the Helmholtz Centres

Doctoral students are extensively integrated into the projects run by the Helmholtz Centres and contribute importantly to the research effort. The doctoral process (Promotion) aims to enable candidates to prove that they have acquired the qualifications and competencies needed for doing independent research work. The candidates engage in their doctoral studies at a university in accordance with the doctoral regulations in force at the institution in question. The primary responsibilities for the Helmholtz Centres to meet in the field of doctoral training are:

- to ensure that the best possible and individually-tailored supervision and support are provided for the doctoral students, and
- to provide the frameworks and allow the academic freedoms required for achieving top-rate research results.

In addition, the Helmholtz Centres give doctoral students the opportunity to acquire soft skills, including, for example, team skills related to working on collaborative and, possibly, interdisciplinary research topics, project management skills, writing skills relevant to publishing articles, and teaching skills, both for exchange with specialists as well as for talks with a non-specialist public or with colleagues from different subject areas.

Obligations of the Helmholtz Centres

Transparent processes and clear mutual responsibilities guarantee a high level of training:

- Selection of qualified candidates (under consideration of recognised performance standards)
- Appropriate preparation of the dissertation
- Supervision of doctoral students
- Allowing a reasonable amount of time for the dissertation (generally 3 years)
- Secure financing for the standard time to doctorate
- Programmes providing specialist initial and continuing training (hard skills)
- Programmes delivering complementary skills (soft skills)

Institutional Responsibility

The doctoral process involves dissertations that are produced at the Helmholtz Centres, where they are also appropriately supervised. However, the right to confer the doctorate lies with the university in question.

Responsibility for promoting young researchers is clearly and explicitly governed within the Helmholtz Centre.

The dissertation is produced on the basis of a written agreement concluded between the Centre and the Doctoral Candidate. This doctoral agreement (Promotionsvertrag) governs the rights and obligations of the doctoral candidate, the centre, and the subject adviser, as well as the conditions set by the faculty that confers the doctorate, including, inter alia, the admissions requirements; the relevant doctoral regulations (Promotionsordnung) are included in the appendix. Further documentation covers the order in which the individual steps are taken when producing the dissertation.
The relevant administrative unit collects the following details:

- Personal details
- Start date for the doctoral process, working title
- Name and institutional affiliation of the subject adviser
- Name and institutional affiliation of the academic supervisor
- Confirmation by the academic supervisor of agreement to take on the doctoral candidate
- Type of financing (scholarship/fellowship/grant, employment contract, etc.);
  contract term
- Dates for meetings of the doctoral committee (Promotionskomitee)
- Final report (via supervisor): Submission of the dissertation, examination, grade
- Where appropriate, employment taken up after completion of the doctorate and new address.

The resulting statistical data are used to inform the centre management.

Producing the Dissertation

General frameworks

- The following must be presented when signing the agreement:
  - a working title mutually agreed between doctoral candidate and subject advisor
  - a rough work schedule to cover the whole term of the doctoral process: this work schedule must define milestones which, when not achieved, need to be appropriately adjusted to ensure that the standard time to doctorate of 3 years is not exceeded
  - a risk assessment\(^1\) of the topic's feasibility.
- Within the first month of having started the dissertation, doctoral candidate, subject adviser and academic supervisor will meet for a discussion.
- Each dissertation will be monitored by a doctoral committee (Promotionskomitee):
  - The committee will be made up of the doctoral candidate, subject adviser, academic supervisor, plus at least one external but subject-related expert (mentor)
  - The committee members will be chosen by the doctoral candidate within the first six months of having started the dissertation, where necessary with the support of the subject adviser
  - The committee will be advised of the doctoral candidate's progress on a regular basis, but at least once a year. During the meeting, the results achieved will be discussed on the basis of progress reports; this involves a target performance analysis and will identify reasons for any discrepancies.
    At some centres, dissertations will additionally be formally monitored.
- Conflicts will be governed by defined procedures that may possibly differ from one centre to the next (ombudsman, doctoral student representation, mentor).

Initial and Continuing Training

Specialist training

Responsibility for specialist training lies with the respective institutes and is organised differently from one discipline to the next. Attendance of at least one international conference will be financially supported by the host centre if the doctoral candidate plays an active role there, i.e. if the student presents personal research findings or contributions to an international specialist public.

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\(^1\) Unlikely but nevertheless theoretically-possible factors or occurrences that might make it impossible to complete the project on schedule.
The Helmholtz Centres strive to achieve intensive participation in structured (curricular) training programmes such as the DFG Research Training Groups, Max Planck International Research Schools and the EU’s Marie Curie measures. They furthermore continue to be responsible for developing extensive subject and demand-oriented training programmes, including summer and winter schools, for example.

**Summer and winter schools**

Summer and winter schools can also serve as instruments of specialist initial and continuing training. For example, such schools may offer block courses lasting between 2 and 3 weeks during which a topic or method is studied in detail. Schools like these are generally organised by the centres themselves on the basis of their respective research fields or programmes; in addition, schools are occasionally offered that are independently organised by a centre’s young researchers. These courses are open to international participants as well as to participants from German universities and other research organisations.

**Helmholtz Retreats**

Each doctoral candidate will attend 2 Helmholtz Retreats during the 3 years of training in total. Helmholtz Retreats are cross-centre events that last between 2 and 3 days. They are drawn up in the management committees of the research fields and are offered either on the basis of existing programmes or as cross-disciplinary topics. Starting with a specialist, methodological or interdisciplinary catalogue of questions, these retreats, in particular, enable young researchers to get to know each other and help them extend their horizons beyond the scope of their respective institute and centre. The appeal of these retreats can be increased by incorporating international experts.

**Complementary skills**

Learning skills that are able to increase the doctoral candidates’ success in the chosen career make up part of the compulsory programme at some centres or are offered as optional elements. These skills include, not least, questions of how to write publications, presentation techniques, or how to submit proposals for research funding. These courses are open throughout Helmholtz and welcome participants from all centres.