

Helmholtz Zentrum München - Forschungszentrum für Gesundheit und Umwelt

Terms and guidelines of good doctoral training at Helmholtz Munich

1. Introduction

The Helmholtz Association of German Research Centers is Germany's largest research organization. It tackles grand challenges facing society, science, and industry by conducting top-level research in six research fields: Energy, Earth and Environment, Health, Information, Matter, Aeronautics, Space, and Transport.

Within these research fields, the Helmholtz Centers collaborate with internal and external partners across disciplines, organizations, and national borders. In particular, the Helmholtz Centers are committed to the agreement between the German Rectors' Conference and Helmholtz on the joint support of early-stage researchers. Doctoral researchers, as part of the early-stage researchers, make significant contributions to the research output of Helmholtz and have the potential to become leaders and mentors of tomorrow.

The Helmholtz Centers provide an excellent framework for conducting doctoral research such as outstanding infrastructure, stable working conditions, and a training program tailored to the individual needs of their doctoral researchers. They have established graduate schools and offices in cooperation with universities to offer a structured doctoral education and optimal preparation for future careers.

By establishing the Helmholtz Doctoral Guidelines (2019), the Helmholtz Centers agree on common standards for carrying out doctoral research projects within Helmholtz. The guidelines ensure a high quality of doctoral qualifications and provide guidance to doctoral researchers, supervisors, the Helmholtz Centers, and partner institutions. The guidelines promote a culture of responsible talent management, provide a general framework for doctoral training at Helmholtz, and intend to supplement the doctoral provisions of the universities.

As one of the five Helmholtz centers in the research field Health, Helmholtz Munich is dedicated to accelerating the discovery and development of personalized, preventive, curative and regenerative solutions for environmentally triggered diseases such as obesity, diabetes, allergy and lung disease. Diversity, equity and inclusion are core values at Helmholtz Munich and we embrace and recognize those values as a valuable source of creativity and scientific excellence.

The comprehensive talent management and career development strategy of Helmholtz Munich aims to recruit and train the best young scientists, independent of gender, ethnicity, sexual orientation or social status, to support them in their career development towards multiple tracks and to increase diversity in leadership positions. This is achieved through training and career development programs from postgraduate education right through to programs with tenure option for early career scientists.

The Helmholtz Graduate School Environmental Health (HELENA), established in 2010 as a joint initiative for the promotion of doctoral researchers of Helmholtz Munich, the Ludwig-Maximilians-Universität München (LMU) and the Technical University of Munich (TUM), educates the new generation of leading scientists in metabolic and environmental health research. To better reflect the specific needs and structures of doctoral education in Helmholtz Munich, the underlying Helmholtz doctoral guidelines (adapted by the Assembly of Members of the Helmholtz association on April 30, 2019) have been adjusted to form these new “terms and guidelines of good doctoral training” at the Center.

These terms and guidelines are binding for all doctoral researchers and their supervisors at Helmholtz Munich.

Pathway towards obtaining a doctoral degree

Aims of a doctoral research project at Helmholtz Munich

Doctoral researchers, as defined by these terms and guidelines, conduct autonomous research under the umbrella of an interdisciplinary and international research group and they are actively participating in team science projects under supervision at Helmholtz Munich to earn a doctoral degree at a partner university.

By the end of their doctoral training, our researchers are well trained to conduct original scientific research. They are competent and critically minded scientists of highest international standards, they have cutting-edge scientific expertise in the research area covered by their doctoral project and are well integrated into their professional networks. They have published some or all of their research results in peer-reviewed journals and data infrastructures and have discussed their research projects within the international scientific community. Helmholtz Munich doctoral graduates are well positioned to make an informed decision about their next career step, in keeping with their personal and professional objectives across multiple domains and employers, making them highly attractive candidates for the international job market. The Helmholtz Munich Career Center for Doctoral Researchers and Postdocs will support them in their career orientation and execution of their choices.

Supervision and thesis advisory committee

Creative independent thinking to address a research question lies at the core of the doctorate, for which doctoral researchers receive qualified feedback from their supervisors and peers on a regular basis.

The direct supervisor at Helmholtz Munich provides guidance for and monitors the progress of the project and shares joint responsibility with the doctoral researcher for the successful completion of the doctoral research project. In cases where the direct supervisor is not affiliated with a university / degree awarding institution, a university / degree awarding institution member assumes academic responsibility according to the rules of the respective university. Additional team members and colleagues may also be actively involved in the supervision of the doctoral researcher and provide guidance on a day-to-day basis. A personal thesis advisory committee (TAC) provides further support and supervision for every doctoral researcher at Helmholtz Munich. The TAC exercises an independent and supporting advisory role, has mentoring function and is both advisor and point of contact for the doctoral researcher during the doctoral studies. It consists of at least three members, all of these three holding at least a doctoral degree:

- The direct supervisor at Helmholtz Munich (head of institute or research unit / group leader).
- The university supervisor (qualified at the respective university / degree awarding institution to supervise the aspired degree. If the direct supervisor also acts as supervisor at the university, an additional scientific expert shall be included in the TAC).
- An independent, preferably external, scientific expert on the topic of the doctoral research project.

Additional scientific experts may be included:

- The day-to-day supervisor(s) if applicable.
- Additional scientific expert(s), as deemed necessary for the successful execution of the research project and/or development of the doctoral researcher.

The TAC is assembled by the doctoral researcher with the support and agreement from the direct supervisor, if needed, and officially approved by the HELENA Graduate School Office (GSO). Rules from the respective university must be considered when assembling the TAC.

Rules for the TAC Meeting

- The TAC meets at least once a year.
- The TAC meeting is organized by the doctoral researcher in agreement with the direct supervisor. The doctoral researcher must prepare a short written progress report (2-3 pages) for every meeting. The report must be made available to the members of the TAC in appropriate time before the meeting and contain the following points: scientific context, project aims, results, points of discussion / conclusion, an outlook on the next steps, planned experiments and analyses.
- The direct supervisor is responsible for chairing the TAC meeting.
- During the TAC meeting, the doctoral researcher shall present the work results to the members of the TAC. Results achieved and any possible problems are discussed, reasons for discrepancies with the thesis work plan are communicated and the respective thesis work plan is adjusted if necessary.
- The TAC meeting is NOT an examination. The TAC also discusses and supports the integration of relevant trainings and experiences into the thesis work plan and supports doctoral researchers in their career development.
- After presentation and discussion, the university advisor and external expert(s) hold one-to-one meetings both with the

doctoral researcher and, if necessary, with the direct supervisor. This is a space in which the doctoral student has the opportunity to raise confidential issues, which she*he wishes not to be discussed in front of the direct supervisor and therefore the TAC meeting must ensure such respect of confidentiality. A similar case can be made for the supervisor regarding the discussion of confidential issues pertaining the doctoral researcher.

- The TAC shall issue a written report of the meetings to the HELENA Graduate School Office (GSO) signed by all TAC members and the doctoral researcher. This report as well as the doctoral researcher's progress report, must be submitted to the HELENA GSO within four weeks after the TAC meeting.
- The first meeting is held within the first six-to-nine months of the doctorate and comprises the agreement on the thesis work plan. Respective documentation of the meeting must be submitted to the HELENA GSO latest within four weeks after the TAC meeting.
- The second meeting shall take place after approx. 1.5 years.
- The third meeting shall take place in the third year (after approx. 2.5 years at the latest). The TAC shall approve a work and time plan for completing the work and recommend whether it is necessary to extend the contract beyond the usual timeframe for doctoral studies. Without respective recommendation by the personal TAC, no contract extensions are possible.
- In cases of conflict, the doctoral researcher can consult any member of the thesis committee or other established bodies as described in chapter "central contact points and support".

Supervision agreement and thesis work plan

The doctoral research project is designed to be completed in three years, with an optional extension up to four years if required (decided in third TAC meeting). This extension must take into account possible health issues, when properly documented, parental leaves, care time and other critical issues discussed on case-by-case basis. Working on the doctoral research project and doctoral thesis takes place on the basis of a 3-year written work contract between the doctoral researcher and the Center as well as the written supervision agreement. Prior to the recruitment of the doctoral researcher, the supervisor(s) prepare(s) a project outline, which is the basis of the thesis work plan developed by the doctoral researcher and the supervisor(s) for the first TAC meeting.

The supervision agreement documents general outlines for the supervision arrangement. It defines roles, expectations and obligations for the parties involved in the doctoral research project. Supervisors and doctoral researcher acknowledge important aspects that are regarded as fundamental for an adequate supervision and working relationship during the doctoral project. It contains the following elements:

- Aims of the doctoral research project.
- Names and responsibilities of supervisors.
- Reference to the applicable doctoral regulations of the university / degree awarding institution.
- Preliminary thesis work plan with approximate time schedule, including project milestones.
- Intended doctoral degree and preferred format of the planned doctoral thesis (publication based or monography).

- Risk and feasibility assessment outlining possible areas of delay and points where project directions need to be (re-) considered.
- If already applicable, planned career development and training measures.

A more detailed thesis work plan is discussed within the first TAC meeting and subsequently submitted to the HELENA GSO. The progress of the work is reviewed on a regular, at least annual basis during the TAC meetings and updated accordingly. The discussions, adjustments and agreements, in particular in regard to training measures, are documented. Any delay of the doctoral research project must be discussed in a timely manner to allow the work plan to be jointly revised.

Doctoral training and career development

Enabling in-depth investigation of a research topic by subject-specific training forms the core component of the doctorate, which can take different forms depending on the area of research. The acquisition of additional interdisciplinary and transferable competencies is recommended in all research domains. Participation in training measures is documented and certified by the Helmholtz Graduate School HELENA and its partner universities upon completion of the doctorate in order to enhance doctoral graduates' career prospects.

To obtain this HELENA certificate, participation in the mandatory HELENA program as well as completion of the an individual curriculum of at least 270 hours of scientific training and 40 hours professional skills training is required. To support the doctoral researchers in building up international networks, financial support for active conference participation is provided.

The Helmholtz Munich Career Center for Doctoral Researchers and Postdocs supports the doctoral researchers to set up an individual career development plan (IDP). They are encouraged to discuss their career development with their supervisors and to make use of established career counseling offers and services at the Center. The aim is to establish an appropriate relationship between their career goals at an early stage.

Responsibilities

Responsibilities of doctoral researchers

Doctoral researchers bear the primary responsibility for the pursuit and completion of their doctoral project and thesis, and for their academic and personal development. Specifically, this includes the following responsibilities:

- They assume ethical responsibility and comply with the principles of good scientific practice ([Rules to ensure Good Scientific Practice](#)). They inform themselves about their rights and duties and about the relevant doctoral regulations of Helmholtz Munich and the applicable university / degree awarding institution and comply with them. In particular, the doctoral researcher registers as early as possible but latest within three months after beginning the doctorate, in a university / degree awarding institution. Proof of successful enrollment has to be submitted to the HELENA GSO and TAC afterwards.
- In agreement with their supervisor(s), they set up a thesis work plan at the beginning of their doctorate, present it at the first TAC, and regularly update and discuss their progress with their supervisor(s) and TAC during the course of their doctorate.

- They select the members of the TAC together with the supervisor and organize the meetings to report on the progress of their doctoral research project on a regular basis. This includes informing the TAC about any potential difficulties, delays, or conflict situations at an early stage and taking an active role in overcoming these.
- They inform their supervisors regularly on the progress of their research project and are aware that all results obtained during the doctoral research are property of the supervising institution(s). Processing these results outside the supervising institution is not allowed, excepting under specific cases in which an explicit the agreement of the head of the research group in question has been established.
- They plan and advance their own career development. This includes taking the initiative to create an IDP with support of the Career Center or the corresponding doctoral program where applicable, and discussing and reviewing this at regular intervals with their supervisor(s) and TAC as well as making use of appropriate career development resources and advisory services.
- They give regular informal progress reports and / or oral presentations in addition to the TAC meetings within the scientific community, and present and discuss their doctoral project at international scientific meetings and conferences, under previous agreement with the supervisor.
- They are active members of a structured graduate program, e.g. HELENA, and make use of appropriate training, networking and career development resources and advisory services at Helmholtz Munich.

Responsibilities of doctoral supervisors

The direct, and if applicable, day-to-day supervisor(s) share responsibility for the structured oversight of the doctoral research project and the academic and career development of doctoral researchers. Members of the TAC provide additional support and mentoring. The doctoral supervisors' responsibilities include:

- They select doctoral researchers without discrimination, respecting the personal diversity of doctoral researchers. They support the doctoral researcher in setting up a thesis work plan for their doctoral research project at the start of the doctorate for submission in three to four years.
- They secure necessary resources for the doctoral project (funds for 3 years initially - and a 4th year in case of recommendation by the TAC- covering the doctoral researcher contract including possible extensions, consumables, lab and office space, time and expertise for supervision) and report completed doctoral degrees of their supervised doctoral researchers to HELENA and HR.
- They assist the doctoral researcher by providing regular advice, feedback and support. Yearly formal staff appraisal meetings are also highly encouraged.
- They serve as role models. Consequently, they assume ethical responsibility and act in accordance with the principles of good scientific practice and hold doctoral researchers accountable for doing the same. Supervisors foster doctoral researchers' independence. They introduce doctoral researchers to the scientific community and help them to establish their own network and collaborations.

This includes offering doctoral researchers the opportunity to present their research at meetings and conferences, in keeping with data confidentiality issues, and enabling them to gain teaching and supervision experience where appropriate.

They encourage regular informal progress reports and / or oral presentations in addition to the TAC meetings.

- They support the active participation in structured graduate programs like HELENA, as well as the integration of relevant training and experiences into the thesis work plan and encourage doctoral researchers to create an individual career development plan. Supervisors actively support various career path that take into account the personal and professional objectives of the doctoral researcher.
- They strive to provide excellent supervision and as such take advantage of offers from Helmholtz Munich, the Helmholtz Association, universities or other professional training sources to continually review and improve their supervision skills.

Responsibilities of Helmholtz Munich

Helmholtz Munich and its university partners provide the structures and resources for a successful doctorate. The Center, in particular HR, is responsible to give the “Green light” to supervisors for the hiring of new doctoral researchers, thereby ensuring that they have the necessary resources for the doctoral project (funding, consumables, lab and office space, time and expertise for supervision).

Helmholtz Munich and its university partners support doctoral researchers and their supervisors and are responsible for quality assurance, as outlined in the European Charter

for Researchers and Code of Conduct for the Recruitment of Researchers*.

Central contact points and support

Helmholtz Munich has established with HELENA a central Graduate School and a central Graduate School Office responsible for all doctoral researchers at the Center. These central contact points provide advice in administrative matters relating to the doctorate and acts as a link between Helmholtz Munich and the partner universities in matters concerning the doctorate. HELENA provides the umbrella for further topic specific research schools that cover discipline-specific education according to the scientific and strategic goals of Helmholtz Munich, e.g. in diabetes, epigenetics, lung research or data science, and secures international supervision and training standards.

At Helmholtz Munich, active participation of doctoral researchers in a structured graduate school is required, with HELENA being the first preference of choice. Doctoral degrees are awarded by the respective partner universities.

Onboarding processes assure that doctoral researchers are integrated into Helmholtz Munich and are aware of the responsibilities described above. The Center offers appropriate training opportunities for both doctoral researchers and supervisors. Particular attention is paid to supervisors and supporting scientists who supervise doctoral researchers. They have access to well-designed training opportunities enabling them to support and provide guidance to doctoral researchers according to the rules of good scientific practice. Special networking opportunities and formats where they can share supervision experience are encouraged.

In the event of conflict situations, Helmholtz Munich has established the following contact persons, who act as unbiased, external observers, and clearly defined support

procedures known to all parties involved in the doctoral research project.

These contact persons undergo regular further training in conflict counseling and mediation ([First Contact Points](#)):

- Four independent [ombudspersons for doctoral researchers](#) (appointed by the board of directors for the term of two years after nomination by the elected Doctoral Representatives and HELENA)
- [Ombudspersons for good scientific practice](#)
- [Psychosocial counseling office](#)
- [Elected Doctoral Representatives](#)
- [HELENA GSO](#)
- [Works council](#)
- [Equal Opportunity Officers](#)

Helmholtz Munich actively encourages networking activities among doctoral researchers and the formation of doctoral researcher re/ groups such as the Doctoral Student Initiative (DINI), the Doctoral Representatives at Helmholtz Munich, the Helmholtz Juniors (www.helmholtz.de/juniors) or the N2-Network of Doctoral Researchers. They also ensure that doctoral researchers can actively participate in decisions affecting the training and research conditions of doctoral researchers at Helmholtz Munich.

Helmholtz Munich supports the transfer of research results towards commercial application as part of the doctoral training. The innovation management office serves as confidential contact points for inventions, patent protection, and business ideas. Doctoral researchers and their supervisors have a responsibility to inform the innovation management office of inventions or research results that may require the initiation of patent procedures prior to publication.

Helmholtz Munich strives to provide optimal support for doctoral researchers with families. This includes, if applicable, flexible working hours, mobile working opportunities and childcare facilities. If a doctoral researcher takes parental leave, Helmholtz Munich tries to extend the funding period accordingly.

Diversity

Helmholtz Munich welcomes individual, social, and cultural diversity. Transparent and structured processes that guarantee equal opportunities and diversity are applied in the recruitment of doctoral researchers. Helmholtz Munich pays particular attention to the needs of international researchers, providing advice and support for matters relating to working and living in Germany. All information necessary for carrying out a doctoral research project is available in English, or appropriate translation support is provided.

Funding

Helmholtz Munich offers doctoral researchers regular employment contracts that include contributions to social security. The standard term for a doctoral contract with Helmholtz Munich is three years. Without any exception, an extension is only granted on the recommendation of the TAC. Hiring units have the responsibility to plan and secure funding for at least three years for doctoral researchers at Helmholtz Munich to ensure completion of the doctorate, independent of the respective funding source. In case a fourth year is recommended by the TAC, the hiring units are responsible for securing the respective funding over time until submission of the doctoral thesis at the university. If unforeseen resource issues arise, Helmholtz Munich will make best efforts so ensure that no doctoral contract will be terminated due to financial reasons.

HR submits extension requests on basic funding for coordination and approval to the management. Three-year contracts can only be extended for up to two times by an overall maximum of one year.

The management will only in conclusively justified and exceptional circumstances agree to an additional extension of a contract on basic funding. The management's approval is subject to the provision that the doctoral thesis is finished, including the submission of the dissertation, by the end of the approved extension, and that the necessary financial resources are available in the budget of the applying unit. Concerning third party funding, completion of the doctoral research project including submission of the thesis to the degree awarding institution should also be achieved within a maximum extension of up to one year. Only in conclusively justified and exceptional circumstances, further extension is possible while staying within the frame of the "Wissenschaftszeitvertragsgesetz".

The heads of institutes and independent scientific units have to ensure that these requirements are met for the doctorate students within their respective institutes and units.

Helmholtz Munich also host a number of doctoral researchers who are funded by external sources. For those who are funded by an external stipend, information on the nature of the contract and consequences with regard to social and medical security as well as visa issues is provided by HR at the start of the contract and means of alternative compensation should be provided. Under exceptional circumstances, e.g. for the extension of external stipends of international doctoral researchers, stipends may be granted by Helmholtz Munich itself. If external resources do not secure funds for 4 years for doctoral research projects, hiring units must provide additional funds respectively.

Regardless of funding, doctoral researchers should have, in general, equal rights if they face equal obligations. Where legally possible, Helmholtz Munich aims to establish comparable research conditions for its doctoral researchers. This includes equal access to research infrastructure and integration into the Center. The principles of these guidelines, therefore, apply to all doctoral researchers at Helmholtz Munich, regardless of their funding or employment relationship.

The writing of the doctoral thesis forms an integral part of the doctorate and the thesis work plan should include a pre-defined writing time. As such, funding is provided at least until submission of the doctoral thesis to the university / degree awarding institution for a maximum of 4 years as long as the doctoral researcher is fulfilling her*his obligations as set out in the thesis work plan. The thesis advisory committee provides advice in planning this final stage of the doctorate and in determining an appropriate timeline.

**<https://euraxess.ec.europa.eu/jobs/charter/european-charter>.*