

HZDR Guidelines for Doctoral Researchers and Supervisors

- HZDR Doctoral Guidelines -

1. Preamble

The Helmholtz-Zentrum Dresden-Rossendorf (in short: HZDR) is part of the Helmholtz Association of German Research Centers as Germany's largest research organization. HZDR tackles the grand challenges facing society, science, and industry by conducting cutting-edge research in three research fields: Energy, Health, and Matter. The HZDR offers an excellent environment for doctoral research, including an outstanding infrastructure, reliable working conditions, and a training program tailored to the individual needs of its doctoral researchers. The HZDR's comprehensive strategy for talent management and career development aims to recruit and train the best young scientists, independently of any diversity aspect, to support them in reaching their next career step along multiple tracks and to increase diversity in leadership positions.

The HZDR Guidelines for Doctoral Researchers and Supervisors (in short: HZDR Doctoral Guidelines) define uniform standards to ensure the successful completion of doctoral studies at the HZDR under the best possible conditions within a reasonable timeframe generally expected between 3 to 4 years. They contain the general framework for doctoral studies at the HZDR, as well as the tasks and obligations of doctoral researchers and their supervisors and advisors, and are binding for all.

Doctoral research projects at the HZDR focus on scientific achievements and the development of excellent career perspectives. The HZDR Career Center for Doctoral Researchers and Postdocs (in short: HZDR Career Center) will provide guidance and support in this process.

The HZDR is a non-university research organization and therefore cannot award doctoral degrees autonomously. For this reason, a doctoral degree at the HZDR is always awarded in cooperation with a partner university, whose regulations are ultimately decisive. The Doctoral Guidelines of the Helmholtz Association and, if applicable, the statutes or guidelines of structured doctoral programs such as Graduate Schools funded by DFG, EU, Helmholtz Association, or others, complement the HZDR Doctoral Guidelines which results in a structured doctoral program. Structural and educational elements of these established doctoral programs will be accepted within the framework of the HZDR Doctoral Guidelines after consultation with the HZDR Career Center.

The successful completion of the HZDR Doctoral Program will be confirmed by a certificate at the occasion of the annual HZDR Doctoral Celebration event.

2. Supervision

2.1 Definition of supervision roles

The following participants conducting and supporting the doctoral research project are essential contributors to its success.

Doctoral Researcher: Scientist performing more than half of their doctoral research project at HZDR as central research location, regardless of their affiliation and funding type for at least two years. This includes employment contracts with the goal of obtaining a doctorate, but also scholarship contracts, trainee contracts, guest contracts, and others.

Day-to-Day Supervisor: Researcher at least at the postdoc level guiding the doctoral researcher on a daily basis at the HZDR, and does not necessarily have a role in the university doctoral process.

Doctoral Supervisor (Doktorvater/Doktormutter): Professor supervising the doctoral researcher in the university doctoral process. **Internal Doctoral Supervisor:** If the professor is affiliated with the HZDR. **External Doctoral Supervisor:** If they have no function at the HZDR. The day-to-day supervisor and the doctoral supervisor may be the same person; or there may be an internal and an external doctoral supervisor who share certain responsibilities if applicable.

Advisor: Researcher at least at the postdoc level guiding the doctoral researcher in a more general way, and who may be from the HZDR or another institution, or from the field of the project or from a complementary field of research.

Head of Institute: Superior for all doctoral researchers, supervisors, and advisors at the respective HZDR institute.

2.2 What constitutes good supervision?

The following list covers some key aspects of good supervision. They emphasize the high complexity and responsibility of the task that supervisors face on a daily basis.

Supervisors who strive to provide good supervision are typically active researchers with a very good reputation and deep expertise in the relevant research area. Naturally, they have a strong interest in the topic of the doctoral research project.

In addition, they usually:

- support doctoral researchers in developing their own research topic and in acquiring transferable skills, thereby promoting career development,
- guide the doctoral researcher to develop into an independent researcher in a creativity-stimulating, failure-tolerant environment,
- adjust their supervision style as needed, clearly communicating their expectations, deadlines, and preferred work style,
- are aware of any personal matters that may impact the research and reach out for support if needed,
- are trained in the successful management of scientific projects, so they can use this knowledge to help the doctoral researcher managing the doctoral project,
- are aware of their hierarchical positions and corresponding duties in the relationship with the doctoral researcher through scientific evaluation of the projects, knowledge transfer, their influence on working conditions, and their roles in conflict resolution,
- are knowledgeable experts in their fields and in the field of studies of the doctoral researcher,
- are aware of the legal implications of their positions, e.g., knowledge of the "General Equal Treatment Act" (Allgemeines Gleichbehandlungsgesetz), "Working Time Act" (Arbeitszeitgesetz), "Act on the Implementation of Measures of Occupational Safety and Health to Encourage Improvements in the Safety and Health Protection of Workers at Work" (Arbeitsschutzgesetz), "Maternity Protection Act" (Mutterschutzgesetz) and "Ordinance on Workplaces" (Arbeitsstättenverordnung),
- actively participate in the scientific community by regularly attending international scientific conferences and workshops in the field,
- ensure that their work is presented at conferences and workshops and that articles are published in peer-reviewed journals to gain visibility and reputation in the scientific community.

2.3 Common responsibilities of all supervisor roles

It is the responsibility of all persons involved in the supervision of doctoral researchers to:

- provide regular feedback on the doctoral research project and on the performance of the doctoral researcher in accordance with the supervision agreement (see 2.4),
- assume ethical responsibility, and follow and convey all principles of good scientific practice,
- take on supervision tasks only to the extent that their own schedule and knowledge permit, time resources must be reserved to supervising a doctoral researcher,
- help the doctoral researcher network within the scientific community and encourage scientific interaction, discussion, and collaboration,
- participate in supervisor training offered by the HZDR Career Center, see "Training for Supervisors",
- support the doctoral researcher in shaping an independent scientific profile and support the participation in conferences and the production of scientific publications,
- enable the doctoral researcher to acquire competencies beyond the research topics, such as leadership and soft skills,
- promote an inclusive working environment for the doctoral researcher (communication, scheduling of meetings and retreats, extramural activities, team culture),
- use the HZDR's conflict management service when serious problems arise; in addition, the HZDR Doctoral Representatives (in short: DocReps) can serve as a first point of contact, while the ombudspersons can provide advice on good scientific practice.

2.4 Specific responsibilities

Doctoral Researcher

Although supported by the supervisors and advisor(s), the doctoral researcher is the main responsible person for the success of the doctoral research project resulting in a thesis. This requires regular pro-active communication with the supervisors, and advisor(s), especially in case of problems or questions. It is the responsibility of the doctoral researcher to enroll at the corresponding partner university and to familiarize themselves with the conditions and guidelines of the respective faculty. The partner university may impose additional requirements, such as the supervision of undergraduate or graduate students and the teaching of courses and internships, which are the responsibilities of the doctoral researcher.

Within the own working group, the doctoral researcher has reporting obligations (e.g., jour fixe, team meetings, working group seminars). This includes the willingness to share knowledge and experience with other members of the working group. In addition, the doctoral researcher must follow the research data management guidelines of the respective institute and the HZDR Policies on Publications (B213), Research Data (B220), and Research Software (B230). In general, every doctoral researcher should become familiar with the rules of good scientific practice (HZDR Policy B110). A course on this topic must be completed within the first year. It is the responsibility of the doctoral researcher to adhere to these rules and to implement them in their daily work.

Day-to-day Supervisor

The day-to-day supervisor guides the doctoral researcher in the daily work of the doctoral project. This includes being the first point of contact for everyday problems, especially concerning methodology and administration. In terms of communication and exchange, the day-to-day

supervisor should discuss the project's status with the doctoral researcher at regular intervals adapted to the progress of the doctoral research project. Furthermore, they usually participate in seminars and working group meetings with the doctoral researcher and encourages their active participation in these meetings. Furthermore, the day-to-day supervisor participates in the annual progress meetings (see paragraph 3.2) and provides reliable and complete information for monitoring the doctoral project.

The day-to-day supervisor helps the doctoral researcher to develop a high level of competence in the respective research area, for example, by formulating appropriate scientific guidelines and by raising questions that advance the project. At the same time, the day-to-day supervisor gradually allows the doctoral researcher to develop an appropriate level of responsibility and scientific freedom.

Doctoral Supervisor

The doctoral supervisor develops an initial project plan with the doctoral researcher and all relevant stakeholders, in particular the head of the institute. They will regularly help to revise the plan to complete the project within the agreed timeframe. The doctoral supervisor is generally responsible for medium/long-term decisions regarding the doctoral project. They also bear a significant part of the responsibility for the doctoral process and the publications arising from the doctoral research project. They will give the doctoral researcher as many opportunities as possible to be the first author (co-author) on publications that valorize the work that has been carried out. Where appropriate, the internal doctoral supervisor will support the doctoral researcher in submitting their own grant applications, as appropriate to the career stage and qualification. If the doctoral supervisor is an external one, the above mentioned responsibilities of the doctoral supervisor should be shared between the day-to-day supervisor and the external doctoral supervisor, or, in exceptional cases, the responsibilities of the doctoral supervisor may be assumed by the day-to-day supervisor.

Head of the Institute

They act as the superior for all doctoral researchers and supervisors at the respective institute, and are responsible for the necessary infrastructure and resources for the doctoral project as well as create an interactive and cooperative working atmosphere. This includes the precise assignment of individual supervision role for each doctoral researcher and establishing rules and instructions for problem solving. In the event of disagreement, the head of the institute will make the final medium/long-term decisions for the doctoral research project. The head of the institute is responsible for ensuring adequate funding for the doctoral researcher, especially if an extension of the initial funding is required. A meeting should be held six months before the contract ends to discuss the future career of the doctoral researcher, including possible plans for the doctoral researcher within the institute. The HZDR Career Center can provide support on request.

3. Thesis Advisory Committee

Each doctoral researcher must have a Thesis Advisory Committee (in short: TAC). The committee guides the doctoral researcher in all aspects of the doctoral research project.

3.1 Members of the TAC

The TAC usually consists of at least three members, including the internal and/or external doctoral supervisor, the day-to-day supervisor, and one or two independent scientific advisors, or additional university supervisors, if applicable.

Diversity should be considered in the composition of the committee, e.g. different genders or organizational units (also possible outside the HZDR), but technical expertise is a priority. The members of the TAC should be selected in consultation with the doctoral researcher, the doctoral supervisor, and the day-to-day supervisor.

To avoid duplication of effort, comparable procedures at partner universities and institutions will be accepted.

All TAC members sign the Supervision Agreement (see appendix A) during the first TAC meeting, at the latest six months after the start of the doctoral project, the doctoral researcher will send the signed agreement to FKVP for the personal file.

3.2 TAC meetings

The regular review of the progress of a doctoral research project is intended to ensure that the doctoral project is carried out and completed within the planned timeframe. Each doctoral researcher receives content-based scientific supervision and support from their respective institute. This includes scientific support concerning content and methods as well as regular feedback.

At least once a year (at the latest after 6, 18, and 30 months), the doctoral researcher and the TAC members meet to discuss the progress of the doctoral project, to agree on potential adjustments to the work plan and to follow up on the training program. Starting with the TAC meeting in the second year (no later than 18 months), the doctoral researcher should submit an **Annual Summary**, an approximately 3-5 pages document of the research progress over the past year. It should be emailed to the TAC members at least 5 working days in advance. The minutes of the meeting can be summarized following appendix C 'TAC meeting report', and must be submitted to the HZDR Career Center within four weeks after the meeting. It is recommended to schedule further progress reports at shorter intervals between the annual meetings.

4. Advanced training program

4.1 Training for doctoral researchers

The aim is to create a clear framework for all doctoral researchers at the HZDR in order to guarantee a minimum standard for doctoral studies at the HZDR. In addition to this curriculum, there should be sufficient flexibility for doctoral researchers to choose non-scientific qualifications according to their respective preferences.

The non-scientific qualification by means of a certified structured program will be acquired through participation in various courses, workshops, trainings, seminars, or similar formats in the following four subject areas: **Coordination & Management, Communication & Networking, Scientific Publishing, Career Development & Innovation**. Details of the required activities are provided in appendix B.

4.2 Training for supervisors

The HZDR also regularly offers appropriate training opportunities for supervisors. Special attention is paid to supervisors and supporting scientists who supervise doctoral researchers. They should have access to well-designed training opportunities that enable them to support and guide doctoral researchers according to the rules of good scientific practice. Specific networking opportunities and formats in which they can share their supervision experiences will be encouraged and supported by the HZDR.

Training for supervisors should include courses on **Leadership, Management**, as well as **Good Scientific Practice**. These courses should be completed prior to the start of the supervisor activity but no later than three years after starting supervision duties, unless very good knowledge and sufficient experience in supervision can be confirmed. Further details are provided in appendix B.

5. Bodies of the HZDR Doctoral Program

The **HZDR Career Center** provides advice on administrative issues related to the doctoral research projects and procedures, and acts as a link between the HZDR and the partner universities in matters concerning doctoral studies.

The **HZDR Doctoral Advisory Board**, consisting of senior scientists representing all HZDR institutes, is appointed and chaired by the HZDR Scientific Director. It supports the HZDR Career Center, especially in the area of scientific education.

The **HZDR Doctoral Representatives** (in short: DocReps) represent the views and interests of the HZDR doctoral researchers and are elected on a regular basis. Two members should be representatives of the HZDR in the Helmholtz Juniors (in short: HeJus) group.

The DocReps and the Career Center are in regular communication about the short and medium term issues. The Doctoral Advisory Board, the DocReps, and the Career Center regularly exchange views on strategic issues, in particular at the invitation of the Scientific Director.

6. Conflict management

The HZDR is committed to creating a positive working environment for all researchers. In case of conflicts or problems that affect the working conditions or the quality of the doctoral studies, HZDR doctoral researchers are encouraged to proactively seek solutions or support. The HZDR Career Center is available to all HZDR doctoral researchers at any time and provides confidential assistance in finding suitable contact persons or points out further possibilities for resolving conflicts. The HZDR also has ombudspersons, psychological first aid persons and trained conflict managers. They offer advice and mediation in the event of disputes or questions in scientific conduct, e.g., questions of authorship, suspicion of scientific misconduct, etc. The works council, the equal opportunity officer, the anti-discrimination officer, or members of the personnel department are available to HZDR doctoral researchers at any time. The next step in resolving problems and conflicts is the involvement of the Career Center, which can advise and decide on further measures, before the Board of Directors of the HZDR is involved in a further escalation step.

7. Appendices

A) Supervision Agreement

B) Advanced Training Program

C) TAC Meeting Report