



BEST PRACTICE GUIDELINE

**for doctoral candidates
working toward a doctoral degrees
in MEDICINE (Dr. med.), DENTISTRY (Dr. med. dent.)
or
HUMAN SCIENCE (Dr. sc hum.)
and their supervisors**

Based on the *Promotionsordnung* (PO, Doctoral Degree Regulations) of May 12, 2016

Dear doctoral candidates,

This guideline contains important information about the procedures for attaining doctoral degrees at our faculty. Its purpose is to explain the official *Promotionsordnung* (doctoral degree regulations) that can be downloaded from the homepage of the Office of Doctoral Affairs.

In addition to this Best Practice Guideline, please also see the FAQ list at the internet address given above. The FAQ list is continually updated and answers the most common questions about doctoral degrees at the Faculty of Medicine Tübingen.

Office of Doctoral Affairs of the Faculty of Medicine:

Geissweg 5, ground floor, Room 1

Tel.: 07071/29-76865

Fax: 07071/29-5188

promotionen@med.uni-tuebingen.de

[http://www.medizin.uni-](http://www.medizin.uni-tuebingen.de/en/Research/Doctoral+Studies+at+the+MFT/FAQs+Doctoral+Studies.html)

[tuebingen.de/en/Research/Doctoral+Studies+at+the+MFT/FAQs+Doctoral+Studies.html](http://www.medizin.uni-tuebingen.de/en/Research/Doctoral+Studies+at+the+MFT/FAQs+Doctoral+Studies.html)



A word about gender equality in language:

Article 3 Paragraph 2 of the German constitution states that men and women are equal. All references to persons and functions in this guideline apply equally to men and women.

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Glossary

1. Abschnitt der Ärztlichen Prüfung (M1)	First section of the German Medical Licensing Examination
Annahme als Doktorand	admission as doctoral candidate
Annahme der Dissertation	acceptance of the dissertation
Approbationsordnung	German Order Regulating Licenses to Practice Medicine or Dentistry
Betreuungsvereinbarung	supervision agreement
Doktorand	doctoral candidate
Eignungsfeststellungsverfahren	probation period
Eignungsprüfung	admissions interview
erfolgreicher Abschluss der ersten Medizinischen Prüfung (M1)	Successful completion of the first step of the German Medical Licensing Examination
Erklärung zum Eigenanteil	Declaration of Contributions
Fakultätsrat	Faculty Council
Habilitation	<i>Habilitation</i>
hauptberuflich an der Fakultät tätigen Hochschullehrer	members of the Faculty of Medicine Tübingen with the rank of professor, junior professor or <i>Privatdozent</i>
Hochschuldozent, Privatdozent	<i>Hochschuldozent, Privatdozent</i>
Promotionsausschuss	Board of Doctoral Affairs
Promotionskomitee	doctoral committee for the individual doctoral candidate
Promotionsbüro	Office of Doctoral Affairs
Promotionsordnung	<i>Promotionsordnung</i> (Doctoral Degree Regulations)
Promotionsverfahren	Doctoral graduation procedure (beginning with submission of doctoral thesis)
Prüfungsausschuss, Prüfungskommission	Doctoral Examination Board
Staatsexamen	State examination in medicine/dentistry
vorläufige Annahme	provisional admission
Vorprüfungskommission	admissions committee
zahnärztliche Vorprüfung	German Preliminary Dental Licensing Examination
Zentralstelle für ausländisches Bildungswesen (ZAB)	German Central Office for Foreign Education
Zulassung zum Promotionsverfahren	Submission of doctoral thesis and admission to the doctoral graduation procedure

1 The Steps to a Doctoral Degree

1.1 Declaration of a doctoral project and admission as a doctoral candidate

Before you can be admitted as a doctoral candidate you must first find a supervisor with the rank of *Privatdozent*, junior professor or professor of the Faculty of Medicine as per § 4 (2)c of the faculty's Doctoral Degree Regulations (*Promotionsordnung*) and agree with that supervisor on a research topic which you submit as the working title of your doctoral thesis.

In our faculty, this supervisor is also referred to colloquially as your **Doktorvater** or **Doktormutter**.

In order to access the online application for admission as a doctoral candidate for the degrees Dr. med. and Dr. med. dent., please send an email to the Office of Doctoral Affairs. The application form for admission as a candidate for Dr. sc. hum can be downloaded from the website of the Faculty of Medicine Office of Doctoral Affairs. Both addresses can be found on the title page of this guideline.

1.1.1 Admissions procedures for the for doctoral degrees Dr.med./ Dr.med.dent.

A prerequisite for admission as a medical or dental doctoral candidate (Dr. med. or Dr. med. dent. degrees) is the successful completion of the first section of the German Medical Licensing Examination (*erste medizinische Prüfung*, M1) or the German Preliminary Dental Licensing Examination (*zahnärztlichen Vorprüfung*). A copy of the corresponding certificate must be submitted together with the application. In addition, a written supervision agreement between the doctoral candidate and the supervisor must be presented (cf. 1.2).

You must apply for admission as a doctoral candidate of the faculty as soon as you begin to work on your doctoral project so that the formal requirements for the doctoral degree can be checked. Please note that you are not entitled to supervision of your doctoral project until you have been admitted as a doctoral candidate.

Foreign university degrees can be accepted if they are equivalent to the German *Staatsexamen*. The following documents must be submitted along with the application form so that equivalency can be determined:

- a certified copy of the foreign university degree with transcript
- where appropriate, a certified translation of the university degree (if this is not already available in German or English)
- where appropriate, attestation of equivalency, recognition of professional license to practice medicine or dentistry or similar documents
- signed curriculum vitae in table form with information about previous education and scientific experience including completed examinations and academic degrees

The Office of Doctoral Affairs can carry out a preliminary evaluation of equivalency. If the Office of Doctoral Affairs has any reservations about equivalency, your application documents must be sent to the German Central Office for Foreign Education (ZAB) in Bonn with a request for a formal equivalency check (see <http://anabin.kmk.org/anabin-datenbank.html>, in German). Please be aware that such an equivalency check by the ZAB often takes several months.

At the recommendation of the *Promotionsausschuss* (Board of Doctoral Affairs) additional requirements can be set (for example, an entrance examination) if equivalency is not established. After passing the entrance examination you can be admitted as a doctoral candidate. A good knowledge of German or English is required.

1.1.2 Admissions procedures for the doctoral degree Dr.sc.hum.

The doctoral degree Dr. sc. hum. was developed for graduates of degree programs in non-medical but medicine-related fields who would like to pursue a doctoral degree in an interdisciplinary project at the Faculty of Medicine Tübingen. Such non-medical but medicine-related fields include biotechnology, molecular medicine, medical technology, certain areas of engineering and the natural sciences, psychology, and in individual cases subjects such as social sciences, law and economic/business sciences. Graduates of medicine or dentistry or degree programs outside of

Germany which qualify the graduate to practice medicine or dentistry are not admitted. For these persons the faculty has the doctoral degrees Dr. med., Dr. med. dent. and PhD in Experimental Medicine.

As a rule, the academic procedure for the Dr. sc. hum. degree is based on at least three years of full-time research and is equivalent in its requirements to the doctor of natural sciences Dr. rer. nat. These quality standards are essential to ensure international recognition of the title as fully corresponding to a PhD. For this reason, part-time doctoral work is generally not possible, and in the application for admission, the candidate must explain how (and for how long) the doctoral work will be financed, whether through a scholarship, a corresponding position included as part of grant funding or out of the budget of the doctoral supervisor. The application must also make it clear how an adequate scientific supervision of the project will be ensured. In projects with a clear interdisciplinary emphasis it may be advisable to have a second advisor if the subject or methodology of the doctoral project does not fall completely in the expertise of the primary supervisor.

Candidates who have already attained a doctoral degree cannot be admitted to the Dr. sc. hum. program unless they have successfully completed a second undergraduate degree.

Candidates who apply for admission to the doctoral program Dr. sc. hum. are first examined by a Provisional Examinations Board consisting of at least three university teachers. In this examination the scientific qualifications of the candidates and the suitability of the doctoral project are evaluated. The Provisional Examinations Board may set conditions for admission such as the completion of additional courses in Tübingen if it judges these to be advisable. For this reason we recommend to candidates that they seek to make the interview with the Provisional Examinations Board at an early date, before work on the doctoral project begins or in the first year of doctoral work after the orientation phase.

The application form for admission as a doctoral candidate is available for download from the internet pages of the Faculty of Medicine and is turned in to the Office of Doctoral Affairs.

The following documents are to be turned in with the application form:

- a written supervision agreement between the candidate and supervisor (A template for such a supervision agreement is available on the website of the Office of Doctoral Affairs. For more information, see 1.2. below.)
- an outline of the proposed doctoral project, approx. 3-5 DIN A4 pages, covering the following points:
 - an overview of the proposed topic and scientific goals of the doctoral project
 - a definition of the scientific question being addressed
 - a presentation of the planned methods with a rough timeline
 - where consultation with the ethics commission is necessary: whether the consultation has already taken place or has been scheduled
 - where an animal experiment permit is necessary: whether the permit has already been applied for or an application is planned
 - where and in what form additional support or cooperation will be necessary for the project
 - why the academic title Dr. sc. hum. is particularly appropriate for the topic of the doctoral work

The outline of the proposed project must be signed by the doctoral supervisor.

- one copy of the last university graduation thesis, if requested by your admissions committee

Recognition of university degrees as a prerequisite for admission (§3 (2))

The applicant must have successfully completed a suitable university degree in Germany with a final comprehensive examination. The following can be recognized:

- a master's degree from a university

- degree programs at a university, college of education (*Pädagogische Hochschule*) or academy of arts (*Kunsthochschule*) with a standard period of study of at least four years.

The grade of the final comprehensive examination must fulfil the admissions criteria for doctoral work at the University of Tübingen if one of the subjects of the completed degree program is represented at the University of Tübingen.

In addition, highly qualified graduates of master's or *Diplom* degree programs at a university of applied science (*Fachhochschule*) may be admitted to the doctoral program if they demonstrate during a defined probation period (*Eignungsfeststellungsverfahren*) that they possess the same qualifications for scientific work in the subject of the doctoral project that a university graduate would have.

The prerequisite for admission to the probation period is an above-average graduation grade (as a rule with the final grade of 1.3 or better), which must be documented with a certificate from the university of applied science (*Fachhochschule*) or university of cooperative education (*Berufsakademie*). In addition to the transcript, the Board of Doctoral Affairs requires evidence of independent scientific work (for example scientific publications as first author with a description of the candidate's own intellectual contribution to the paper) in order to evaluate the qualifications for scientific work. The probation period generally lasts two to a maximum of three semesters. The Board of Doctoral Affairs decides which courses must be absolved during the probation period, generally up to 12 ECTS points and normally follows the recommendations made by the admissions committee.

Applicants who graduated outside of Germany may be admitted to doctoral studies if their degree was conferred by an accredited university (category H+) and is equivalent to a successfully completed degree from a German University with a standard period of study of at least 4 years.

The following documents must be turned in along with the application for admission as a doctoral candidate so that equivalency can be determined:

- a certified copy of the detailed foreign university transcript
- where appropriate, a certified translation of the university transcript (if it is not already in German or English)
- signed curriculum vitae in table form with information about previous education and scientific experience including completed examinations and academic degrees

At the recommendation of the Board of Doctoral Affairs (*Promotionsausschuss*), additional requirements can be set (for example, a provisional admission interview) if equivalency is not established. The applicant can be admitted as a doctoral candidate if the provisional admission interview is passed. A good knowledge of German or English is required.

The equivalency agreements approved by the Standing Conference of German Ministers of Education and Cultural Affairs (Kultusministerkonferenz) and the Conference of German University Presidents (Hochschulrektorenkonferenz) are consulted to determine the equivalency of foreign university degrees. If there are doubts about equivalency, the German Central Office for Foreign Education (Zentralstelle für ausländisches Bildungswesen) or a corresponding evaluation service may be consulted.

Statement of the admissions committee

The Board of Doctoral Affairs appoints an admissions committee for every Dr. sc. hum. application. The admissions board committee of at least three university teachers, one of which belongs to that faculty outside of the Faculty of Medicine that is closest to the subject of the dissertation. The doctoral supervisor is not to be appointed as a member of the admissions committee.

In a personal interview with the candidate, the admissions committee evaluates whether the prerequisites for admission as a doctoral candidate are fulfilled (suitability of the candidate for scientific work, prior knowledge, suitability of the project) or whether additional conditions must be met. These can include participation in lectures, seminars or laboratory courses.

The interview with the admissions committee generally lasts 45 minutes. The candidate must bring previous university theses along for the committee to examine. Topics of the interview include

- previous scientific work of the applicant (for example, *Diplom* or master's theses, other theses)
- goals of the doctoral project and discussion
- professional qualifications of the applicant in the context of the subject of the doctoral work and, where appropriate, recommendations for further training
- where applicable, determination of further requirements before the applicant is admitted to doctoral studies.

Before the interview, the chairman of the admissions committee and the applicant may discuss by telephone whether the outline of the proposed doctoral project or a previous thesis should be introduced in a short oral presentation.

The admissions interview usually takes place within three months of when the applicant is notified that the admissions committee has been appointed.

Admission as a doctoral candidate

If the admissions committee makes a positive recommendation, the applicant will receive a letter from the Office of Doctoral Affairs confirming his or her admission as a doctoral candidate.

Doctoral candidates must apply for admission from the faculty when they first begin work on their doctoral project so that the formal prerequisites for their doctoral candidacy can be checked. This is especially important in the case of applicants pursuing a Dr. sc. hum. degree, because the admissions committee may recommend stipulations such as additional courses. As an alternative, doctoral candidate and supervisor have the option of simply concluding a supervision agreement for an orientation phase.

When you plan to apply for admission as a doctoral candidate, please note that it can take several months until your admission is cleared because a number of meetings must be scheduled for the Board of Doctoral Affairs and the admissions committee. In individual cases it is possible to issue **provisional admission** (*vorläufige Annahme*) as a doctoral candidate subject to a positive decision by the admissions committee. With this letter of provisional admission it is possible to enrol as a student of the University of Tübingen and be eligible to apply for a dormitory room, for example. Please contact the Office of Doctoral Affairs for more information.

The Office of Doctoral Affairs must be notified of any changes in the topic of your doctoral dissertation or changes of supervisor during your doctoral work.

1.1.3 External dissertations

According to § 3 (1) of the Promotionsordnung (PhD Rules / Regulations for Doctoral Studies), doctoral candidates must have studied for at least two semesters at the Faculty of Medicine of the University of Tübingen or worked for at least one year at an institute or hospital of the Faculty of Medicine Tübingen before they may submit a thesis for a doctoral degree at the Faculty of Medicine Tübingen. In justified cases the Board of Doctoral Affairs may allow exceptions on the basis of a written application from the candidate. This request must be submitted before doctoral work is begun.

In order to evaluate this written application, it must include an outline of the proposed doctoral project describing:

where the research will be carried out,

why the candidate wishes to carry out the dissertation work in that particular laboratory and whether adequate resources, infrastructure and working space are ensured,

what the candidate's connection to the Faculty of Medicine Tübingen is and how it came about, and

why the candidate wishes to submit a dissertation in Tübingen.

Additionally, we ask that you nominate an additional supervisor who will form your doctoral supervision team together with the primary supervisor.

A letter of consent from the primary supervisor must be handed in along with your application.

If you are admitted as a doctoral candidate, meetings with your supervision team must take place at least every six months during your time as a doctoral candidate, and these meetings must be documented, preferably in the doctoral logbook provided by the faculty. Documentation of at least three such meetings must be submitted when you apply to start the doctoral graduation procedure and turn in your dissertation for review. These meetings must have taken place before you begin your research, when you finish data acquisition and before you submit your thesis.

1.2 Before practical work commences

1.2.1 Supervision agreement

The collaboration between doctoral candidate and supervisor must be formalized in a supervision agreement. The Faculty of Medicine has drawn up a supervision agreement template which may be altered to meet individual needs. The supervision agreement template is available for download from the website of the Faculty of Medicine's Office of Doctoral Affairs.

It is the supervisor's responsibility to advise the doctoral candidate on a regular basis during work on the doctoral thesis. Before the actual work begins, the doctoral candidate and supervisor should draw up a written outline sketching out the goals and how the project is to be carried out. In addition, the supervisor can assist the doctoral candidate in the selection of useful courses and seminars, such as those offered by the Graduate Academy.

1.2.2 Doctoral logbook

The Faculty of Medicine provides each doctoral candidate with a logbook in which meetings with the supervisor, participation in courses, lectures and congresses, and agreements between doctoral candidate and supervisor are recorded. These logbooks may be examined by the reviewers and by the Board of Doctoral Affairs in the course of the doctoral graduation procedure. It is in your own best interest that you make sure this documentation is complete and accurate.

1.2.3 Consultation with the Ethics Commission

Before you begin work on your doctoral dissertation, you must determine together with your supervisor if legal consultation with the Ethics Commission about the research project is required or has already taken place. As a rule, the Ethics Commission of the Faculty of Medicine and the University Hospital Tübingen is the responsible body, and it also decides whether votes of ethics commission outside the jurisdiction of Baden-Württemberg chamber law will be recognized. Approval by the Ethics Commission must be acquired **before** work begins. The Ethics Commission does not grant retrospective approval to studies which have already been carried out. In such cases, you will **not** be admitted as a doctoral candidate with the proposed topic.

Doctoral candidates must recognize and adhere to the ethical principles governing medical research on humans as laid down in the Helsinki Declaration of the World Medical Association.

1.2.4 Animal experiments

If in the course of your doctoral work you will be carrying out experiments involving animals, these experiments must be approved by the local authorities (*Regierungspräsidium Tübingen*) before work commences. Please clarify with your supervisor if there is already a suitable animal experiment permit under which your work can be carried out. If you have questions about your application for an animal experiment permit, please contact the Animal Welfare Officer at the Facility for Animal Welfare, Veterinary Services and Laboratory Animal Science (*Einrichtung für Tierschutz, Tierärztlichen Dienst und Labortierkunde der Universität Tübingen*; see <http://www.medizin.uni-tuebingen.de/tierschutz/html/download.html>).

1.2.5 Planning statistical analysis

The Institute for Clinical Epidemiology and Applied Biometry assists members of the Faculty of Medicine in planning and statistically evaluating laboratory and animal experiments as well as clinical and epidemiological trials. Consultation is free of cost. Please register for consultation at <http://www.medizin.uni-tuebingen.de/en/Research/Institutes/Clinical+Epidemiology+and+Applied+Biometry.html>.

Wherever possible this consultation should take place in the planning phase of a project so that parameters such as the necessary number of study participants, laboratory animals and test repetitions can be determined at an early stage.

1.2.6 Good scientific practice

During your time as a doctoral candidate, you must take part in at least one course on good scientific practice at the Faculty of Medicine. Such courses are announced on the homepage of the Office of Doctoral Affairs and by email to all doctoral candidates. After completing the course you will be given a course certificate which you must turn in along with your application for admission to the doctoral graduation procedure after completing your dissertation.

All doctoral candidates are required to recognize and abide by the Principles for the Safeguarding of Good Scientific Practice of the German Research Council DFG (<http://www.medizin.uni-tuebingen.de/en/Research/Research+Funding/Good+Scientific+Practice.html>)

An important element of good scientific practice is the full documentation of all experiments and calculations in your own laboratory notebook with pre-numbered pages and permanent binding, so that your results can be verified. Laboratory notebooks, all protocols and original data must be stored in the institution where the work was carried out, as a rule for at least ten years. The laboratory notebooks must be presented to the reviewers, the admissions committee and the Board of Doctoral Affairs for inspection at their request. In March 2013 the Faculty of Medicine introduced standard laboratory notebooks which can be ordered from the central warehouse (*Zentrallager*) using the order number 60200814. The cost of the laboratory journals is charged to the department.

1.2.7 Confidentiality

Data originating in the University Hospital and the research institutes which are provided to the doctoral candidate or which are communicated to the doctoral candidate in the course of discussions or seminars must be treated confidentially by the doctoral candidate. This applies to patient data as well as to research concepts and findings of other members of the laboratory or work group.

1.2.8 Active participation in scientific events

Scientific exchange and discussion are an important part of good scientific practice and belong to the education and training of young scientists. The supervisor and group leaders must ensure that doctoral candidates have the opportunity to take part in scientific events inside the work group and in cooperation with other work groups.

1.2.9 Participation in courses of the Graduate Academy

As soon as they are admitted by the faculty, all doctoral candidates automatically become members of the Graduate Academy and can take part in the academy's courses, as far as space is available. In many cases, courses of the structured doctoral programs are open to other doctoral candidates of the faculty as well. In addition to the Faculty of Medicine's own courses, the central Graduate Academy of the University of Tübingen also offers qualification programs for young scientists. You can find the central Graduate Academy's course schedule at <http://www.uni-tuebingen.de/en/research/graduate-academy.html>.

The Graduate Academy uses the e-learning platform ILIAS for information and course management.

1.3 Application for the initiation of the doctoral graduation procedure (submission of the dissertation for review)

As per §4 (6) of the *Promotionsordnung*, the application for the initiation of the doctoral graduation procedure should be submitted three years after your admission as a doctoral candidate. You may apply for an extension of this deadline with the consent of your doctoral supervisor in an informal letter addressed to the Office of Doctoral Affairs. The letter should be signed by you and your doctoral supervisor.

The following documents must be submitted when the candidate applies for the initiation of the doctoral graduation procedure:

- Signed Submission of Doctoral Thesis form with declarations as per § 5 (2) of the *Promotionsordnung*. The application form is available for download from the website of the Office of Doctoral Affairs.
- Two complete copies of the doctoral dissertation (typewritten or printed) in a sturdy springback binder. They may not be hole-punched or loose. A third copy should be given to your supervisor. A declaration of contributions to the work should be included with the dissertation in the binder. A template for such a declaration can be found on the homepage of the Office of Doctoral Affairs.
- An electronic copy of your dissertation, emailed to the Office of Doctoral Affairs (see below)
- One-page summary of the dissertation, signed by the supervisor.
- A certificate of participation in a course on Good Scientific Practice which fulfils the current recommendations of the Board of Doctoral Affairs.
- For doctoral degrees Dr.med./Dr.med.dent: Certificate of the successful completion of the German medical or dental licensing examination (notarized copy) or of an equivalent foreign licensing examination (notarized copy). The doctoral graduation procedure can be initiated (i.e. the doctoral dissertation can be reviewed) if a notarized copy of the certificate of the first step of the German Medical Licensing Examination (*1. Abschnitt der Ärztlichen Prüfung*, M1) or the German Preliminary Dental Licensing Examination (*zahnärztliche Vorprüfung*) is presented. However, the doctoral certificate is not handed out until the German medical or dental licensing examination or equivalent has been passed and the corresponding certificate can be presented.
- Signed curriculum vitae in table form with details about previous scientific education, work and training, including completed examinations and academic degrees.
- A police clearance certificate (*Führungszeugnis Belegart 0*, no more than six months old). For doctoral degrees Dr.med./Dr.med.dent you may also use a notarized copy of the police certificate submitted for the German medical or dental license if it is no more than 3 months old. [Translator's note: the police clearance certificate type 0 is sent directly to the Office of Doctoral Affairs and is not handed out to the applicant.]
- Where applicable, a declaration of consent from the co-authors. If original articles (including excerpts, cf. Chapter 2.2) or data from other persons are used in the doctoral dissertation, the co-authors must declare their consent to the use of the publication or data in the doctoral dissertation and that they agree with the Declaration of Contributions. In such cases you yourself are responsible for contacting the publishers and requesting permission to use the publication or excerpts of the publication for your dissertation.
- **After the plagiarism check** a Declaration of Originality, to be signed by you and your supervisor stating that the plagiarism check has confirmed the originality of the work and that the report from the plagiarism check does not contain any indication of problematic, uncited use of another author's text, data or figures. The required declaration form will be sent to you after the plagiarism check.

How the plagiarism check works

Please send an electronic copy of the dissertation to the Office of Doctoral Affairs (promotionen@med.uni-tuebingen.de) so that the plagiarism check can be carried out. On the Submission of Doctoral Thesis form you must declare that this version is identical to the paper copy of the dissertation that you turned in in the springback folder. You also declare that you are aware that the unacknowledged use of other people's work constitutes attempted fraud.

We evaluate your thesis (after removing personal data) using plagiarism software to identify text and data matches. We receive a pdf report with the results of the check. In the report, all of the passages are marked where matches to other sources were found, and the sources are listed. You and your supervisor will receive a copy of the report with the request to confirm its results and that all sources, whether text, images or data, have been properly acknowledged and referenced. Both

you and your supervisor must sign the confirmation of originality and either send it back by mail or bring it by in person during the opening hours of the Office of Doctoral Affairs. Your dissertation will not be sent to the reviewers until the signed declaration of originality has been received.

Note about patent law

If you plan to submit any of the results of your doctoral work for patent, be sure to let the Technology Transfer Office of the Faculty of Medicine advise you **before** you submit your dissertation to the Office of Doctoral Affairs and **before** you publish or present results, for example at conferences or on posters. You can find the Technology Transfer Office at <http://www.medizin.uni-tuebingen.de/en/Research/Inventions+and+Patents+Research+and+Technology+Transfer.html>.

1.4 Formatting requirements for dissertation copies turned in for review

Detailed recommendations for the formal structure of your dissertation can be found in Chapter 2.

The title page and the second page must be formatted exactly as specified in the Doctoral Regulations (*Promotionsordnung*; cf. Appendices 1 and 2).

The dissertation copies submitted for review or admission to the doctoral graduation procedure must be printed as follows:

- Paper size: DIN A4
- Printed on one side of the paper
- Line spacing: 150%; bibliography single-spaced
- Font and type size: Arial or Times New Roman 12 point
- Legends may be single-spaced with smaller type.
- Page margins should be 3 cm on all four sides.
- The dissertation may be written in German or English, but English dissertations must include an additional German summary.

The mandatory copies which must be submitted to the University Library upon graduation (cf. 1.6) must be identical to the version submitted for review; the only thing that changes is the print format. The color scheme must remain the same as well. If you have to make changes, please be aware that these must be approved by your supervisor; see § 15 (2) of the *Promotionsordnung*.

1.5 The review process

Please allow at least 6 months for the review process.

When the doctoral candidate's dissertation, Submission of Doctoral Thesis form and all other paperwork have been submitted to the Office of Doctoral Affairs, the Dean appoints reviewers. The first and second reviewers are each allowed approx. two months to prepare and submit their reviews. If the grades suggested by the two reviewers differ by more than one whole point or if they suggest the grade *summa cum laude*, the Board of Doctoral Affairs may be consulted or an additional review may be requested.

When the reviews have been handed in, the dissertation is made available for two weeks for inspection by all regular members of the Faculty of Medicine Tübingen with the rank of professor, junior professor or *Privatdozent*. If no objections are raised against the dissertation during this time, the written dissertation is accepted, and we will inform you by email. At this point you may view the reviews of your dissertation. Please take advantage of the opening hours of the Office of Doctoral Affairs, or make an appointment with us.

1.6 The oral examination (defense) and calculation of the doctoral grade

As per §12 of the *Promotionsordnung*, the oral doctoral examination is carried out in the form of a thesis defense. Please see the information sheet on the oral examination which is available to download from the website of the Office of Doctoral Affairs. It may be integrated in an institute colloquium series.

Organization

When the inspection period is over, you will receive an email from the Office of Doctoral Affairs asking you to organize your oral examination within the next six weeks. When you receive the email, please speak with your doctoral supervisor about when your thesis defense can be scheduled. As a rule it will take place in the department where the doctoral research was carried out. Please contact your second examiner as well to coordinate dates. As a rule, your second reviewer will also act as second examiner. You can find out who this is from your supervisor after the inspection period. Once the time and place of the oral examination have been set, please inform the Office of Doctoral Affairs, which will confirm the time in official invitations.

If you do not appear for the examination at the appointed time, the examination is graded with “fail” as per § 12 (3) of the *Promotionsordnung*. If the candidate misses the examination date for reasons beyond his control, a new date can be set.

You yourself are responsible for the organizational details of the examination (including technical equipment such as projectors). We recommend contacting the chairman of the Examination Board before the examination in order to discuss the procedure.

The examination procedure

The thesis defense may take place in German or English. The decision is yours to make. During the thesis defense you will first present the essential contents and results of your dissertation (generally in the form of a 30-minute PowerPoint presentation) and then defend them in a discussion with the members of the Doctoral Examination Board (*Prüfungskommission*). A maximum of 30 minutes are allotted for the discussion.

You will be expected to answer questions about the methods and findings of your work, the scholarly context of the dissertation topic and about related questions in the field of the dissertation. You are expected to respond in a scientifically sound manner and to be able to counter fundamental objections raised by the reviewers and the members of the Examination Board. The oral defense and the following round of questions are open to the public subject to the available space, but only members of the Examination Board may pose questions. Please ensure that a public announcement of your thesis defense is made. This is generally done by the department in which you carried out your thesis research.

After the examination, the Examination Board retires to determine whether the examination will be given: **in the cases of Dr.med. / Dr.med.dent.: a “pass” (*bestanden*), “fail” (*nicht bestanden*), or a grade** (if “summa cum laude” has been suggested or in cases of the degree “Dr.sc.hum.”). **As a rule in the cases of Dr.med. / Dr.med.dent, the oral defense is graded “pass” or “fail.”** The examination is passed if each examiner gives the grade “pass.” If the grade “summa cum laude” has been suggested, and for the degree Dr.sc.hum., **each of the examiners gives one of the following grades: “summa cum laude” (0 / excellent), “magna cum laude” (1 / very good), “cum laude” (2 / good) or “rite” (3 / fair). The grade for the defense counts for 1/3 of the overall grade. The individual grades are recorded on the provided protocol sheet. The chairman calculates the overall grade.**

When the doctoral grade has been determined, it will be communicated orally to you by the chairman of the Examination Board. After the examination protocol has been filed, the Office of Doctoral Affairs issues clearance to print the dissertation. Only after the dissertation has been printed and published and the mandatory copies have been handed in to the University Library can the doctoral certificate be issued by the Office of Doctoral Affairs and handed over to the candidate (duration approx. 2 weeks). Only when the doctoral certificate has been handed over to the candidate are you allowed to bear the title “Doktor.”

As a rule, if the oral examination is not passed, it may be repeated once within 12 months of the first examination. If the defense is not passed a second time, the doctoral graduation procedure shall be considered unsuccessfully terminated.

1.7 Printing and publishing the mandatory copies (§15)

When the written dissertation has been accepted (see above, 1.4, The review process) and the oral examination (thesis defense) has been passed, you will receive a letter from the Office of Doctoral Affairs clearing you to initiate the publication process.

As a rule, the dissertation should be published electronically. You should make the decision whether to publish your dissertation in digital form on the publication server of the University Library together with your supervisor, because an online publication could have copyright-related consequences for later publications of your data in a scientific journal. Your supervisor must indicate consent for an electronic publication before the dissertation is published online; a suitable form can be found on the homepage of the Office of Doctoral Affairs, and you will be given a copy with your clearance for publication. At the request of your supervisor, you may be given permission to provide 30 printed copies instead of an online publication. If the results of the dissertation or excerpts have already been published in a journal, you must clarify with the publisher if for copyright reasons you may publish your dissertation online.

If the dissertation is published electronically, it will be stored on the publication server of the University Library and it will be publicly accessible over the Internet. In this case, you are only required to hand in two printed mandatory copies to the University Library. The doctoral candidate must declare that the digital version is identical to the printed copies. (The declaration form `ubt_uebereinst_nurDiss.pdf` can be downloaded from <https://publikationen.uni-tuebingen.de/xmlui/handle/10900/42126?staticpage=tobiaslib/vertraege>).

The printed copies must be printed on **DIN A5 paper size on both sides of the paper**. Page layout (page margins, type size, line spacing, etc.) must correspond to the copies of the dissertation submitted for review (cf. 1.2). This means that the dissertation does not need to be re-formatted before the final printing. The title page is printed on the outside of the cardboard cover and again as the first page of the dissertation. The title page and page 2 must follow the layout of the mandatory templates which can be found in Appendices 1 and 2.

When you submit your mandatory copies, the University Library will issue a confirmation of submission which it sends to the Office of Doctoral Affairs. You may also turn in the certificate yourself in the Office of Doctoral Affairs.

Additional information, in particular about the online publication of your dissertation on the University of Tübingen publication server (TOBIAS-lib) can be found on the internet pages of the University Library. In addition, the staff in the Dissertation Office of the University Library are available to answer your questions pertaining to digital or printed dissertations.

If you have made findings during your doctoral research which may be patentable, be sure to contact Dr. Ines Dünkler at the faculty's Technology Transfer Office as soon as possible so that she can advise you about inventions, patents, research and technology transfer. A link to the Technology Transfer Office may be found above in section **1.3 About patent law**.

Don't forget to give your reviewers a printed copy of your dissertation if they would like to have one.

1.8 The doctoral certificate

Once the Office of Doctoral Affairs receives confirmation from the University Library that you have handed in the mandatory copies of your dissertation, your doctoral certificate will be prepared. As soon as the certificate is ready and signed (as a rule in two weeks) it may be picked up in person during the opening hours of the Office of Doctoral Affairs by you or by a person authorized by you. The two copies of your dissertation which you submitted for review may also be picked up.

When the doctoral certificate is handed over to you, the doctoral graduation procedure is officially complete and you have the right to use the academic title of "Doktor."

2 Formal Structure of the Dissertation

As a doctoral candidate, you will submit a scientific treatise in manuscript form demonstrating that you are capable of independent scientific work. In your dissertation, you must present your own research findings in the appropriate form and length. As a rule, a dissertation manuscript is expected to be **50 to 90 (Dr. med./ Dr. med. dent.) pages long / 80 to 120 (Dr. sc. hum) pages long**. In this chapter of the guideline you will find recommendations for the wording and the outline of your dissertation both for the traditional monograph-style dissertation (2.1) as well as for the special case of a cumulative dissertation using previously published original articles (2.2).

In some cases parts of the dissertation may have been published already. If you use text passages or figures from your own publications, you must cite the published source everywhere such previously published material is used. Please remember that a dissertation usually goes into much greater detail than a publication in a journal. If you decide after consultation with your supervisor to use verbatim passages, you must mark such passages with quotation marks and cite the source. We also recommend highlighting them with special formatting (for example with the use of italics).

For each use of non-original work, you must explain in detail in your Declaration of Contributions who contributed in what form to the generation of the text, data and figures in question. In such cases we also ask you to request your co-authors to sign the Declaration of Contributions. They may also send their consent to the Office of Doctoral Affairs by email.

2.1 Formal structure of a traditional monograph-style dissertation

Title page (see Appendix 1)

Reverse side of title page or page 2 (see Appendix 2)

Dean:	Professor Dr. I. B. Autenrieth
First reviewer:	
Second reviewer:	<i>(name inserted after completed review process)</i>
Date of the oral examination	DD.MM.YYYY

Optional: Page 3: Dedication

Optional, but if a dedication is included, it must be placed on page 3.

Table of contents

Table of contents with page numbers. Where appropriate, include an additional index of figures and tables.

List of abbreviations, where appropriate

List of all abbreviations used in the dissertation, in alphabetical order.

1. Introduction

Introduction to the topic of the dissertation, placing it in the context of the scientific literature and giving a precise summary of the problem being investigated at the end of the introduction.

2. Materials and Methods

Depending on the field of investigation: patient materials (and/or laboratory animals, cell lines), test persons, study set-up, study protocol, experimental set-up, experiment protocol, medical histories, methods with range of error and literature citations, calculations, statistical analysis.

3. Results

This is the main part of the dissertation and should make up 30 to 50% of the treatise. In it, you clearly structure and present your own scientific findings, using figures and tables to illustrate your points. At the end of the chapter you may add a summary of your findings. This section should not include a discussion or references to the literature.

If results are presented in the dissertation which you have already published in the same or in a similar form, you must give the source; in this case, you must cite yourself (see also Chapter 2.3).

4. Discussion

Discussion of your own findings in the context of the current state of scientific knowledge. The discussion should be arranged by the various points being made. At the end of the discussion, present the conclusions from your work.

5. Summary (1-2 pages)

Summary of the entire dissertation, including a definition of the scientific question being addressed, methods, summary of results, discussion and conclusions.

German summary (where appropriate)

An additional German summary must be included in doctoral theses written in English.

6. Bibliography

See Chapter 2.3.2.

7. Declaration of Contributions

A declaration of the candidate's own contribution to the work is always required. Contributions of other persons (for example data or contributions to publications) must always be noted, naming the contributor (see also Chapter 2.4).

8. Publications (where applicable)

*In this section you may refer to publications based on the dissertation. Please cite only articles which have already been printed or accepted for publication, giving full citation details (see also 2.3.4. "Structure of the bibliography"). Publications of the candidate which do not pertain directly to the dissertation should not be listed here, but may be cited in the curriculum vitae. **Please note that if publications based on your dissertation appear or are accepted for publication between the review and publication of your dissertation, these changes must be noted in the dissertation (i.e. by citing the publications in which the text or data in question are used).***

Example:

Parts of the dissertation presented here have already appeared in the following publications:

Author(s) - title - journal - year - volume - pages

Author(s) - title - journal - year - volume - pages

You may refer to planned publications or submitted manuscripts relevant to the dissertation in an accompanying letter, but not in the dissertation itself.

Optional: Acknowledgements (next to last page of the dissertation)

Optional: Curriculum vitae (last page of dissertation)

A short curriculum vitae of the author in table form, without signature and without address. [For Dr.med. / Dr.med.dent.:](#) If the mandatory copies of your dissertation contain a curriculum vitae, please add the exact date of your Medical Licensing Examination (2nd or 3rd Staatsexamen).

2.2 Inclusion of publications in a dissertation

2.2.1 Prerequisites and format

In exceptional circumstances you may also include in the dissertation your own publications or manuscripts which have been accepted for publication (see § 6 (2) of the *Promotionsordnung* of the Faculty of Medicine Tübingen).

Because this is only permitted in special cases you must **first** submit an application for special permission to the Board of Doctoral Affairs. The application must contain:

- a cover letter (signed by candidate and supervisor)
- curriculum vitae including university degrees
- list of publications
- the publications to be included as pdf files
- For each publication, include a declaration of each author's own contribution to the publication.

When publications with multiple authors are included in a dissertation, particular care must be taken to ensure that the individual contribution of the doctoral candidate is clearly explained and corresponds in content and extent to the requirements for a dissertation. As a rule, this means that a single publication is not sufficient.

2.2.2 Prerequisites:

- Articles have already been published or accepted for publication (otherwise a traditional dissertation in monograph style must be submitted).
- Convincing overall concept (publications all address a defined scientific problem)
- Independently written publications or independently written major contributions to publications; the candidate's own intellectual contribution must be clearly explained (as a rule, these will be first authorships)
- Consent of the co-authors

2.2.3 Format:

- Submission in dissertation form (with the usual length of approx. 50 pages), in which the publications have been integrated as chapters as per § 6 (2) and § 15 of the *Promotionsordnung*. If previously published manuscripts are included in the print layout of a journal, the entire dissertation should have the customary length of about 50 pages. If the included publications are not yet formatted or printed, the dissertation should have the corresponding number of additional pages.
- In addition to the publications, the dissertation must have an introduction, an explanation of the scientific problem being addressed, and a summary.
- In the case of publications with more than one author, particular care should be taken that a declaration of the candidate's own contribution is included which makes it clear what the individual contributions of each of the authors are, particularly those of the doctoral candidate (formal structure as explained below).
- Appendices:
 - o Declaration of Consent from all of the co-authors of the publications *that they agree to the use of the publication as part of the dissertation and that the Declaration of Contributions is accurate. (You may wish to simply make extra printouts of the Declaration of Contributions and ask each of your co-authors to sign.)*
 - o Publisher's confirmation of acceptance for publication or a copy of the published article.

2.2.4 Language:

- The dissertation may be submitted in German or in English, but not in a mixture of the two.
- If a dissertation is submitted in English, it must include an additional summary in German.

2.2.5 Reproduction of the dissertation:

See detailed instructions in Chapter 1.6.

2.3 Formal structure of a cumulative dissertation

Title page (see Appendix 1)

Reverse side of title page or page two (see Appendix 2)

Dean: Professor Dr. I. B. Autenrieth
 First reviewer:
 Second reviewer: *(name inserted after completed review process)*

Optional: Page 3: Dedication

If a dedication is included, it must be placed on page 3

Table of contents with page numbers

1. Introduction and explanation of the scientific problem being addressed

(generally 8 to 15 pages)

- *If the dissertation includes publications focusing on a variety of topics, the scientific question must be worded so as to make the overall concept of the doctoral thesis clear.*
- *If joint publications (i.e. publications with multiple authors) are submitted, the concrete problem addressed by the doctoral candidate must be described. It is possible that this applies only to part of the publication.*

2. Results

2.1 [Title of publication (authors, published in)]

At the beginning of each chapter, list the authors and the complete citation data of the publication (journal, volume, pages, year of publication). The publications can be bound in the dissertation as a reprint of the journal pages or in another form such as a manuscript. If using a manuscript, ensure that figures and tables clearly refer to the correct chapter.

2.2; 2.3 etc. [Title of publication (authors, published in)]

Each additional publication is included as a separate chapter.

2 ... [Title]

Where appropriate, unpublished data on the thesis topic can be included as an additional chapter. If other persons were involved in the acquisition or generation of the data, these persons must be named as co-authors at the beginning of the chapter, and a Declaration of Contributions must be provided (see below).

3. Discussion (generally 8 to 15 pages)

Discussion of the candidate's own results in the context of the current state of scientific knowledge. The discussion should be organized by the various points of discussion; conclusions from the work should be placed at the end of the discussion.

4. Summary

This section summarizes in 1-2 pages the scientific problem, the most important results (naming the methods used), and the discussion of results.

German summary, where applicable

Dissertations written in English must also include an additional German-language summary.

5. Bibliography

List of all the scientific literature used in the dissertation (journal articles + introduction) in alphabetical order (see 2.3.2).

6. Declaration of Contributions

If the publications or manuscripts are joint works (publications with multiple authors), the candidate must name the co-authors and explain their contribution to the overall project in this section, explaining the significance of the candidate's own contribution to the work as a whole. This must be done for each publication and chapter, with a short description of the each of the tasks involved. The doctoral candidate's own contribution must be clearly explained. See also Chapter 2.4.

Optional: Acknowledgements (next to last page of the dissertation)

Optional: Curriculum vitae (last page of the dissertation)

A short curriculum vitae of the author in table form (without signature and without address).

Please note: The pages of the dissertation must be numbered consecutively throughout, even if journal pages are used).

2.4 Additional formatting instructions for the dissertation

2.4.1 Title page

A mandatory template for the title page and for page 2 can be found in **Appendices 1 and 2**. Please follow these templates precisely. With the clearance to print your dissertation you will be notified of the names of the second and, where applicable, the third reviewer which should be entered on page two of the printed version. Before your dissertation is printed, you must present the title page to the director of the university institute or department where the dissertation work was carried out for approval.

2.4.2 Correct citations

Non-original text or figures used in a dissertation must be clearly marked as such.

Please avoid using entire passages from other publications. In independently writing a dissertation, the candidate proves that he or she is capable of independently presenting a scientific subject in written form and of further developing scientific problems through independent thought.

An exception is the use of texts previously published by the doctoral candidate himself. As a rule, the doctoral candidate should be the first author of the publication in question. Such use is permissible, but for copyright reasons must be clearly identified as a quote, citing the original publication. If text passages are quoted verbatim, they must be clearly marked with parentheses and citation of the source. In addition, the Declaration of Contributions must make it clear what the doctoral candidate's own intellectual contribution was and, where applicable, what contributions were made to the publication by other authors. Previously published figures must also be accompanied by information about where they were first published.

2.4.3 Figures and tables

Figures and tables along with their legends and labels should be understandable on their own without the dissertation chapter in which they appear.

Figures:

All figures are numbered consecutively; the number, title and legend should be placed below the figure. The legend must contain a short description of the data acquisition such as information about the experimental set-up and reagents used; test persons/cell lines/laboratory animals; type of measurements (means with standard deviations, number of single values, etc.). In addition, all abbreviations and symbols used in the figure must be explained. Axes must be clearly labeled (with units), and microscope images must include a scale.

If figures are taken or adapted from other publications, include the appropriate credits (see 2.3.2. "Correct citations").

Tables:

All tables are numbered consecutively; above the table place the number, title and, where appropriate, a legend containing all the information needed to understand the table.

2.4.4 Structure of the bibliography

We recommend the use of a suitable reference management program to generate your bibliography. Announcements of introductory courses for a variety of such programs are made by the Graduate Academy. It is important to use a consistent structure in your bibliography. All citations must be complete with authors, all co-authors, year of publication, article title, name of the journal, volume number and first and last page numbers of the article. Always place the initial(s) of the first name(s) after the family name. Don't forget to list your own publications, where appropriate.

Always use the official abbreviations of journal titles as listed in the PubMed journal database (<http://www.ncbi.nlm.nih.gov/pubmed>).

We recommend arranging your bibliography alphabetically using the Harvard citation style, because it is very reader-friendly and makes the reviewers' job easier.

If the bibliography is arranged alphabetically, the first sorting criterion is the last name of the first author. If more than one first author has the same family name, the initials of the first name are used for sorting. If both family and first names are the same on more than one paper, the entries are then sorted by the year of publication in chronological order. If there is more than one such entry with the same year of publication, lower case letters are added to the year to distinguish the papers (e.g. 2001a, 2001b).

In the case of an alphabetical bibliography, inline citations (i.e. citations within the body of the text) take the form of author's last name and the year; if there are more than two authors, name the first author followed by the abbreviation et al. [examples: (Meier 2005), (Meier and Müller 2006), (Meier et al. 2007)].

When citing online sources, please distinguish between dynamic internet pages with URLs which can change over time and documents with a "persistent identifier."

Documents assigned a permanent internet address have a so-called "persistent identifier", which is a unique, location-independent permanent identifier of digital objects ensuring reliable access to resources over a long time period and a possible change of systems. This persistent identifier (one example being the DOI number) should be given when citing the source. Examples are given below (in this case, a dissertation of the University of Tübingen which was published by the university's online publication service TOBIAS-lib).

Dynamic internet pages must be cited giving the date of access (see below for an example). Be aware that problems may arise from a lack of reliability or permanence of access to these sources, so an alternative source should be used wherever possible.

Under certain circumstances it may be appropriate to cite "personal communications" (see 2.3.4).

Sample citations:

Journals:

Burns DL (2003) Type IV transporters of pathogenic bacteria. *Curr Opin Microbiol* 6: 29-34.

El Tahir Y and Skurnik M (2001) YadA, the multifaceted *Yersinia* adhesin. *Int J Med Microbiol* 291: 209-218.

Odenbreit S, Puls J, Sedlmeier B, Gerland E, Fischer W and Haas R (2000) Translocation of *Helicobacter pylori* CagA into gastric epithelial cells by type IV secretion. *Science* 287: 1497-1500.

Books:

When citing books, provide the following information: author(s), year of publication, book chapter, first and last pages of the cited chapter, name(s) of the editor(s), title of the book, publisher and year of publication.

Habilitation treatises:

Doe J (1988) Title. Medical *Habilitation* treatise, Universität Tübingen

Dissertations:

Doe J (1988) Title. Medical Doctoral Dissertation, Universität Tübingen

Online publications:

a) Documents with persistent identifier (e.g. DOI, URN, etc):

As per the international standard ISO 690-2, digital publications should be cited as follows:

Willer, Holger: Die Auswirkungen der Reform des § 4 KSchG und der Kostenrechtsnovelle auf den arbeitsgerichtlichen Bestandsschutzprozess [online]. - Tübingen, Univ., Diss., 2009

URL: <http://tobias-lib.ub.uni-tuebingen.de/volltexte/2009/4293/>

URN: urn:nbn:de:bsz:21-opus-42933.

[Access date November 14, 2009]

Under "access date" please note the last date on which the dissertation author called up the source.

b) Dynamic internet pages:

<http://www.muster.html> [access date November 14, 2009]

Unpublished findings of other persons or personal communications:

Unpublished findings of other persons and personal communications may be cited in the dissertation if the originator consents to their use. They are referred to in the body of the text but not listed in the bibliography. In-text citations are formatted as follows:

(M. Meier, personal communication)

(M. Meier, A. Müller, personal communication)

Unpublished findings of the author:

The author's own findings which have already been accepted for publication may be cited as follows:

Schmitt A, Müller A, Meier M (2009) Title. Journal (accepted for publication)

You may not cite works "in print" without also giving the journal or publisher.

Works "in preparation" and information from submitted manuscripts may be referred to in the text as unpublished results (see above, with the consent of the author or authors), but are not listed in the bibliography.

2.5 Declaration of Contributions

This declaration provides a detailed explanation of the doctoral candidate's own intellectual contribution to the work. Your own individual contribution must be clear, and you must also explain what contributions were made by others, stating the names of the contributors. This is particularly important where the dissertation contains parts of one or more multi-author publications as defined in § 6 (2) of the *Promotionsordnung*. It also applies particularly to large studies (for example clinical trials) in the course of which multiple doctoral dissertations are written on similar aspects of a problem. In such a case, the contribution of each individual doctoral candidate should be clearly distinguished from that of the others.

2.5.1 How do I write a Declaration of Contributions?

In the Declaration of Contribution the names of the doctoral candidate and all co-authors must be given, and it must be clear what contributions were made by the doctoral candidate and by the individual co-authors. You can download suggestions for how to word such a declaration from the website of the Office of Doctoral Affairs. Depending on the type of dissertation topic, the following points should be covered, as appropriate:

- Who designed the study?
- Who carried out which experiments or statistical analyses?
- Who generated or gathered the data?
- Who provided data?
- Who supervised the work?

- Who wrote the publication?

If multiple publications are incorporated in the dissertation, the above points must be addressed separately for each publication.

Example for the wording of a Declaration of Contributions:

a) Breakdown by figures:

Ms. Maier carried out the experiments summarized in Figures 1, 2a, 3, 4a, 4b and 5. She was involved in the design of the study and wrote the manuscript independently.

Dr. Müller provided the data for Figure 2b.

Dr. Schmidt carried out the experiments shown in Figure 4c and 4d.

Professor Schneider contributed to the study design, supervised the work and corrected the manuscript.

b) Breakdown by type of experiment:

Ms. Maier carried out the cell isolation, cell culture experiments (ELISA, immunofluorescence, etc.), and histology. Dr. Müller provided patient data. Dr. Schmidt carried out the immunization of the mice used in the experiments. Professor Schneider was involved in the design of the study. He also supervised the work and corrected the manuscript.

2.5.2 Where is the Declaration of Contributions submitted?

The Declaration of Contributions is a component of the dissertation, so it must be included as a chapter of the dissertation. It must be signed and dated by the doctoral candidate. As a rule it is inserted at the end of the work between the bibliography and the acknowledgements.

If the dissertation is submitted in the form of a cumulative dissertation or if it presents the data of other persons, a declaration from all co-authors must also be submitted to the Office of Doctoral Affairs in which the co-authors express their consent to the use of the publication or data in the dissertation and confirm the accuracy of the information given in the Declaration of Contributions. This confirmation can be provided by making extra printouts of the Declaration of Contributions and having the co-authors sign, insofar as they are available for signatures. These signed copies of the Declaration are turned in to the Office of Doctoral Affairs and are not a component of the dissertation.

Appendix 1

Title of the dissertation

Arial 16, single-spaced

**Dissertation
submitted for a doctoral degree in
human sciences**

Arial 14, single-spaced

**Dissertation
submitted for a doctoral degree in
medicine *or* dentistry**

**at the
Faculty of Medicine
of the Eberhard Karls Universität
Tübingen**

submitted by

Last name, First name

Please include all given names
and maiden name, where
applicable.

Year of degree

Appendix 2

[example for page 2]

Dean: Professor Dr. I. B. Autenrieth

First reviewer: Privatdozent Dr. N. Name

Second reviewer: Professor Dr. N. Name

Date of oral examination: DD.MM.YYYY

Keeping a Laboratory Notebook – Recommendations

A well-kept laboratory notebook and storage of primary data are important elements of good scientific practice (see the DFG's white paper "Safeguarding Good Scientific Practice", 2013) and are **mandatory for all research**, whether it be in the form of experimental studies, clinical trials or theoretical work. They allow other researchers to reproduce your results and, if kept properly, can serve as a valid legal record to establish intellectual property or to document when a discovery was made in case there are ever conflicts over patents or copyright issues. Laboratory notebooks in the corporate design of the university are available from the central Weilheim warehouse of the University Hospital Tübingen using the order number 60200814.

How to keep a laboratory notebook

- You must use a **bound notebook with prenumbered pages**.
- Entries must be made **in chronological order**.
- Use **ball point pens or permanent ink** – never pencils! Data analyses and original data may be pasted into the notebook. Printouts on thermal paper should first be copied onto permanent paper to avoid rapid fading.
- **You may not remove pages from the notebook**. If you have made a mistake in calculation or need to make corrections, please put a thin line through the passage in question so the original entry remains legible, and note when and where corrections were made. Or simply make a new (chronological) entry which is cross-referenced back to the original entry.
- Always record your entries **immediately during and after an experiment** in order to avoid errors in documentation.
- Each laboratory notebook is kept **by a single person in legible handwriting**. This person is responsible for the orderly upkeep of the notebook. If more than one person is involved in an experiment, make cross-references to the laboratory notebook(s) of the other involved person(s).

What to enter in your laboratory notebook – the minimum

- Your name, address and laboratory
- Table of contents
- Date and project title
- Designation of the experiment (for example a short title with code number of the experiment), your working hypothesis, and the appropriate cross-references when experiments are repeated
- The equipment used (type, device number, etc.)
- Materials used (samples, reagents, controls), including type, origin, batch numbers (where applicable) and storage details
- If patient samples are used in experiments or patient data is entered in the laboratory notebook, you may only record pseudonymized data (patient number, sample number), nothing that can be directly linked to an individual. The project leader or principal investigator is responsible for keeping the key with which data or samples can be traced back to individuals.
- Exact descriptions of experimental set-ups and procedures, with measurement protocols (lab protocols with exact quantities, processing times, etc., sketches or photographs of experimental set-ups)
- Original (raw) data from the samples and controls (e.g. gel images, data curves or a detailed description of where the raw data have been stored; see below).

- Calculated data (including calculation and statistical methods and the software used, where applicable)
- Comments and conclusions about your results

Your documentation must record all the relevant information, and it should be so detailed and accurate that another person can reproduce your results.

You may supplement your laboratory notebook with additional storage for original data (such as notebooks or digital media) if the quantity or format of the data so require (for example, video recordings, DNA sequences, etc.). In the laboratory notebook, you must then describe exactly where the original data can be found and write up summaries and conclusions from the results.

Documentation in the laboratory notebook should be made regularly, particularly where there are potentially patentable results, and entries should be dated and signed by the experimenter and by a second person (a trustworthy person acting as an independent witness, not a co-experimenter), who confirms that he or she has seen and understood the entries.

Where is the laboratory notebook kept?

Laboratory notebooks (protocols), including any additional primary data storage, should not be accessible to the public and belong to the institution in which the work was carried out. The institution is responsible for archiving the protocols and data for a period of at least ten years (cf. DFG rule 7 for “Safeguarding Good Scientific Practice”).

As long as the researcher belongs to the department, the laboratory notebooks may be kept at the experimenter’s work place. When the experimenter leaves the institution, all notebooks and data must be turned over to the supervisor. Copies of the laboratory notebook may be made by the author of the notebook for his or her personal use.

Can I use an electronic laboratory notebook?

Electronic laboratory notebooks (sometimes known as ELNs) are now available which may be used in place of conventional paper laboratory notebooks. Before you use an ELN, however, you must make sure that the system produces secure data records which are admissible as evidence. We strongly recommend choosing your software carefully and taking a close look at its functionality and ease of use. It is vital that you confer with your supervisor about your choice of system to make sure that it is acceptable to him or her. The same standards and rules with respect to your obligation to record data and the manner in which you do so apply to electronic laboratory notebooks as they do to paper-based lab notebooks.