Lifeline

for Doctoral Students of the Life Sciences at the Justus Liebig University

GGL

International Giessen Graduate Centre for the Life Sciences

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JUSTUS-LIEBIG-
UNIVERSITÄT
GIESSEN

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für Bildung
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IMPRINT

LIFELINE FOR DOCTORAL STUDENTS OF THE
LIFE SCIENCES AT THE JUSTUS LIEBIG UNIVERSITY

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Dear Doctoral Candidates,

On behalf of the Justus Liebig University Giessen and the International Giessen Graduate Centre for the Life Sciences, I am most honoured to welcome you into our programme and our community.

I would like to extend my gratitude for your choice to pursue your doctorate at the Justus Liebig University Giessen as a member of the Giessen Graduate Centre for the Life Sciences. Making the decision for a doctorate in the life sciences is by no means a simple task, and I sincerely hope that you will take advantage of all of the opportunities which await you in the coming months and years.

As a member of the GGL, you will be joining a highly international community comprised of members from over 36 nations established at one of the oldest universities in Germany with a history dating back over 400 years. Working together within our interconnected network of research sections, we strive for the interdisciplinary and multiculturalism that is necessary for researchers today. During your time with us, you will not only increase your scientific knowledge and develop your professional skills, but also gain even more insights into other cultures and facets of life.

Finally, I hope that you will read the GGL guidebook early in your doctoral studies and familiarise yourself with all of the important aspects of being a doctoral candidate. If at any time, you have questions or concerns, the GGL team in addition to your supervisors and university staff members will be at your side at every step. Moreover, the new contacts and friends you will make along the way will help you become an integrated member in the professional and social network of our graduate centre, making you feel at home in our GGL family of life scientists.

I wish you all the best for your start as well as your further career development and doctorate within the GGL. Welcome to our community, and please do not hesitate to contact us if you still have some unanswered questions.

Sincerely,

Prof. Dr. med. Eveline Baumgart-Vogt


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1 ABOUT THIS GUIDEBOOK

This guidebook was compiled as a helpful companion throughout your doctoral thesis. It explains all stages and gives recommendations for your doctoral work and life and should be helpful for **all doctoral students of the life sciences**. Staff and students of the Giessen Graduate Centre for the Life Sciences worked together to develop this guidebook. Since most life science publications are in English, this is the language of the entire GGL programme. With almost 50 % of our doctoral students originating from countries outside Germany, we wanted to include all of the important facts for our international members settling down in Giessen, and also provide other pertinent information for German doctoral researchers. Of course, some of the information presented might be general knowledge for Germans, so if something does not apply to you, just skip the chapter. There is still a lot to discover, since most German students do not come from Giessen or the surrounding communities.

We hope that you will think of additional information or even whole chapters that should be added. If you do, just let us know for the next version of this book. Your constructive criticism is greatly appreciated! Rules and guidelines change on a daily basis, new staff is employed, and new handbooks are issued. Therefore, some of the information in this guidebook might become out of date rather quickly. Due to these reasons, we cannot take any responsibility for information that is no longer current. In order to conserve space, many of the links in this guidebook were shortened with bit.ly, tinyurl or is.gd. Please feel free to inform us if any of the links are no longer current, so we can change them for the next edition.


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2 BECOMING A DOCTORAL CANDIDATE AT THE JUSTUS LIEBIG UNIVERSITY GIESSEN

In general, the entire process of pursuing a doctorate is long and has some hurdles along the way. In the following chapter you will find detailed information about the bureaucratic and practical steps involved in starting a doctoral project in Giessen. You may use this chapter as a checklist to make sure that you have taken care of all of the important steps, beginning with making the decision to pursue a doctorate all the way to moving to Giessen and getting settled in.

2.1 DECIDING TO PURSUE A DOCTORATE

A doctorate in the life sciences is a highly demanding project that takes place over a period of three to five years. To be an effective researcher, you will need to set realistic objectives and stay focused on them while managing the timeframe, resources, priorities, milestones, expectations and results of your project. A doctoral thesis with the GGL at the JLU should train you to conduct research work independently; manage and organise your research; and to produce reliable, scientifically correct, publishable results.

Before you begin, you should ask yourself the questions: *"Am I sure I want to devote my life to this?"* and *"Why do I want to do that?"*. Here are some reasons for and against that decision.

2.1.1 Pros

There are a variety of reasons why people start a doctorate. Not all of them might be completely reasonable or universal, but people usually have more than one. Check the list of typical reasons below to see which ones you share and whether they are strong enough to keep you motivated for years and give you enough stamina to withstand the difficult phases.

- You just enjoy research!
- You have strong interest in research, for example the desire to continue the work you started with your master's thesis.
- You are driven by the ideal of adding a piece to the grand mosaic of human knowledge, to find a cure for a disease or other achievements.
- You are good at experimental lab work.
- You want to start an academic career and become a professor, and having a doctorate is a prerequisite.
- You like the better earning potential.
- You want to become a leader in academia, industry or politics.
- You want to improve your career options. In some branches, a doctorate is a prerequisite for getting employed at all.
- Your professor offered you a position.
- You don't know what else to do.
- You just like the title.
- You want to please your parents.

If the last three are your **only** reasons, you should consider other options.

2.1.2 Cons 👎

On the other hand, there might be good reasons for you to decide against it. The most obvious are:

- Over-qualification for some jobs
- Higher age when entering your first job
- Possible estrangement from friends and family, because of a different educational background or neglect, as you have little spare time
- Long working hours and the need for self-motivation and self-organisation
- Moderate pay (see chapter 2.4)
- Dependence on the goodwill of supervisor/s (see chapter 8.1)
- Perspective of having to take more and more managerial responsibilities and leaving the lab bench to others

2.1.3 Attitudes and skills of a doctoral student

Check and see if the following list more or less applies to you. If you are confident that you fulfil most of them, you are well prepared to start your doctorate.

- Keen interest in science
- Curiosity
- Endurance
- Inventiveness
- Strategic thinking
- Self-motivation
- Industriousness
- Team spirit
- Organisational talent
- Ability to work thoroughly, reliably and independently
- Writing skills
- Basic knowledge of methodology
- Language skills (reading and speaking)

2.1.4 Traditional doctoral studies versus structured programmes

You have two options for pursuing your doctorate in Germany: structured doctoral education or traditional apprenticeship-type doctoral study. In Germany, you traditionally have to find a professor who is willing to act as your supervisor. Your research work then follows a master-apprentice model. For most of your work, you will depend mainly on your supervisor and possibly members of his or her team, such as postdocs and lab assistants. The majority of doctoral students still follow this model.

Driven by the important funding agencies in Germany and Europe, structured doctoral programmes have emerged within the last 15 years, starting out from small research training groups and growing into graduate schools or centres. Currently, there are about 600 publicly funded doctoral programmes in Germany. More than 10 % of doctoral students in Germany participate in structured programmes, and the number is increasing every year.

TYPICAL FEATURES OF STRUCTURED GRADUATE PROGRAMMES ARE:

- Competitive recruiting procedures
- Intensive supervision with several supervisors on a thesis advisory committee and often a formalized supervision agreement
- Educational programme (curriculum) with a set of obligatory and optional training offers
- Regular progress assessments and reports
- Support for scientific exchange

Structured programmes provide a fixed framework of tasks and durations due to their format and timeline. They relieve the dependence on only one supervisor while providing an international and interdisciplinary environment with plenty of chances for networking within the frame of a scientific and professional education. Almost all JLU students in excellent research structures, such as DFG *(Deutsche Forschungsgemeinschaft / German Research Foundation)* or state-funded collaborative research groups or centres, are integrated into the scientific and personal development network of the GGL during the course of their doctorate. On the downside, there might be time management issues, an elitist attitude of some structured programmes, and/or limited funding periods for many of the smaller training groups.

At the JLU, several DFG-funded structured **doctoral research training groups *("Graduiertenkollegs")*** currently exist within the scope of the life sciences.

1) IRTG 1384 **"*Enzymes and Multienzyme Complexes acting on Nucleic Acids*"** is a joint operation of the JLU together with the PU Marburg, Russian Academy of Science, M. V. Lomonosov, Moscow State University, the Institute of Biotechnology in Vilnius and the International Institute of Molecular Cell Biology (Warsaw). Speaker: Prof. Dr. Peter Friedhoff (Institute of Biochemistry, Faculty 08, JLU). ▸ http://is.gd/irtg1384
2) IRTG **"*Molecular Pathogenesis of Male Reproductive Disorders*"** (together with Monash University, Melbourne, Australia) is coordinated by Prof. Dr. Andreas Meinhardt (Department of Anatomy and Cell Biology, Faculty 11, JLU) and Prof. Dr. Kate Loveland (Centre for Reproduction and Development, Monash Institute of Medical Research). ▸ http://is.gd/Malereproduction
3) IRTG **"*The Brain in Action*"** *(DFG-1901)* works together with the Philipps University Marburg as well as three Canadian Universities (York University / Toronto), Queen's University / Kingston, Western University / London). Speakers: Prof. Dr. Frank Bremmer (Department of Neurophysics, Faculty 13, PUM) and Prof. Dr. Katja Fiehler (General Psychology, Team Action and Perception, Faculty 06, JLU). ▸ http://is.gd/Braininaction
4) Some doctoral candidates from the JLU are also part of the **"International Max-Planck-Research-School for Heart and Lung Research"**. Speaker: Prof. Dr. Dr. Thomas Braun (Faculty 11, JLU). ▸ http://www.imprs-hlr.mpg.de

The GGL connects research training groups and provides a structured doctoral education for candidates whose specialties lie outside these defined research topics by integrating them into the research sections. Through the GGL, the scientific programmes of each training group are open to all GGL members, and doctoral candidates have access to the whole GGL programme (chapter 7) as long as they elect to become GGL members.

2.2 EDUCATIONAL REQUIREMENTS FOR DOCTORAL STUDIES

The most important formal qualification for beginning a doctorate is a degree from an institute of higher education recognised in Germany. For a doctorate, you usually need a master's degree, diploma or equivalent. Each faculty is responsible for the admission of doctoral students and the accreditation of qualifications. Unlike in other countries, it is very rare to start a doctoral thesis after your bachelor degree in Germany. In the life sciences in Giessen today, fast-track options for very good bachelor

students are only possible in chemistry and psychology. However, this will probably change in the near future.

Beside your academic qualifications, you also need very good language skills. To study in the GGL, you must be proficient in English, since it is the language in which all educational seminars and workshops are conducted. In other programmes and in certain teams at the JLU, German might be sufficient.

2.3 FINDING A SUPERVISOR

The first real step is to contact an academic supervisor in your field of study. Many supervisors and structured programmes wishing to recruit doctoral candidates advertise open projects in periodicals and online media. Here are a few of them:

- http://www.nature.com/naturejobs/science/welcome
- http://listserv.uni-heidelberg.de/science-jobs-de
- http://www.drarbeit.de
- http://scjobs.sciencemag.org
- http://www.jobvector.de
- https://www.daad.de/deutschland/promotion/de

A STANDARD APPLICATION PORTFOLIO FOR A DOCTORAL DEGREE TYPICALLY CONTAINS:

1) A **Letter of Intent**, in which you describe your academic aptitude, your academic and professional interest, your interest in the specific project that you have chosen or your own project suggestion
2) A **Curriculum Vitae** (CV) including your educational background as well as language and IT skills. You should put specific emphasis on your lab skills and possible publications.
3) A recent **Photograph** (no holiday or webcam shots)
4) Copies of all **Certificates and relevant Degrees** mentioned in the CV in English or German. If your documents are in another language, you will have to submit certified translations.
5) For the bachelor's and master's degree (or equivalent), the official **Degree Certificate** of your university/school and the **Transcript of Records** should be provided
6) Proof of **Proficiency in English**, i.e. TOEFL 83 or IELTS 6.5
7) If possible, **signed Letters of Recommendation**

You can also approach perspective supervisors without having read about them in an advertisement, however, in that case you should have (in addition to a perfectly prepared application portfolio) thorough knowledge of his or her research and publications and a related project idea. If you contact a prospective supervisor via e-mail, you should spend some time composing a personal, yet polite, message that shows that you acquired background knowledge concerning this person's work.

If this contact elicits interest, be prepared to attend one or more interviews. If you are applying from abroad, you might be asked to perform interviews over the phone or online. Make sure that you secure the facilities to perform these interviews in an appropriate, quiet setting. At some point you might also need to inquire whether a decision has been made, but make sure that you do not become too insistent.

After a potential supervisor has agreed to supervise you, he or she needs to provide you with a signed Consent of Supervision ("*Betreuungszusage*"). With this in-

formal statement, the professor agrees to supervise your dissertation. This letter of consent is quite important for obtaining a visa, enrolling and admission to your faculty and the GGL.

This letter should also contain some information on financial arrangements, i.e. whether you have been offered a position or a stipend/fellowship or need to apply for funding yourself (see chapter 2.4).

2.4 FINANCING YOUR DOCTORATE

One of the major factors that may influence your decision of whether or not to pursue a doctorate is the question of who is going to pay for it. This section details some of the options you have for getting your funds in order and paying your way through your programme.

2.4.1 Expenses

According to a survey by the Student Services ("*Studentenwerk*"), a student in Germany spends an average of € 680 a month on rent, food, clothing, leisure activities, etc. Once you have enrolled at the university, your expenditure list will also include the semester fees that have to be paid when you re-register every six months. No fees are charged for doctoral programmes at public universities and colleges in Germany.

Additionally, you will need money for insurances (at least health insurance which is mandatory in Germany), your personal work materials and travelling.

2.4.2 Doctoral positions

Positions for doctoral students in the life sciences are usually half of the tax bracket E 13 (formerly BAT IIa) which may earn up to a net income of € 1 300 before taxes. If you were able to secure such a position, you become an employee of the university which also entails some rights and duties, such as the number of holidays and procedures when you are ill. Also, taxes are automatically deduced from your income, and you need to have an income tax card ("*Lohnsteuerkarte*") (or the digital version after 2012) and will need to complete tax declarations after the end of each fiscal year.

> **NOTE**
> Due to some bureaucratic complications, you must enrol as a doctoral student (if you wish to do so) **before** signing your contract.

2.4.3 Scholarships

A scholarship for doctoral students usually includes a monthly stipend of € 1 000 to € 1 200 (with a bonus of around € 100 to € 150 for material costs). The largest provider of scholarships, especially for international doctoral students, is the German Academic Exchange Service (DAAD). In 2008 alone, the DAAD supported more than 2 500 international doctoral students with scholarships in Germany[1]. See:

▸ http://is.gd/DAADScholarships

[1] Cf. www.research-in-germany.de (direct link: http://is.gd/FinanceYourPhd); www.research-jobs-in-Germany.de (direct link: http://is.gd/ScholarshipsDAAD)

In addition, there is a wide variety of foundations available for doctoral students. Among others, the major political parties and churches in Germany have their own funding bodies:

- **Friedrich-Ebert-Stiftung** (SPD)
  - http://bit.ly/fesspdEN
- **Konrad-Adenauer-Stiftung** (CDU)
  - http://www.kas.de/wf/en/42.8
- **Heinrich-Böll-Stiftung** (Green Party)
  - http://is.gd/HBoell
- **Friedrich-Naumann-Stiftung** (FDP)
  - http://is.gd/FNaumann
- **Hanns-Seidel-Stiftung** (CSU)
  - http://www.hss.de/english.html
- **Hans-Böckler-Stiftung** (German Trade Union Confederation)
  - http://www.boeckler.de/20.htm
- **Cusanuswerk** (Catholic Church)
  - http://www.cusanuswerk.de/foerderung/stipendien
- **Evangelisches Studienwerk e.V. Villigst** (Protestant Church)
  - http://www.evstudienwerk.de/english.html
- **Studienstiftung des deutschen Volkes**
  - http://www.studienstiftung.de/promotion.html
- **Stiftung der Deutschen Wirtschaft**
  - http://www.sdw.org/english/welcome
- **Stifterverband für die Deutsche Wissenschaft e.V.**
  - http://www.stifterverband.de
- **FAZIT-Stiftung** (Frankfurter Allgemeine Zeitung)
  - http://www.fazit-stiftung.de/bewerbung.html
- **Evonik Stiftung**
  - http://is.gd/Evonik
- **Studienförderwerk Klaus Murmann**
  - http://is.gd/SDWKMurmann

In special cases, these stipends may also be obtained by international students. Additional support can be found, for example, for doctoral students with children. Female scientists with children can receive € 200 to € 400 for childcare from the Christiane Nüsslein-Volhard-Stiftung (▸ http://is.gd/CNVStiftung). See more at:

- http://www.owwz.de/funding-programmes.html?&L=2
- http://is.gd/KoWiEU
- http://www.stiftungen.org/en

Some of the above mentioned funding bodies also grant follow-up financing ("*Abschlussfinanzierung*") if you run out of money after three years without having finished your thesis. The last months/years are often tricky to cover. Your supervisor might find the means, but sometimes you are on your own. When applying for funding, make sure that at least three years will be covered or that there is an option for an extension. The average duration of a doctoral programme is three to four years, and grants for finishing a thesis are very rare.

If your supervisor cooperates with an industrial partner, they might also be a good source of funding for your doctorate. Getting in contact with companies can also be quite advantageous for your career – this kind of financing is, however, rather rare.

2.4.4 Private funding

If you are considering funding your doctoral thesis privately, you must be aware that you will need about € 12 000 *per year* for at least three years for living expenses alone. We do **not** recommend this as most supervisors hesitate to take doctoral candidates who wish to pay for everything with private funds due to complications that could arise.


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3 ESSENTIAL STEPS BEFORE YOU START YOUR DOCTORATE

3.1 VISA

To enter the Federal Republic of Germany, you need a **valid and "correct" visa**. Citizens of the European Union, the United States of America and a few other countries are exempt from this regulation. As a rule, applicants must submit visa applications and all other required documents in person at the German embassy or consulate responsible for their place of residence.

In order to avoid demands for additional information or documents, applicants should check the respective embassy or consulate's website well in advance of their departure date to find out about the visa procedure and required documents.

Since visa procedures may change frequently, also always check with the JLU International Office (see chapter 6.3.2) for possible updates after publication of this book.

Visa application forms can be obtained from the embassy or consulate free of charge (in the local language).

> **NOTE**
> You must apply for your visa outside of Germany, since visas are never issued in Germany (only extended).

Visas are generally linked to a specific purpose of stay in Germany (i.e. tourist, student, business, etc.). The type of visa is dependent on your reasons for coming to Germany and you must report the same purpose of stay for your residence permit. The only difference between a visa and a residence permit is that the visa is issued outside of Germany and used for entry into the country.

Please clarify before you enter Germany whether you require a **student visa** ("*Studentenvisum*") or a **research visa** ("*Wissenschaftlervisum*"). To obtain a student visa, you must submit confirmation of admission from the JLU and proof of sufficient funds. For a research visa, you must submit a letter of consent from your supervisor and proof of sufficient funds or, if applicable, a letter from a university department in Giessen confirming that you have been offered a position ("*Mitarbeiterstelle*").

If you are still waiting for your notification of acceptance ("Zulassungsbescheid") after your application to a German university or institution of higher education, you may apply for a **visa for university applicants** (valid for 90 days, convertible into a student visa). When applying for your visa, be sure to bring your confirmation of application ("Bewerbungsbescheinigung") with you. You will need it to prove, you have actually applied to the university and intend to study during your stay in Germany.

Once you have entered Germany, you may apply for a residence permit for the same purpose as your visa. Your purpose of stay cannot change once you arrive in Germany. For example, you may not arrive on a student visa and apply for a residence permit to work. To alter your residency status, you will most likely have to leave Germany and reapply for a different kind of visa.

NATIONALITIES THAT DO NOT NEED A VISA FOR ANY PURPOSE:

EU citizens and those of Iceland, Norway and Liechtenstein. After three months in Germany, you are required to get a residence permit.

Nationalities that do not need a visa for stays up to three months:

Citizens of the United States of America, Australia, Canada, Israel, Japan, New Zealand and Switzerland may apply for a residence permit after entering Germany. If you are not sure if you need a visa, check this list: ▸ http://bit.ly/visacheck

Schengen Visa

Germany is a signatory to the Schengen Agreement which enables free mobility of residents within all of the participating countries. A visa granted by any Schengen country is valid for the entire Schengen area. Travelling within the Schengen area is legally the same as travelling within Germany. If you enter Germany on a Schengen visa, you will be able to stay in Germany and/or any other country in the Schengen area for up to 90 days during a 6-month period[2].

There are 25 European countries that have entered into the Schengen Agreement to make travelling in Europe easier (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, and Switzerland). For more information, see:
▸ http://www.schengenvisa.cc

Visa application

For the application, you will need some or all of the following documents (contact your local embassy/consulate for exact requirements):

- Passport valid at least three months after the end of the requested visa period, with a blank page available for the visa
- Application form/s (number dependent on nationality of applicant)
- 2 passport photographs
- Proof of adequate means of financial support during stay, e.g. scholarship confirmation. Currently, anyone applying for a visa to study in Germany must be able to prove to have access to a minimum of roughly € 680 per month respectively € 8 160 a year. As a rule, this sum is not sufficient to cover all the costs of living in Germany (see chapter 2.4.1).
- Proof of health insurance (the immigration authorities only accept insurance plans that also cover pregnancy, dental prostheses and psychotherapy with no cost-limit. The insurance plan has to be available in German[3]. See chapter 4.8)
- Proof of purpose of visit

Applications should be submitted at least six weeks before the planned departure date. If you apply for a visa outside your home country, your application will be referred to the German embassy there and may take longer to be issued. It is recommended to apply for your visa 2 – 3 month **before** your entry.

Extending your visa

You should keep in mind that your visa/residence permit does not automatically cover your whole time in Germany, but will expire at a given date and will need to

[2] Cf. www.justlanded.com (direct link: http://is.gd/VisaForGermany)
[3] Cf. www.research-in-germany.de (direct link: http://is.gd/FinanceYourPhd)

be extended. The extension has to be made at your local **Office for Alien Affairs** (see chapter 3.6). Typically, you have to provide a current enrolment certificate and proof of sufficient funding to the immigration authorities each year[4].

If you have any trouble with your visa, please do not ignore it or try to sit it out. It will not work and might end with you being forced to leave the country. Please visit the International Office (▸ http://is.gd/DoctoralStudiesJLU) for confidential counselling as soon as possible. More information on visas for Germany can be found at: ▸ http://is.gd/FederalForeignOffice (Ministry of Foreign Affairs)

3.2 Finding a place to live

For new students in Giessen, the easiest way to find accommodations is applying for a room in one of the university's student residence halls (see below). To rent a private apartment or join a flat-sharing community ("*Wohngemeinschaft – WG"*), you will have to check the advertisements in the local newspapers (print and online), read notice-boards around campus or assign an agent.

The handbook "*Finding Accommodation – A guide for International Students in Giessen & Friedberg"* provides detailed information making your search easier. ▸ http://is.gd/THMGuide

After you have found accommodations, you will sign a lease ("*Mietvertrag*"). Within a week, you have to report your address to the local Residence Registration Office ("*Einwohnermeldeamt"*), see chapter 3.3.

It is customary in Germany to pay a deposit ("*Kaution"*) of one to three months' rent (legally allowed maximum) which you will get back after moving out (if you did not damage anything). You will have to calculate your expenses with this additional amount at the beginning. By law you are allowed to pay the "*Kaution*" in up to three instalments. For details see:
▸ http://www.mieterbund.de/928.html, only available in German

Where to look for advertisements:

- ✔ Express online (▸ http://www.marbuch-verlag.de/okaz
- ✔ Giessener Anzeiger (▸ http://immobilien.giessener-anzeiger.de
- ✔ Giessener Allgemeine (▸ http://is.gd/GAImmobilien
- ✔ Mittelhessische Anzeigen Zeitung MAZ (▸ http://maz-verlag.de; no online ads)
- http://www.immonet.de
- http://www.immowelt.de
- http://www.immobilienscout24.de
- http://www.wohnenmietenkaufen.de
- http://giessen.studenten-wohnung.de
- http://www.wg-gesucht.de

[4] Cf. www.justlanded.com (direct link: http://is.gd/VisaForGermany)

STUDENT RESIDENCE HALLS *(STUDENTENWOHNHEIME)*

Having enrolled at the university (see chapter 3.7), you can apply for a room in one of the student residence halls (▸ *http://bit.ly/GiStudLiv*). If you are coming to Giessen from abroad, you might want to ask your future supervisor to apply for you in advance to make sure that you have a place to stay when you arrive.

PROCEED AS FOLLOWS:

- Fill in and sign the "*Wohnheimantrag*" (housing application form: ▸ GERMAN: *http://bit.ly/GiWHA*, *ENGLISH: http://is.gd/AppAd*) and submit it with the certificate of enrolment.
- Receive confirmation/contract.
- Pay the deposit and the first rent to the Studentenwerk in cash if you do not have a bank account yet (see chapter 3.4).

NOTE
It is more difficult to get lodging in the student residence hall in October and April at the beginning of semesters.

JLU STUDENT RESIDENCE HALLS *(with contact persons)*:

Wohnheim Unterhof ◆ Wohnheim Leihgesterner Weg 140 ◆ Wohnheim Gaffkystraße
Ms Readinger
☎ 0641 / 40008 302
Fax: 0641 / 40008 309
✉ ludmila.readinger@studwerk.uni-giessen.de

Wohnheim Eichendorffring ◆ Wohnheim Landgraf-Ludwig-Haus ◆ Wohnheim Otto-Eger-Heim
Ms Trittin
☎ 0641 / 40008 305
Fax: 0641 / 40008 309
✉ Ursula.Trittin@studwerk.uni-giessen.de

Wohnheim Ludwigstraße ◆ Wohnheim Grünberger Straße ◆ Wohnheim Leihgesterner Weg 124-134
Ms Kowalczyk
☎ 0641 / 40008 303
Fax: 0641 / 40008 309
✉ magdalena.kowalczyk@studwerk.uni-giessen.de

Uni-Gästehaus ◆ Gästehaus Strahlenzentrum ◆ Alexander-von-Humboldt-Haus ◆ Wilhelm-von-Humboldt-Haus
Ms Will
Rathenaustrasse 24
35394 Giessen
☎ 0641 / 99 12537
Fax: 0641 / 99 12539
✉ Ursula.Will@admin.uni-giessen.de

Studentenwohnheim HGW
N.N.
Watzenborner Weg 7
35394 Giessen
☎ + Fax: 0641 / 7 36 91
✉ info@studentenwohnheim-giessen.de

3.3 REGISTERING YOUR RESIDENCE

Within one week of finding permanent accommodations (i.e. not a hotel), you have to register your address at the local Residence Registration Office ("*Einwohnermeldeamt*").
Each subsequent change of address must also be registered with the relevant local authority. This rule applies to everyone, including German nationals.

To register, you need to present your passport and visa (if you have one), a copy of the lease or rental agreement and a completed registration form available at the "*Einwohnermeldeamt*". If there are no problems, you will be given a confirmation form ("*Anmeldebestätigung*") as proof of your registration. Make a copy (or several) of the *"Anmeldebestätigung"* as you will need it a lot during your first weeks in Germany[5]. This serves as proof of your address, and institutions like banks, libraries etc. will ask for it.

NOTE
You must **register** your residence before you can apply for a residence permit.

Residence Registration Office *(Einwohnermeldeamt)* Giessen/ "*Stadtbüro*" at the Town Hall
Berliner Platz 1
35390 Giessen
☎ 0641 / 306 123 4
Fax: 0641 / 306 226 6
Hours of Operation: Mon – Thu 8:00 – 18:00, Fri 8:00 – 12:00, Sat 10:00 – 13:00

3.4 BASIC BANKING – OPENING AN ACCOUNT

There are many banks (around 260) in Germany (including the savings banks "*Sparkasse*"). Banks are private institutions while "*Sparkassen*" are operated by local authorities which is shown in their names – Berliner Sparkasse, Hamburger Sparkasse, or Sparkasse Giessen. Before you choose a bank, you might want to consider the following aspects:

[5] Cf. *www.justlanded.com* (direct link: *http://is.gd/Residence*)

- A cash machine free of charge close to your home/lab
- An EC card available immediately
- A credit card available and if so, how long it will take to process
- None or little fees (some banks do not charge any fees for transactions)
- The sum of an overdraft protection facility and its fees
- Conditions for online banking and international money transfers

NOTE
Many banks have agreements with other banks which allow you to withdraw cash free of charge within the whole network, e.g. CashPool
http://www.cashpool.de

Opening a bank account is a rather straightforward process in Germany. Since you will probably need to show some proof of a German address besides your national identification, it is recommendable to register at the Residence Registration Office ("*Einwohnermeldeamt*") first (see chapter 3.3). You cannot open a bank account in Germany before your arrival, though, as you will have to make an appointment and go to the bank in person with your documents.

The most common form of account in Germany is a Girokonto (checking or open account). Most financial transactions are possible with this type of account, such as receiving wages or paying rent.

After opening a bank account, you will receive an EC (EuroCheque) card with a corresponding PIN (a secret 4-digit number). This card allows you to withdraw cash from the majority of cash machines in Germany and Europe. Withdrawals from your own bank or associated institutions are free, but cash machines from other institutions will charge you a fee (normally around 1 % within Germany, but up to 2.5 % in other countries)[6]. You can pay with your EC card in many shops and petrol stations in conjunction with your PIN or signature. If you opt in for internet banking, you will also receive a TAN sheet or generation device by mail separately from your PIN which you use to pay bills and transfer money online (for further information, see chapter 4.9).

3.5 HEALTH INSURANCE

Health insurance is mandatory for all employees and students, so you will not be able to start working or studying without it. Even when applying for your visa and residence permit, you will need to provide documentation of your health insurance.

Students from countries which have a social security agreement with Germany including an insurance clause may continue to be covered by their home insurance company while they are in Germany. For instance, if you are from the European Union and already possess an EU-Health-Chip-Card, you are sufficiently insured.

If you are a (university) employee (salary > € 450/month), you are automatically insured. Health insurance contributions are split 50-50 between employers and employees. If you have a scholarship, you still have to pay your health insurance yourself. In that case, you have two options: you can contract an insurance plan from a **public** ("*gesetzliche Krankenversicherung*") or **private health insurance** company ("*private Krankenversicherung*").

[6] Cf. www.justlanded.com (direct link: http://is.gd/MoneyCards)

The JLU International Office advises you to choose a public insurance company, since all of them are accepted by the immigration authorities. More advice on health public insurance including links for insurance advisory websites and details on some of the local health insurance offices provided by the International Office can be found here:

▸ http://bit.ly/IOinsure

If you are not enrolled or over 30 years of age, private health insurance can be less expensive, or you might only be eligible for a private insurance plan.

NOTE
The immigration authorities only accept insurance plans covering pregnancy, dental prostheses and psychotherapy with no cost-limit and the insurance plan must be available in German.

Once you have German health insurance, your insurance company will issue you a plastic insurance card which you need when you visit the doctor. This card contains a chip with your personal data which the doctor's secretary will screen on your first visit. A travel health insurance is recommended for your journey to Germany[7].

3.6 RESIDENCE PERMIT

Non-EU citizens will need the following documents for the Office for Alien Affairs ("*Ausländerbehörde"*):

- A biometric passport photograph
- Passport
- Application for a residence permit
- Certificate of enrolment ("*Immatrikulationsbescheinigung"*) and/or your supervisor's letter of consent with your thesis topic and an estimation of how long your study will take
- Lease ("*Mietvertrag"*)
- Proof of sufficient funds in form of a confirmation of a scholarship, a work contract, a blocked account ("*Sperrkonto*"), a savings account with sufficient funds or a "*Verpflichtungserklärung*" from a German citizen.
- Proof of sufficient health insurance (either the insurance card or the health insurance plan)

You can get the required forms at the International Office of JLU or online.

- Application for a residence permit: http://is.gd/IOapp
- Extension of a residence permit: http://bit.ly/IOappEXT

Prescheduled appointments are recommended. Be sure to arrive early (especially on Thursdays) because they only see a certain number of applicants each day.

Office for Alien Affairs *(Ausländerbehörde)* Giessen/ "*Stadtbüro"* at the Town Hall

Berliner Platz 1, 35390 Giessen
☎ 0641 / 306 0
✉ ordungsamt@giessen.de

Hours of Operation: Mon, Wed 8:00 – 12:00, Thu 14:00 – 17:00

[7] Cf. www.justlanded.com (direct link: http://is.gd/Doctors)

3.7 ENROLLING AT THE UNIVERSITY

Once you have your supervisor's letter of consent, you may enrol as a student of the Justus Liebig University Giessen, but you do not necessarily have to. Here are the pros and cons:

> **NOTE**
> In some postgraduate study programmes and for some stipends and fellowships, enrolment is mandatory.

PROS

Only when you are enrolled, you can …

- Obtain a student visa.
- Apply for a room in a student residence hall.
- Buy subsidized meals at the university's cafeterias ("*Mensa*") (with an employee card, it is still cheaper than for visitors).
- Use the "*Semesterticket*" for free public transportation in Hesse (see chapter 5.5).
- Get cheaper tickets for cinemas, theatres, museums etc.
- Make use of JLU's child care services for student parents (see chapter 6.3.6).

CONS

- You have to pay approx. € 270 per semester (+ € 15 deposit for the first semester, see below).

If you decide to enrol, you will have to submit the following documents:

FOR GERMAN DOCTORAL CANDIDATES:

- Application for admission, online (▸ http://bit.ly/AppGerman, in German only) or completed and signed form (▸ http://is.gd/AppAntragPDF) if the online application doesn't work

FOR INTERNATIONAL DOCTORAL CANDIDATES:

- A carefully completed and signed *Application for Admission to JLU as an International Doctoral Student* (▸ http://is.gd/AppInternational)
- Notarized copies (and translations when not in German or English) of your school-leaving certificate and your university degree (e.g. bachelor's degree and master's degree or diploma)
- Your Curriculum Vitae (CV)
- Your supervisor's letter of consent or, if applicable, the confirmation of acceptance to your doctoral programme or research training group

Please send these documents to the following address:

REGISTRAR'S OFFICE *(STUDIERENDENSEKRETARIAT)*
Ausländerzulassung (for non-Germans)
Goethestrasse 58
35390 Giessen
▸ http://bit.ly/AppJLUdp

Please do not confuse this applications with the *Application for the Admission as Doctoral Candidate / "Antrag für die Annahme als Doktorand/in"* at the Faculty, see chapter 3.10.

Once you have received the Confirmation of Admission, you can enrol as a doctoral student. In order to do so, you need to bring the following documents to the Registrar's Office ("*Studierendensekretariat"*):

- Confirmation of Admission
- Confirmation of Payment of Enrolment Fee
- Confirmation of Health Insurance
- Photograph

Student ID card

If you enrol as doctoral student, you will receive a student ID card with a chip and PIN (deposit € 15). This student ID card can be used for the following:

- Student ID with picture
- "*Semesterticket*" for free public transport in Hesse (see chapter 5.5)
- Library card
- Key for some of the university residence halls and other buildings
- Meal card for the university cafeterias
- Copy card for some university copy machines
- Electronic signature

How to obtain the ID card and how it is used is explained in the English brochure provided by the University IT Service Centre (HRZ): ▸ http://bit.ly/HRZsetup

At your convenience after confirming your enrolment each semester, you may have your student ID card updated at machines in the Registrar's Office ("*Studierendensekretariat*") and have the new "*Semesterticket*" printed onto your card. As soon as you are admitted as a doctoral candidate by your faculty, you must inform the Registrar's Office and, if you are an international student, also the International Office (see chapter 6.3.2). If you do not complete this step, you will not be able to receive documents confirming your status as a doctoral candidate, because you will still be registered as a non-degree-seeking student.

3.8 Admission as a doctoral candidate

Being admitted as a doctoral candidate is **not** the same as enrolling at the university, nor is it the same as admission to a graduate centre or programme (such as the GGL). The only body which has the authority to award you the status of doctoral candidate is your respective faculty ("*Fachbereich"*), and you are not considered a doctoral candidate until the doctoral committee ("*Promotionsausschuss"*) of your faculty decides to approve your application. Generally, you will apply to the faculty to which your first supervisor belongs. Your faculty alone is responsible for your admission, submission of your thesis, organising the defence of your thesis and awarding your doctorate. With your supervisor's support, you must submit your application known as "*Antrag auf Zulassung zur Promotion*" or "*Antrag für die Annahme als Doktorand/in*", and the doctoral committee will check your certificates in terms of authenticity, formal sufficiency and their equivalence to German degrees. Provide your supervisors with a copy of your application for your institutional records.

This step might come as a surprise to many because they have already enrolled as a non-degree-seeking student at the JLU and applied to a graduate centre or research training group. Your status as a doctoral candidate does not legally begin until your faculty has admitted you, so take care of this step as soon as possible.

3.9 DOCTORAL DEGREES

Before you apply for admission as a doctoral candidate, you might need to decide which type of doctoral degree, you wish to earn. Several internationally acknowledged doctoral degrees are issued by the five life science faculties of the JLU (see table). As a general rule, the faculty to which your supervisor belongs defines which doctoral title you can acquire but in some faculties, you may be able to choose yourself. Below, please find a list of the faculties and the titles, they issue. The *Dr. rer. nat.* may be awarded to doctoral students from other faculties than indicated below, but only if the research project complies with the standards defined in the rules and regulations for this title and if a first supervisor can be found who belongs to the faculties that award the *Dr. rer. nat*.

The Faculties of Medicine and Veterinary Medicine of the Justus Liebig University allow internationally-oriented young researchers to obtain the title "*Doctor of Philosophy*" (**PhD**). This title can be achieved in addition to other titles, given that additional thesis work is conducted over a three-year period and the accompanying course programme has been fully accomplished. Even if you have not studied medicine or veterinary medicine but rather another related natural science (e.g. biology or human biology), you may still conduct scientific thesis work under the supervision of a member of the Faculties of Veterinary Medicine or Medicine. You can apply to the **Ph.D. Programme only** if your supervisor is a member of the Faculties of Veterinary Medicine or Medicine (▸ *http://bit.ly/JLUphd*).

FACULTY (FACHBEREICH – FB)	DEGREES GRANTED	CONTACT
Psychology and Sports Science (FB 06)	Dr. rer. nat.	Ms Barbara Thörner, Ms Birgit Bernhardt Heinrich-Buff-Ring 58, 2nd floor, room: 271 ☎ 0641 / 99 24520 Pruefungsamt-NatWiss@admin.uni-giessen.de
Biology and Chemistry (FB 08)	Dr. rer. nat.	As above
Agricultural Sciences, Nutritional Sciences and Environmental Management (FB 09)	Dr. agr. Dr. oec. troph.	Ms Beate Ackermann Bismarckstr. 24 ☎ 0641 / 99 39012 Beate.Ackermann@admin.uni-giessen.de
Veterinary Medicine (FB 10)	Dr. med. vet. Dr. biol. anim.	Ms Mechthild Hähn Frankfurter Str. 94 ☎ 0641 / 99 38002 Promotionssekretariat@vetmed.uni-giessen.de
Medicine (FB 11)	Dr. med. Dr. med. dent. Dr. biol. hom.	Ms Nadine Schmidt Rudolf-Buchheim-Str. 6 ☎ 0641 / 99 48031 nadine.schmidt@dekanat.med.uni-giessen.de
Veterinary Medicine (FB 10) and **Medicine** (FB 11)	Ph.D. Admissions only for each winter semester!	Ms Nicole Havelka Rudolf-Buchheim-Str. 6 ☎ 0641 / 99 48032 phd@dekanat.med.uni-giessen.de

3.10 RULES AND REGULATIONS FOR DOCTORATES

Before you submit your application to become a doctoral candidate, check the doctoral rules and regulations ("*Promotionsordnung")* thoroughly to make sure you are eligible and to find out what documents you will need. The rules differ between faculties, so there is not a general set of rules for the whole university. For instance, in some faculties you have to have your project sanctioned by the board of examiners ("*Promotionsausschuss"*), and you must have grades above average to be admitted. Ask the responsible Examination Office ("*Prüfungsamt"*) or Dean's Office for the most recent version. Doctoral rules and regulations ("*Promotionsordnung"*) of the life science faculties in Giessen:

Faculty 06 – Psychology and Sport Sciences and
Faculty 08 – Biology and Chemistry
http://is.gd/ProFB0608
Faculty 09 – Agricultural Sciences, Nutritional Sciences, and Environmental Management
http://is.gd/ProFB09
Faculty 10 – Veterinary Medicine
http://is.gd/ProFB10
Faculty 11 – Medicine
http://is.gd/ProFB11

Not all regulations were available in German at time of printing but the International Office of the JLU has initiated a project to translate these legally binding documents into English. Using the link ▸ http://is.gd/DoctoralRegulations, you can find all current versions and possible translations that have been made available. If you cannot read the German version yourself, please ask your supervisor or lab team to explain it to you and watch for the new translations on the websites of the GGL or the International Office. However, the German version will be the legally binding version even if an English translation is available.

3.11 WHERE TO FIND ADVICE AS A FOREIGN DOCTORAL STUDENT

Upon enrolment, you can enter your e-mail address in the contact list for international doctoral students of the Justus Liebig University. The International Office will use this e-mail list to inform you on non-subject related services and support. Moreover, you will receive helpful information for studying and living in Giessen during the "*Info-Tisch*" hours (see chapter 6.3.2 for more information on the International Office).

International Student Advisory Office ***(Akademisches Auslandsamt)***

Counseling of International Doctoral Candidates
Ms Elisa Engert (Advisor for International PhD-Students)
Goethestr. 58, Room 21
35390 Giessen
Consultation hours: Mon and Wed 10:00 – 12:00 (or by appointment)
☎ 0641 / 99 12172
Fax: 0641 / 99 12179
✉ elisa.engert@admin.uni-giessen.de
✉ promotionsstudium-international@uni-giessen.de

The International Office also offers **German courses** (Goethestr. 58, Office Room 230). Please note that the consultation hours take place at Gutenbergstr. 6: Tue – Thu 9:00 – 13:00 and 14:00 – 17:00, Fri 9:00 – 13:00 and 14:00 – 16:00 (or by appointment)
☎ 0641 / 99 12148/5, during consultation hours: 0641 / 99 12188, Fax: 0641 / 99 12133
✉ auslandsamt-kurse@admin.uni-giessen.de

4 LIVING IN GERMANY

4.1 BASIC FACTS

With a population of over 80.5 million (2012) on about 350 000 km², Germany is the most densely populated country in Europe. Germany is a federal parliamentary republic comprised of sixteen states, and Giessen lies in the state of Hesse. The capital and largest city of Germany is Berlin (followed by Hamburg and Munich – the only three German cities with more than one million inhabitants). Germany is a member of the United Nations, NATO, the G8, G20 and OECD. It is a major power with the world's fourth largest economy by nominal gross domestic product (GDP) and the fifth largest by purchasing power parity worldwide. It is the second largest exporter and third largest importer of goods. In absolute terms, Germany allocates the third biggest annual development aid budget in the world, while its military expenditure is ranked seventh. The country has developed a very high standard of living and a comprehensive system of social security. It holds a key position in European affairs and maintains a multitude of close partnerships on a global level. Germany is recognised as a scientific and technological leader in several fields[8].

4.2 BRIEF HISTORY OF GERMANY

A region named Germania, inhabited by several Germanic peoples, was documented before AD 100. Beginning in the 10th century, German territories formed a central part of the Holy Roman Empire, which lasted until 1806. During the 16th century, northern German regions became the centre of the Protestant Reformation while southern and western parts remained dominated by Roman Catholic denominations. As a modern nation-state, the country was first unified in 1871, with the inception of the German Empire. After the proclamation of the Weimar Republic in 1918, the Third Reich followed in 1933. The period was marked by a dictatorship and the initiation of World War II. After 1945, Germany was divided by allied occupation and evolved into two states, the German Democratic Republic in the east and the Federal Republic of Germany in the west. In 1990, Germany was reunified. West Germany was a founding member of the European Community in 1957, which became the EU in 1993 and today is part of the Schengen Area and a member the Eurozone since 1999[9].

LEARN MORE HELPFUL FACTS ABOUT GERMANY:

- http://www.tatsachen-ueber-deutschland.de/en
- http://www.justlanded.com/english/Germany/Germany-Guide
- http://www.discover-germany.diplo.de

4.3 SOCIETY

***"Unity and** justice and freedom"* (*"Einigkeit und Recht und Freiheit"*) are the first words of the German national anthem which openly proclaim some of the most important values of the society. The Federal Republic of Germany is a country with a modern, open and accepting lifestyle. Germany is the most densely populated country in

[8] Cf. www.wikipedia.org (direct link: http://is.gd/GermanHistory)
[9] Cf. www.wikipedia.org (direct link: http://is.gd/GermanHistory)

Europe, and since the 1950s, there has been an enormous increase in immigration into Germany by people looking for employment. Currently, over 15 million people have some sort of immigration background, thus, making the country a prime example of the effects of globalization. Due to this increase in new cultures and immigrants, the acceptance of social and ethnic diversity has increased dramatically. The fall of the Berlin Wall in 1990 is still a major issue in German life today, and the effects are still noticeable in many facets of life.

4.4 LANGUAGE

Although many people in Germany speak some basic English, being in Germany is the perfect opportunity for you to add another language to your repertoire. Knowing the language will simplify many day-to-day activities and give you an invaluable skill for your future career. Due to the international atmosphere of many of the life science labs, they conduct their seminars in English, so you will be able to work effectively while you are still improving your German. German courses taught by the International Office are also a good opportunity to meet people when you are new in town, and it helps to speak at least a few sentences of German when you go shopping.

If you don't speak German, you will sometimes depend on your German colleagues and friends. Although we try to explain a lot to you in this book, we notice that there are still a lot of instructions, websites and forms that are only available in German. If you are on your own and urgently need to solve a problem, the GGL Office might be able to help you with a tutor, but you need to give us some time to get that organised. Because it is a better solution to learn German from the beginning of your stay, we recommend to take an intensive course or regular evening course soon after your arrival. These courses are offered by the International Office (see chapter 6.3.2 and 3.11).

4.5 PUBLIC HOLIDAYS

The following are the official holidays of the Federal State of Hesse. Remember, you will not be able to go shopping on any of these days or on Sundays (except for specified Sundays: *"Verkaufsoffener Sonntag")*, and the trains and busses will run on reduced schedules. Many of the German holidays are based on Christian traditions and have no fixed date, so it is recommended that you purchase a current German calendar with national holidays. Also, some states celebrate slightly different holidays, so be sure to check your calendar if you are planning to go on a trip.

HOLIDAY NAME *(ENGLISH)*	HOLIDAY NAME *(GERMAN)*	DATE
New Year	**Neujahr**	January 1st
Good Friday	**Karfreitag**	The Friday before Easter
Easter Monday	**Ostermontag**	The Monday after Easter
Labour Day	**Tag der Arbeit**	May 1st
Ascension	**Christi Himmelfahrt**	40 days after Easter
Pentecost Monday	**Pfingstmontag**	The Monday after Pentecost
Corpus Christi	**Fronleichnam**	10 days after Pentecost
Day of German Unification	**Tag der deutschen Einheit**	October 3rd
First Christmas Day	**1. Weihnachtstag**	December 25th
Second Christmas Day	**2. Weihnachtstag**	December 26th

4.6 RECYCLING ♻

Germany has developed a world-renowned system for managing and recycling household waste products. Since many packaging materials can be recycled into new products, recycling plays an important role in all households. It is very common to separate your garbage according to the different materials in order to conserve resources. This may seem very confusing and complicated at first, but there is a logical order to this with different coloured trash cans and trash bags.

WHAT GOES WHERE?

YELLOW CAN/ YELLOW SACK *(GELBE TONNE/ GELBER SACK)*	The "*Yellow Can*" ("*gelbe Tonne*") or "*Yellow Sack*" ("*gelber Sack*") is for all recyclable plastic packaging, empty tins, beverage cartons, etc. All of the items you put in here should have the "*grüner Punkt*" (Green Dot) symbol on the outside. All food waste should be removed before disposal. 
BLUE CAN *(ALTPAPIERTONNE)*	The "*Blue Can*" ("*blaue Tonne*") is for all paper and cardboard waste products (books, magazines, old paper). When throwing away old documents, be sure to shred any papers with your personal information on them.
GREEN CAN *(GRÜNE TONNE)*	All organic waste, such as leftover foods, eggshells, coffee filters and garden waste belongs in the "*green can*" ("*grüne Tonne*"). Liquids, toiletries and cigarette butts should not be thrown into the green can!
BLACK CAN *(SCHWARZE TONNE)*	Other waste materials which do not belong in any of the above mentioned cans go into the black can ("*schwarze Tonne*"). These would be items such as cigarettes, ashes, toiletries, rubber, or diapers.

Yellow bags can be ordered for free from ZAUG Recycling GmbH at ☎ 0800 / 7770008 (toll free) or online at: ▸ *http://is.gd/YellowBags*

THINGS YOU SHOULD NOT THROW AWAY:

GLASS *(ALTGLASCONTAINER)*	Located at strategic places in residential areas are glass containers for glass jars and bottles that do not have a deposit (noted on the bottle label – "*kein Pfand*"). All bottles thrown in must be separated into white, green and brown glass. You should also dispose of glass jars and bottles during the day, so as not to disturb your neighbours at night (usually before 20:00).
LARGE ITEMS *(SPERRMÜLL)*	Throughout the year, the city collects large items that don't fit into your trash cans – such as furniture, radios, bicycles, tents, grills, etc. In Giessen, having large items removed costs between € 1 and € 5. For specific times, check the website (in German): ▸ *http://tinyurl.com/garcal*

DEPOSIT ("*PFAND*")

Many of the plastic and glass beverage bottles, cans and jars you buy in Germany have a deposit ("*Pfand*") on them – sometimes as much as € 0.25. Thus, you should have a place in your residence where you keep empty bottles until you are ready to return them. Bottles can be returned to any store that sells that particular kind of bottle (it's usually best to go to larger supermarkets because they take more varieties).

"*MEHRWEG*" BOTTLES AND JARS

"*Mehrweg*" (lit. more-way) bottles and jars (beer bottles, soda bottles in harder plastic) are sanitized, refilled and sold again in stores. They are usually sold in cases and have a deposit between € 0.08 and € 0.15.

"*EINWEG*" BOTTLES AND CANS

Bottles and cans made of recyclable materials (usually PET) are called "*Einweg*" (lit. one-way) bottles and cans because they are used once and then recycled to make new bottles and cans. All bottles marked with the special symbol have a deposit of € 0.25, but those labeled "*kein Pfand*" (no deposit) can be thrown into the yellow sack.

You can also take large items to the **Waste Management Department**:

Abfallwirtschaftszentrum AWZ
Lahnstraße 220
35390 Giessen
☎ 0641 / 97 18 921

HAZARDOUS ITEMS *(SCHADSTOFFE)*

Items, such as paint, paint remover, old medications, household chemicals, spray cans, batteries and electronic device do **not** belong in the black can. These items can usually be disposed of in stores in the specially marked containers for hazardous materials. Giessen also collects hazardous materials, but you must personally give them to the collectors, and you are not allowed to simply leave them on the street.

4.7 SMOKING

Tobacco products may be purchased and used by persons 18 years or older. Due to a smoking ban which began in 2010, smoking is no longer legal in closed spaces, such as restaurants, train stations and shopping malls. However, there are still designated areas for smokers. At the university, you are only permitted to smoke outside of buildings. Smoking is not allowed in any public buildings.

Some bars and restaurants also permit smoking ("*Raucherkneipen*"), but to enter these establishments, you must be at least 18 years old and carry an ID with your birth date – some places are very strict with this regulation because they can be fined large sums of money.

4.8 INSURANCE

Apart from mandatory health insurance, there is a large number of other optional types of insurance available. A few of them are detailed below, but you can go to almost any insurance company to find out about more offers. The insurance industry is extremely competitive in Germany, so shopping around could save you quite a bit of money. Just make sure that you take out a plan that covers everything you expect.

1) **Personal Liability** ("*Haftpflichtversicherung*") – covers damage done to third-party property or persons and is highly recommended
2) **Household Contents** ("*Hausratversicherung*") – covers possessions in your home
3) **Legal** ("*Rechtschutzversicherung*") – covers legal fees in the event that you go to court
4) **Travel** ("*Reiseversicherung*") – covers travel-related accidents and health insurance abroad without having to take out an extra policy for each trip
5) **Key** ("*Schlüsselversicherung*") – covers loss of private and work keys, can be included in the personal liability insurance

4.9 BANKING – CREDIT AND OTHER SERVICES

In February 2014, the conversion of cashless payment transaction in Germany to the SEPA (Single Euro Payment Area) process will be made. After this date, you will need to have two numbers ready for any cashless payment transaction: BIC (Bank Identifier Code), needed for transnational payments only, as well as the **IBAN**, your **International Bank Account Number** (22-place), both to be found at your EC card and monthly bank statements.

You can print bank statements in branches of your bank with your EC card, on which all transactions are listed. Money transferred to the account has the symbol "*H*" ("*Haben*"). Money transferred from the account has the symbol "*S*" ("*Soll*").

Integrated into some EC cards is a so-called "*Geldkarte*" (lit. money card). On the "*Geldkarte*" chip, you can load electronic money at your bank's cash machines (or special terminals). There are not many places to use this reserve, as not many shops have adopted the system, but some ticket machines for public transportation, for example, offer a cheaper rate if you pay with your "*Geldkarte*".

The relatively low usage of credit cards in Germany is atypical when compared to other developed countries. Instead of swiping credit cards, many people still prefer to pay in cash or with their EC card, so credit cards are not taken at all locations. Check shop doors and windows for stickers displaying which forms of payment are accepted or ask a salesclerk. Eurocard/Mastercard and Visa are the most commonly accepted cards in Germany – as in other parts of the world. If you have a PIN for your credit card, you can use it to withdraw money from cash machines, but watch out for fees, as these can be quite high[10].

An overdraft protection credit ("*Dispositionskredit*") lets you withdraw more money than is in your account up to a certain limit set by the bank, and the amount normally correlates with your monthly income. Interest rates for overdraft protection are relatively high, so you should only use them in case of an emergency.

Before offering some services and to grant you a larger overdraft, the bank will monitor your account over the first few months to confirm that money is regularly deposited. German banks are rather cautious with credit and credit cards.

[10] Cf. www.justlanded.com (direct link: http://is.gd/MoneyCards)

4.10 Work and taxes

In conjunction with the issue of financing your living during your doctorate, an important question arises: do I have to pay taxes and how does it work in Germany? If you receive a stipend, you usually do not have to pay income taxes. Be aware that this rule only applies to public and/or governmental scholarships; holders of scholarships from private enterprises are subject to income tax and have to claim their taxes. In this case, the administration of the university will make an announcement about your tax liability to the responsible local tax office.

The same applies to doctoral students who are employed as "*Wissenschaftlicher Mitarbeiter/in*" at the University. Having a regularly income above € 450 per month through employment means, you have to pay income tax. Those taxes will be automatically deducted from your salary through the payroll office. Therefore, you have to register at the **local tax office** to get an **income tax card**. The human resources department will inform you about this at the beginning of your employment.

Finanzamt Giessen ***(local tax office)***

Visitor's Address	Schubertstraße 60 35392 Giessen
Postal Address	Postfach 11 04 40 35349 Giessen ☎ 0641 / 48 00 10 0 Fax: 0641 / 48 00 15 90

The telephone hotline is available Monday to Thursday 8:00 – 15:30 and on Fridays from 8:00 – 12:00. If you have any further questions regarding tax regulations, you can send them an e-mail: ✉ Poststelle@fa-gis.hessen.de

At the end of the year, you must declare your taxes. The local tax office then checks to what extent taxes were deduced correctly. Some spending related to your job and doctorate such as books, training fees and public transport are taxable expenses, and you may get some of the automatically retained taxes back.

How does tax computation work? You must fill in lots of forms that are provided online through the local tax office (▸ 🖱 *http://www.finanzamt-giessen.de*). Don't be afraid. All those forms might look complicated at the beginning, but with a bit of calmness, they are easily manageable.

4.11 Additional income

If you wish to earn extra money, you need to take into consideration whether you hold a visa and what kind. Also, you should be aware that regulations differ for recipients of stipends and for employees (see chapters 2.4.2 and 3.10).

Regulations for student visa holders

If you entered Germany on a **student visa** (see chapter 3.1) and possess a valid residence permit, you are allowed to engage in gainful employment for up to 90 full working days per year or 180 half-days per year without a work permit.

This temporary employment is also permitted outside the official university vacation times. Up to four hours a day constitutes a half-day, and any period of time beyond that counts as a full day's work. All that is required is the appropriate endorsement of your passport by the Office for Alien Affairs. Part-time employment within the University (so-called "*HiWi-Jobs*") are also permitted on the basis of this endorsement, and is valid over and above the basic 90 days. If you are employed in a job for **more**

than 90 full work-days or 180 half-days per year, you must obtain **special dispensation** from your local **Office for Alien Affairs** (*"Ausländerbehörde"*) with the additional approval of the **Municipal Employment Office** (*"Bundesagentur für Arbeit"*). Both authorities base their final decision on the particular circumstances involved. Students have no right by law to receive an extended work permit. You must submit your application to the Office for Alien Affairs, which then contacts the Municipal Employment Office. The authority checks to determine that extension of employment is not detrimental to the student's course of study or is likely to result in its unnecessary prolongation. Only in absolute exceptional cases, permission is granted. In issuing work permits, the employment office must adhere to the principle of priority: i.e. a permit to work at a particular job can only be granted if no applicant with a priority claim (e.g. a German or EU citizen) is available. The Office for Alien Affairs can also issue a work permit if a student is in economic straits. However, situations like these can be very tricky and you have to be sure, you are making the right decision, because your residence permit will have been issued on the basis that you can give proof of sufficient funds. A declaration that you find yourself in financial difficulties may accordingly endanger the extension of your residence permit.

If you hold a **research visa**, you have a work permit for this position only, and you are not allowed to seek additional employment even though your contract says that you are working part-time. Small honoraria such as the stibet teaching assistantships seem to be allowed, though.

4.11.1 Regulations for recipients of stipends

With a student visa, you are most likely funded through a stipend or scholarship either by your department or by a funding institution such as the DAAD, DFG or others. When planning to work, you should also know that most of them have their own rules concerning extra income. You will need to obey these rules **in addition** to those of the Office for Alien Affairs. In most cases, you will need to obtain your supervisor's consent and the permission of the funding institution.

HERE ARE A FEW EXAMPLES:

The **DAAD** permits students to earn up to € 450 per month through part-time or full-time work (*"Nebentätigkeit"*). An example would be employment as a research assistant in your department. Occasional royalties, honoraria and fees, such as for translation, are not defined as employment. For any kind of supplementary employment, you must first obtain written consent from your supervisor and the DAAD.

If you receive a stipend from the **JLU**, you may work up to 42 hours a month if the employment promotes your academic development, such as a position as research assistant. If the employment does not promote your doctoral degree, only 16 hours per month are permitted. If you receive a stipend from the DFG, you may earn up to an additional € 6 000 per year.

As a student, **income above € 450 a month is taxable**. The JLU will automatically inform the tax office (*"Finanzamt"*) if you earn more than that through supplementary employment – as will most other employers. For this purpose, you must obtain an **income tax card** from the tax office. The Giessen branch of the tax office will advise you on all matters connected with your income tax declaration, including reduction of the taxation rate for students and tax rebates. For further information, consult the *"Finanzamt Giessen"* (also see chapter 4.10).

4.11.2 Regulations for employees

If you are doing your doctorate based on an employment contract, you will already have one income tax card. If you intend to take on additional employment elsewhere (which is not advisable), you will need to obtain a second income tax card and will have to pay higher taxes for that employment. In addition, you have the opportunity to earn extra money at the JLU without a new tax card for projects, in which a clear defined product is delivered ("*Werkvertrag*"), or for teaching ("*Lehrauftrag*") or in form of other small honoraria. In any case, you need to fill in a form ("*Nebentätigkeitsanzeige*") in which you inform your supervisor, who must give his or her permission, and the Human Resources Department ("*Personaldezernat*") at the JLU that you intend to take on that additional work.

4.12 PHONE, MOBILE PHONE AND INTERNET

Compared to many countries, using a telephone in Germany can quickly become very expensive. Making calls to landlines is, however, much cheaper if you are calling from a landline yourself. Germany has a large number of telecommunication providers and each of them has its own special packages with different benefits – the same goes for mobile phones and internet – so it is beneficial for you to do some shopping around to see which would fulfil your needs the best.

Mobile phones work with SIM cards that can be purchased either as part of a monthly contract or on a pre-paid basis. A few providers: Deutsche Telekom (*www.telekom.de*), O_2 (*www.o2online.de*), BASE (*www.base.de*), Vodafone (*www.vodafone.de*), Blau (*www.blau.de*), E-Plus (*www.eplus.de*), Fonic (*www.fonic.de*), Simyo (*www.simyo.de*), Klarmobil (*www.klarmobil.de*).

INTERNATIONAL CALLING

To make a call outside of Germany, just dial 00 + (Country Code) + (Phone Number). To keep up with friends and relatives abroad, it would be a good idea to find some online services or purchase calling cards which allow you to make international calls either cheaply or for free. One of the best-known services is Skype. You can download the chat client and have text or voice chats as well as make international calls. Skype also offers subscriptions which allow you to make calls even cheaper. For more information, visit ▸ *http://www.skype.com*
You can also use other chat and instant message clients to make international calls with an internet connection.

5 LIVING IN GIESSEN

5.1 ABOUT GIESSEN

Giessen has about 76 000 inhabitants and more than a third of the population is associated with the Justus Liebig University. Together with the University of Applied Science Giessen/Friedberg (THM), there is a large number of academics in town, and Giessen is the town with the highest student per capita ratio in Germany. With 30 schools, this is the educational centre of the region. Compared to other university towns in Germany, the prices for rent, restaurants etc. are relatively low, and you usually do not have to go far for the necessities.

Upon enrolling at the university, students get a so-called "*Semesterticket*" for public transport of the RMV ("*Rhein-Main-Verkehrsverbund*", http://www.rmv.de/en) which makes it cheap and easy to explore other towns in the area – like Frankfurt, Kassel, Marburg and Wetzlar. The "*Semesterticket*" allows you to take all busses, trams, subways, and regional trains in Hesse, but no long-distance trains (like IC or ICE).

Since Giessen only has a small picturesque downtown area, one usually mentions the beautiful surrounding landscape with forested hills and castles (see http://www.burg-gleiberg.de, in German). There are several beautiful places in Giessen, e.g. the botanical garden, the area around the University main building (pre-World War II architecture), the new and the old castles (with a nice art gallery, free admission, paintings from 1600 – 1990s), the "*Oberhessisches Museum*" ("*Leib'sches Haus and Wallenfels'sches Haus*") and the big shopping pedestrian street "*Seltersweg*". For more information about Giessen, see: http://www.giessen.de (in German).

5.2 HISTORY

Giessen was first mentioned in records in 1197. It was a moated castle then, built by Count Wilhelm von Gleiberg. It received its town charter around 1240. The town became part of Hesse-Marburg in 1567, passing to Hesse-Darmstadt in 1604. In 1607, Landgrave Ludwig V of Hesse-Darmstadt founded the university (see chapter 6.1). Two years later, the botanical garden was created, which makes it the oldest in Germany that is still on its original location. When the Grand Duchy of Hesse was created in 1803 during the Napoleonic Wars, Giessen became the capital of "*Oberhessen*". In 1849, the first train tracks reached Giessen and connected the town to Frankfurt and Kassel. Since 1894, Giessen has had a public transport system consisting, at first, of horse-buses, and then streetcars (1909 – 1953). During World War II, heavy bombing destroyed about 75 % of Giessen in 1944, including most of the town's historic buildings. After the war, Giessen became part of the modern state of Hesse, and an American military base was located in Giessen until recently[11].

[11] Cf. www.wikipedia.org (direct link: http://is.gd/Giessen)

5.3 Food

One of the most exciting parts about coming to a new place is having the opportunity to try local specialities. In the state of Hesse, there are also many traditional local delicacies which you may want to try while you are here. The first two dishes that come to mind when Germans think about Hesse are "*Handkäs mit Musik*" (a fermented whey cheese with onions, vinegar and oil) and "*Grüne Soße*" (green sauce), a vegetarian dish with approximately ten different herbs in sour cream served with eggs and potatoes. You can wash down these dishes with a "*Bembel*" (pitcher) of Hessian "*Äbbelwoi*" (apple wine). There are also many other local specialties to taste and enjoy!

Giessen has a large number of different kinds of grocery stores and supermarkets. Apart from regular supermarkets, there are also discounters which offer a limited assortment at reduced prices (sometimes even name-brand products).

Thanks to the diversity of the residents of Giessen, there are also a number of grocery stores which carry international goods. Several shops are specialized in Indian, Chinese, Vietnamese, Russian, Turkish and other products from different countries. If you cannot find what you need in Giessen, Frankfurt is only a 40 minute train ride away, or there are other online vendors who will deliver right to your house. There are also restaurants, pubs and clubs for almost every taste.

A small selection of restaurants:

- **Adria** – Italian cuisine (*http://www.pizzaadriagiessen.de*)
- **Alt Giessen** – German cuisine (*http://www.hotel-alt-giessen.de*)
- **BarCelona** – Spanish cuisine, Frankfurter Str. 84
- **Bolero** – International cuisine (*http://giessen.bolerobar.de*)
- **Diyar Sofrasi** – Turkish cuisine, Rodheimerstr. 42
- **Enchilada** – Mexican cuisine (*http://www.enchilada.de/giessen*)
- **Gutburgerlich** – Burgers (*http://gutburgerlich.de*)
- **Hacienda** – Mexican cuisine (*http://www.hacienda-giessen.de*)
- **Hawwerkasten** – Hessian cuisine (*http://www.hawwerkasten.de*)
- **Justus im Hessischen Hof** – German cuisine (*http://www.gasthaus-justus.de*)
- **Kim Phat** – Asian Food & Sushi Bar (*http://www.kimphatsushi.de*)
- **Kleines Häusers** – German cuisine (*http://www.kleines-haeusers.de*)
- **Mama of Africa** – Ethiopian and Eritrean cuisine (*http://www.mamaofafrica.de*)
- **Melchiors** – Hessian cuisine (*http://www.deinmelchiors.de*)
- **Mirch Masala** – Indian cuisine (*http://bit.ly/Mirchmasala*)
- **Paprica** – German cuisine (*http://www.paprica-bar.de*)
- **Vanilla Bar** – German cuisine (*http://www.vanillabar.de*)
- **Vollwert-S.** – Vegan and vegetarian cuisine (*http://www.vollwert-s.de*)
- **Zum Löwen** – Italian cuisine (*http://www.neuenweg-giessen.de/zumloewen.html*)

Pubs and coffeehouses:

- **coffee one** – Coffeehouse (*http://www.coffee-one.de*)
- **Centralbar** – Bar (*http://www.centralbar-giessen.de*)
- **Dach Cafe** – Coffeehouse and Bar (*http://www.dachcafe.com*)
- **Giramondi** – International Coffeehouse, Bahnhofstr. 53
- **Irish Pub Giessen** – Pub (*http://www.irishpub-giessen.de*)

5.4 CULTURE

Giessen has a rich cultural life: theatres and two cinemas (Kinopolis and Kino-Center (http://www.kinopolis.de/gi, in German), museums, concerts, a botanical garden (http://bit.ly/GiBotGar), a public library (http://www.stadtbibliothek.giessen.de) and other cultural possibilities. Current events are listed here:

- **Giessener Express** *(http://www.marbuch-verlag.de)*
- **Frizz** *(http://frizz-mittelhessen.de)*
- **Streifzug** *(http://bit.ly/GiStreifzug)*

THEATRES:

- **Stadttheater** – Großes Haus, the big urban stage, and **TiL Studiobühne** (http://www.stadttheater-giessen.de)
- **The Keller Theatre** – the traditional English theatre (http://www.keller-theatre.de)
- **Kleine Bühne Giessen** *(http://www.kleine-buehne-giessen.de)*

MUSEUMS:

- **Mathematikum** – the world's first mathematical science centre (http://www.mathematikum.de)
- **Liebigmuseum** – Justus Liebig's lab (http://www.liebig-museum.de)
- **Oberhessisches Museum** (http://bit.ly/OberhessMu)

CLUBS:

- **Admiral** (http://www.admiralmusiclounge.de)
- **Agostea** (http://www.agostea-giessen.de)
- **Alpenmax** (http://www.alpenmax-giessen.de)
- **Haarlem** (http://www.haarlem.de)
- **MuK** (http://www.muk-giessen.de)
- **Scarabée** (http://www.scarabee.de)
- **Ulenspiegel** (http://www.ulenspiegel-giessen.de)

Anyone looking for salsa dancing, "*Lokal International*" (see chapter 6.3.5) has a salsa night every Thursday as does the Centralbar on Wednesdays.

5.5 PUBLIC TRANSPORT

Giessen offers a large number of possibilities for getting from point A to point B, and with its close proximity to Frankfurt Rhein-Main International Airport, it almost doesn't even matter how far away point B is!

If you are enrolled at the JLU, you will be able to take all public transport throughout Hesse. Just make sure that the train or bus, you want to take, has the RMV, NVV, HLB or VRN logo on the outside – and that you do not sit in the first class!

Germany is notorious for its complicated public transport timetables. Busses and trains can come at different times Monday to Friday, Saturdays, Sundays, holidays, and during school breaks. It is very important that you read the timetables either before you go to the station or find some other way to access them (there are apps for smart-phones, i.e. RMV or Deutsche Bahn, that will let you plan on the go and print editions for certain areas).

Bus

Giessen has an extensive bus system with 16 regular lines and two night bus lines. The night buses run on Fridays, Saturdays and holidays. For current times and stations, check: ▸ http://www.rmv.de/en

Buses in Germany have specific times when they come, and some lines even go to different stations depending on the time. Thus, checking the bus times can save you lots of irritation and time out in the cold waiting for buses to come.

> **NOTE**
> Buses do not stop unless you press the **red STOP button**!

Train

There is a large range of services offered by the Deutsche Bahn (DB), such as Weekend Tickets, Group Tickets and the Bahn Card for discounted tickets. You can receive more information about these and other offers at: ▸ http://www.bahn.de. If you have purchased a **Bahn Card** and wish to cancel it, you must submit a written letter of cancellation at least six weeks before it expires.

> **NOTE**
> If you do not cancel your **Bahn Card**, it will automatically be extended for another year – even if you are not in the country.

Automobile

Due to the abundance of cycling paths and public transportation, you should probably leave your car at home if you live within Giessen – especially when you are going to the university. Parking is very limited almost everywhere. On the other hand, having a car can be very useful when going shopping or for other outings.

International doctoral students planning on driving in Giessen should check if their national driver's license is valid in Germany or what steps must be taken to have it transferred.

Bicycle

There are special bicycle paths throughout the city and scenic country roads along the Lahn River which make it easy for you to cycle all around the region (or shorter trips to surrounding towns like Wetzlar), and many bookshops sell cycling maps of Giessen and its surroundings.

When you cycle in the city, you must be very careful, even in the designated cyclist lanes. The inner city can be somewhat crowded and you can easily be overlooked by cars. Parking your bicycle could be a problem especially around university buildings and be sure to buy a good lock.

Flights

Frankfurt Rhein-Main International Airport (FRA)

Although Giessen does not have its own international airport, the Frankfurt Rhein-Main International Airport (FRA) is just an hour train ride away. Frankfurt is one of the largest airports in Europe and offers flights to a large number of world destinations, so it is very likely that you will fly into Frankfurt if you are coming from countries outside Germany. You can reach the airport by taking any train from Giessen to Frankfurt "*Hauptbahnhof*" (Central Station) and then transferring to S-Bahn lines S8 or S9 to "*Flughafen*".

✈ *FRANKFURT-HAHN (HHN)*

If you are planning on travelling with a discount airline, such as Ryanair, Iceland Express or Wizz Air, you will be departing from Frankfurt-Hahn. This is NOT the same as Frankfurt Rhein-Main International Airport, so be sure that you do not go to the wrong airport. To reach Frankfurt-Hahn, you will have to take a train from Giessen to Frankfurt Hauptbahnhof (Central Station) and transfer to a bus which leaves from the bus stop on Mannheimer Str. Each bus ticket costs € 13, and the ride usually lasts around an hour and a half. The busses also run on Sundays and holidays.

5.6 SHOPPING

There are many shops in Giessen, especially in the town centre in the pedestrian zone, including a large department store (Karstadt) and a shopping mall ("*Galerie Neustädter Tor*", see ▸ *http://www.galerie-neustaedtertor.de*) nearby. A free app for smart phones provides you with information about the high variety of shops in the main street of our pedestrian zone, Seltersweg (▸ *http://www.selterswegapp.de*). Usually, you find a few shops in every district, too. Additionally, there are clusters of big shops in the industrial areas Gewerbegebiet West (next to Heuchelheim) and Schiffenberger Tal. Some supermarkets are open until 9 or even 10 in the evening, but most shops close between 19:00 or 20:00 (some even earlier) during the week. They also tend to close earlier on Saturdays (16:00) and are closed on Sundays (which sometimes surprises foreign visitors). For fresh fruit and vegetables, there's a farmers' market twice per week (Wed & Sat 7:00 – 14:00 at Brandplatz) in nice surroundings in the front of the two castles in the city.

5.7 HEALTHCARE AND HOSPITALS

In Germany, most people have a "*Hausarzt*" (general practitioner) as their family doctor who makes referrals to specialists or a hospital if necessary. Only in certain cases, you can visit a specialist without first consulting your family doctor, so you will need a "*Hausarzt*" to begin with. Dentists are an exception, since you visit them directly.

When going to the doctor, you should try to schedule an appointment ("*Termin*") to avoid long waiting times. If you are in need of urgent care, you can go to the doctor without an appointment, but expect to wait. For regular consultations, you may have to wait days or even weeks – especially to consult a dentist or other specialist. During holiday times, most doctors have a substitute practitioner in to cover for them. Most doctors speak basic English, but you can also contact your embassy or consulate for a list of doctors who speak English or your native language[12]. More information about specific doctors and the languages, they speak, can be found in the "*Intercultural Medical Brochure*" produced by the city of Giessen: ▸ *http://bit.ly/GiIntHealth*.

Hopefully, you will never need to visit a hospital during your doctoral studies, but if you have to, on the following page, you will find a list of the hospitals as well as their translation services and emergency services in Giessen. In case, you need urgent care, you might also ask your German colleagues in the laboratory to call and make an appointment for you or accompany you to explain your problems.

[12] Cf. *www.justlanded.com* (direct link: *http://is.gd/Doctors*)

Hospitals and clinics

Name	Contact Information	Translation Service
Universitätsklinikum Giessen und Marburg GmbH (UKGM) (University Clinic Giessen and Marburg)	Rudolf-Buchheim-Str. 8 35385 Giessen ☎ 0641 / 99 40070	Afghan, Arabic, English, Eritrean, French, Italian, Dutch, Persian, Pilipino/Tagalog, Polish, Portuguese, Romanian, Russian, Serbo-Croatian, Spanish, Czech, Turkish, Hungarian
Evangelisches Krankenhaus (Lutheran Hospital)	Paul-Zipp-Str. 171 35398 Giessen ☎ 0641 / 96060	Aramaic, Bulgarian, English, Finnish, French, Georgian, Greek, Hebrew, Italian, Yugoslavian, Kurd, Persian, Polish, Romanian, Russian, Spanish, Czech, Turkish, Hungarian
Klinik für Psychiatrie und Psychotherapie Giessen (Clinic for Psychiatry and Psychotherapy)	Licher Straße 106 35394 Giessen ☎ 0641 / 4030	Flemish, French, Greek, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Turkish
Balserische Stiftung (Balserische Stiftung Hospital)	Wilhelmstr. 14 35392 Giessen ☎ 0641 / 7952117	Albanian, Polish, Russian, Turkish, Yugoslavian
St. Josefs-Krankenhaus (St. Josefs Hospital)	Liebigstr. 24 35392 Giessen ☎ 0641 / 70020	Afghan, Croatian, English, French, Greek, Hindi, Italian, Polish, Portuguese, Russian, Spanish (Peruvian, Chilean), Turkish

Rescue and emergency services

Service	Contact Information	Hours
Notruf (Emergency Hotline)	☎ 112	24 hours Police, fire department, and rescue services
Ärztlicher Bereitschaftsdienst Giessen (Emergency Medical Service)	☎ 0641 / 45091	After 18:00 (Wed 13:00) Weekends and holidays
Augenärztlicher Notdienst (Eye Emergencies)	☎ 0641 / 99 46444	Mon, Tue, Thu 18:00 – 8:00 Wed, Fri after 14:00 Weekends and holidays
DRK – Deutsches Rotes Kreuz, Kreisverband Giessen (German Red Cross)	☎ 0641 / 400060	
Johanniter Unfallhilfe, Regionalverband Giessen (Accident Service)	☎ 06403 / 70300	
Kinderärztliche Notfallzentrale (Paediatric Emergency Centre)	☎ 0641 / 99 43606	Mon, Tue, Thu 20:00 – 8:00 Wed 15:00 – 8:00, Fri after 20:00 Weekends and holidays

6 JUSTUS LIEBIG UNIVERSITY

6.1 HISTORY

Giessen University (first the "*Ludoviciana*" or "*Ludwigs-Universität*" and since the end of the Second World War "*Justus-Liebig-Universität*") is one of the oldest universities in the German-speaking part of Europe. In the late Renaissance, students from Hesse generally had to go to the universities of Erfurt (founded 1392), Prague (1348), France or Italy to pursue their research and studies. After 1527 in the wake of the second great post-Reformation religious movement, it became possible to study in Marburg. As a result of religious and philosophical differences at Marburg, which turned Calvinist, the members of the staff, who remained loyal to the Lutheran faith, moved in 1607 to the nearby town of Giessen, where Landgrave Ludwig V of Hesse-Darmstadt had created a new university.

The Ludoviciana played an important role in several of the major scientific discoveries of the nineteenth century. True to the principle of quality over quantity, it was a small handful of gifted Giessen scholars, who brought to the world a series of scientific breakthroughs.

Among these pioneers were the chemist Justus Liebig (founder of organic chemistry, the chemical teaching laboratory and inventor of artificial fertilizers); the jurist Rudolf von Jhering, the theologians Adolf von Harnack and Hermann Gunkel, Wilhelm Conrad Röntgen (father of X-rays and winner of the first Nobel Prize for physics) and Friedrich Wilhelm Welcker (historian of Antiquity). The "*young*" sciences, which began to emerge in full force around 1830, led to the establishment of an unusual variety of subjects at Giessen, for which the university continues to enjoy a high reputation.

After the Second World War, Justus Liebig University resumed operations in 1946 with agriculture, veterinary medicine, the most essential natural sciences, and (starting in 1950 onwards) human medicine. It was not until 1957 that the University's charter was restored by the American occupation, and it was also at this time that an extensive construction programme for new buildings was launched.

The university grew to become the second-largest in Hesse, in accordance with the new doctrine of university access for all social classes in the 1970s. For more details, visit: ▸ http://bit.ly/JLUHist

6.2 FACTS AND FIGURES

Today, the Justus Liebig University ranks as one of Germany's top universities in the life sciences and cultural studies. It offers an exceptionally wide range of degree programmes in the fields of law, business and economics, the natural sciences, the social sciences and the humanities. Very few universities, for example, offer the combination of agricultural sciences, food science and nutrition and veterinary medicine. Along with medicine and biology, these subjects constitute one of the JLU's profile areas – the life sciences.

ALTOGETHER THE JLU CONSISTS OF ELEVEN FACULTIES AS LISTED BELOW:

Faculty 01 – Law
Faculty 02 – Economics and Business Studies
Faculty 03 – Social Sciences and Cultural Studies
Faculty 04 – History and Cultural Studies
Faculty 05 – Language, Literature, Culture
Faculty 06 – Psychology and Athletic Science*
Faculty 07 – Mathematics and Computer Science, Physics, Geography
Faculty 08 – Biology and Chemistry*
Faculty 09 – Agricultural Sciences, Nutritional Sciences and Environmental Management*
Faculty 10 – Veterinary Medicine*
Faculty 11 – Medicine*

* *member faculties of the GGL*

NUMBER OF PERSONS AT THE UNIVERSITY

In the winter semester 2013/14, **26 500 students** were enrolled at the JLU giving Giessen the highest student-inhabitant ratio of all university towns in Germany. With about **4 550 employees** including professors (330), teaching and research staff (1 720) and administrative and technical staff (2 500), the JLU is the largest employer in the immediate region.

INTERNATIONAL COOPERATION

About 2 300 international students are enrolled at the Justus Liebig University. There are 70 formal agreements for partnerships, cooperative programmes and exchanges worldwide as well as 210 ERASMUS-partner institutions within Europe. In addition, the JLU cooperates with 18 universities in North America and nine universities in Australia under the auspices of Hesse's state partnership programme.

The JLU offers a wide range of international bachelor and master programmes as well as international postgraduate study programmes leading to a doctorate/PhD. Almost 30 % of all doctoral students originate from countries other than Germany, examples of which you can read here: ▸ http://www.uni-giessen.de/cms/intstudien

ACADEMIC CALENDAR

Semesters in Germany work a little bit differently than in many other countries, but follow the general pattern of winter semester (WiSe) (middle of October to the beginning of February), winter break ("*vorlesungsfreie Zeit*") (middle of February to the beginning of April), summer semester (SoSe) (middle of April to the beginning of August), summer break ("*vorlesungsfreie Zeit*") (middle of August to the beginning of October). For a list of holidays in Hesse, see chapter 4.5.

6.3 SERVICE FACILITIES

6.3.1 The University IT Service Centre *(Hochschulrechenzentrum HRZ)*

The university's IT Service Centre ("*Hochschulrechenzentrum HRZ*") is responsible for the maintenance of the university's communication infrastructure. There is an English brochure about its important services and the electronic systems for students of the JLU: ▸ http://bit.ly/HRZsetup.

E-MAIL ADDRESS

If you enrol as a doctoral student, you will automatically get your university e-mail address (usually *<given name>.<family name>@<faculty>.uni-giessen.de*). If you do not enrol, ask your supervisor to get one for you. If this is not possible, you could visit the HRZ Service Centre (see below).

Using your university e-mail address is highly recommended because some professors or other employees of the university do not or are more hesitant to respond to private e-mail addresses. You will also stay informed about other topics of interest at the university through messages addressed to the entire university community.

Be sure to keep in mind that your address only has a certain amount of storage space, so you should promptly delete older messages or messages with large attachments. Otherwise you may not be receiving all of your e-mails.

USER IDENTIFICATION

For many electronic systems at the JLU, you need an *user identification* also called ***"s-code"*** (= "s-Kennung" / "HRZ-Kennung"). It starts with an "s" followed by another letter and four numbers. If you are an employee, you need to apply for a g-code (= "g-Kennung") instead. After enrolling at the JLU, students automatically get an account and user identification handed out by the Registrar's Office. Employees of the JLU need to fill in an *Application for Attendants* (= "Benutzungsantrag für Bedienstete": ▸ http://is.gd/ApplicationAttendants) at the IT Service Center and – after approval – receive their "g"-code. Non-enrolled students have to elaborate in an *Application for External Users ("Beutzungsantrag für Externe":* ▸ http://is.gd/ApplicationExternal) why an ID is necessary and how long they need to use it.

INTERNET

The university buildings have many internet ports and wireless routers installed. The residence halls alone harbor 2 080 internet ports maintained by the HRZ. The HRZ brochure explains the use of public data sockets, using wireless LAN, how to access the internet from your residence hall and remote connections to the university network. ▸ http://tinyurl.com/jluhrzsetup

STEP-BY-STEP EXPLANATION FOR CONNECTING TO THE INTERNET

To use the internet in the student residence halls, you will need the following:

1) A username with password
   a. *A username and password from the HRZ ("g- or s-Kennung")*
   b. *A username and password from the THM ("Technische Hochschule Mittelhessen") (Form: <given name>.<family name>@<faculty>.th-mittelhessen.de)*
   c. *A username and password from another institution participating in DFNRoaming*

d. *If you do not have one of these, please contact*
✉ *netz@hrz.uni-giessen.de*

2) A computer (PC, notebook, netbook …) with LAN port (Ethernet 10/100 or 10/100/1000Base-T)
3) A network cable for connecting your computer to the data socket (twisted pair cable with RJ45 plug)
4) Your computer must be set to "*Obtain IP address automatically*" and "*Obtain DNS server address automatically*"
5) A browser (i.e. Firefox, Internet Explorer, Safari, Opera, Google Chrome, …)

Connecting

1) Connect the LAN port of your computer to the data socket with a network cable.
2) Start your browser and open ▸ *https://login.uni-giessen.de* or any other website.
3) Sign in with your username and password (the internet connection is now available 24 hours a day, you might have to repeat two to three times).
4) After you have entered your login information, you will see a page confirming that you are successfully connected.
5) To log off, open ▸ *https://login.uni-giessen.de* and click "*Logout*"

Wireless Internet

The IT Service Centre operates several wireless LAN networks. It strongly recommends using the **Eduroam Network** which provides the highest security standards and a convenient handling. Not only does it allow you to access the internet at JLU and the University of Applied Science (THM), many other universities also participate in the eduroam network. It can be used by students, staff and guest of the JLU, whose home institute participates. For access, you require the following:

- ✔ Username and password *(see above)*
- ✔ Wireless adapter (must be able to decode WPA / WPA2 encryption)
- ✔ The device should already have 802.1X/ EAP-TTLS software or be able to be upgraded
- ✔ The IP configuration of the wireless adapter should be set to DHCP ("*Obtain IP address automatically*" and "*Obtain DNS server automatically*")
- ✔ No VPN software may be installed on your computer
- ✔ SecureW2 Client *(University connection software)*

Secure W2 client

The procedure of connecting your computer to wireless LAN depends on the operating system of your computer (e.g. Windows 7, Mac OS X, or Linux) as well as additional wireless LAN software that might be installed. If you use Windows, it is sufficient to install the programme "SecureW2", which is free of charge. The HRZ offers an installation kit for this programme that includes the necessary configurations. Therefore, the installation of your wireless LAN access to the university network is very simple and accomplished with a few clicks. GGL is providing an installation manual in English for **Windows** on our GGL homepage: ▸ *http://is.gd/InstallationManual*

If you need it for Mac or Linux, German instruction can be found here: ▸ *http://is.gd/WLanLinux* (Linux); ▸ *http://is.gd/WLanMac* (Mac).

WLAN ACCESS POINTS

WLAN is available on many access points at the campus, currently 802 *(retrieved July 2014)*. Libraries, cafeterias, auditoriums and classrooms are equipped with it. Within buildings, an area of 15 – 20 meters around an access point is provided. Please find an overview of available hot spots (at Life Sciences, Humane Sciences, Economics and Law, University Centre, Veterinary Medicine, Armoury, Sports and others) via the following link: ▸ *http://is.gd/WLanHotspotlist*

CONTACT

Hochschulrechenzentrum (HRZ)
Heinrich-Buff-Ring 44
35392 Giessen
✉ info@hrz.uni-giessen.de
☎ 0641 / 99 13013

▸ *http://www.uni-giessen.de/cms/fbz/svc/hrz*
Office Hours: Mon – Fri 9:00 – 22:00

Exception: the University Clinic
("*Universitätsklinikum Giessen und Marburg GmbH*", UKGM)

If you work in a building of the medical faculty and the university clinic, the following computer centre is responsible for you: Ressort V – AKAD ("*Klinische und Administrative Datenverarbeitung*"): ▸ *http://is.gd/UKGM_AKAD*

For WLAN access points in the area of the University Hospital and Medical Preclinics (FB 11) (at University Paediatric Clinic, AKAD, Anatomy, Biochemistry), please consult: ▸ *http://is.gd/WLanAkad*

UNIVERSITY TELEPHONES

From a university phone, you only need to dial the five digit extension to reach another university phone. From a local landline within Giessen, you must dial 99 + [5 digit extension]. To reach a phone belonging to the University Clinic, you must dial 93 + [5 digit extension].

6.3.2 The International Office

The International Office is a very important university facility for you, since it has many services and useful guidance to offer. First of all, there is a consultant for international doctoral students, offering advice via e-mail, phone or in person during office hours. Please contact:

International Student Advisory Office

Counseling of International Doctoral Students
Ms Elisa Engert
Goethestrasse 58
Ground Floor, Room 21
35390 Giessen
☎ 0641 / 99 12172
Fax: 0641 / 99 12179
Office Hours: Mon and Wed 10:00 – 12:00 or by arrangement
✉ promotionsstudium-international@uni-giessen.de
▸ *http://is.gd/InternationalStudents*

Secondly, the International Office offers a diverse programme for all international students and some events specifically for international doctoral students. Among these events are excursions, day trips, cultural events, workshops and trainings. There is also a Spouse and Family Programme for doctoral students with a partner or family. The International Office is always looking for new ways to help international doctoral candidates raise money – one of which is Teaching Assistantships which are also currently offered by the GGL.

Another event coordinated by the International Office is the roundtable for international doctoral students. It meets in the middle of each month at "*Lokal Internationa*l". Meetings are announced via an e-mail list, for which you can register via ✉ promotionsstudium-international@uni-giessen.de and at:

▸ http://www.uni-giessen.de/cms/internationales/veranstaltungen

Thirdly, as a doctoral student or a visiting researcher of the JLU, you and your dependants can make use of the International Office's German language courses. The evening courses are usually most interesting and run for 90 minutes twice a week:

▸ http://www.uni-giessen.de/cms/international-pages/language-courses/in/eveningclasses

The International Office also provides an extensive selection of programmes and services for German nationals wishing to gain experience abroad or with other cultures. In addition to language training and preparation for stays abroad, it also helps to organise internships, small travel grants or language partnerships.

Find more offers on the International Office website: ▸ http://www.uni-giessen.de/cms/international-pages/language-courses/in?language_sync=1

6.3.3 *"Lokal International"*

"Lokal International" at Eichendorffring 111, right amidst the student residence halls of the Eichendorffring, is an international meeting place for German and international students in Giessen. An experienced team of international students welcomes you at the bar which offers drinks and snacks at low prices.

"*Lokal International*" is open Tuesdays to Fridays from 18:00 and hosts an interesting programme of activities. They arrange regular events, such as karaoke, games, quiz nights and cooking evenings. Once a week, "*Sprachstammtische"* offer a casual possibility to train your German, Arabic, Spanish and French language skills with native speakers. Moreover, "*Lokal International"* hosts evenings highlighting certain countries, giving you the possibility to get to know other countries or make other students familiar with yours. For more information, please visit ▸ www.lokal-international.de or the "*Lokal International"* page on Facebook.

And, by the way, the "*Lokal International"* is a place of exchange, so everyone is welcome to contribute. Just approach someone from the staff with your ideas and become a part of the programme.

6.3.4 Library system

The library system at the JLU is comprised of the Central University Library (UB), Branch Libraries and Decentral Subject Libraries and contains around four million books and scientific journals which are almost all available to the general public. There is also a large amount of electronic media available for you through different publication portals and in the catalogue (OPAC) as well as the "*Electronic Journal Library*" (EZB).

Not to mention, you will also find the digital versions of doctoral, master's, and diploma theses in the "*Giessener Electronic Library*" (▸ *http://geb.uni-giessen.de/geb*).

If you are enrolled as a student of the JLU, your student ID acts as your library card. If, however, you are employed by the university, you can request a library card ("*Bibliotheksausweis"*) or a PPA ("*personenbezogener Professurausweis"*) from the Central Library. Generally, you can borrow books for four weeks – with the exception of journals or books not labelled for borrowing (large reference books, dictionaries, etc.). To gain access to all of the online services offered by the library, you will have to visit the Central Library once to have your account activated. Afterwards, you will be able to renew and request books online.

LIBRARY CONTACT PERSONS FOR SPECIFIC SUBJECT AREAS:

AGRICULTURE SCIENCE **NUTRITIONAL SCIENCE**	**(Ms) Dipl. oec. troph. Annette Bück** ✉ Annette.Bueck@bibsys.uni-giessen.de
BIOLOGY **BIO-CHEMISTRY** **BIO-PHYSICS** **MATHEMATICS**	**(Ms) Dipl. oec. troph. Rhea Grimm** ✉ Rhea.Grimm@bibsys.uni-giessen.de
PHYSICS	**(Mr) Florian Ruckelshausen** ✉ Florian.Ruckelshausen@bibsys.uni-giessen.de
CHEMISTRY **MEDICINE** **VETERINARY MEDICINE** **DENTAL MEDICINE**	**(Ms) Dr. med. Irmgard Hort** ✉ Irmgard.Hort@bibsys.uni-giessen.de

LIBRARY LOCATIONS

You can also find a list of the other branches of the Central Library (UB) and their hours of operation at: ▸ *http://bit.ly/gilibsys*. A list of important contacts and opening hours of the library branches is provided below.

NAME AND SUBJECTS	ADDRESS AND HOURS
Central Library *(Universitätsbibliothek)* History, Culture, Language, Literature, Psychology, Athletic Science, Mathematics, Computer Science, Physics, Geography, Biology, Chemistry, Agricultural Science, Ecotrophology, Environmental Science	Philosophikum I Otto-Behaghel-Str. 8 35394 Giessen **Mon – Sun 8:30 – 23:00** (except holidays)
Ludwig-Schunk-Bibliothek Chemistry, Nutrition, Medicine, Physics, Veterinary Medicine	Heinrich-Buff-Ring 58 35392 Giessen South Entrance, 5F **Mon – Sat 8:30 – 21:00** (except holidays)

6.3.5 University sports

The JLU has a fantastic range of sports activities for you to stay fit during your doctorate. The programme ranges from Pilates to underwater rugby and from hiking to salsa. A general fee of € 6 is charged when you enrol in your first course. Afterwards, many courses are free of charge and others require an additional fee, but all of them require registration at the beginning of the semester. For more information, visit the University Sports ("*Allgemeiner Hochschulsport*") website (in German):
▸ http://www.uni-giessen.de/ahs.

Moreover, you will find a broad range of different sports clubs, gyms and training offers in Giessen: ▸ http://bit.ly/JLUSports. If you like swimming, the city has two public swimming pools in town and three more in suburban municipalities (see: ▸ http://www.stadtwerke-giessen.de/baeder.html, in German). There are also several lakes near Giessen for waterskiing and swimming in the summer (e.g. "*Dutenhofener See*" ▸ http://www.dutenhofenersee.de, or "*Heuchelheimer See*").

6.3.6 Child care

The Justus Liebig University supports graduating parents with a variety of different child care services. The Students Services' Family Service Office ("*Familienservicestelle*") is open to everyone, who has questions about graduating while raising a family. Parents-to-be and graduate students with children can obtain extensive information, practical tips and helpful advice in the following areas: financial support, availability of child care services, mealtimes and accommodation with children, exchanging views and making contact with other graduating student parents. You can drop in without an appointment during their office hours or make a private appointment.

Family Service Office

Ms Susanne Schreiber, Otto-Behaghel-Str. 25, 35394 Giessen
✉ familienservice@studwerk.uni-giessen.de
☎ 0641 / 40008 166
Office Hours: Mon – Fri 12:00 – 14:30

The Family Service Office provides for student parents, beginning their studies at JLU, a **welcome package**. It contains brochures, a drawing pad, pencils and € 50. If you are already enrolled as a graduate student at JLU and have a new born child, a similar package is available to you.

Regular day care

There are four nurseries either run by the Student Services or private initiatives that provide places specifically for graduate parents. For example, in the local nursery *"Schlangenzahl"*, 20 spots are reserved for children of students and employees of the university (see ▸ http://bit.ly/Schlangenzahl). The nursery *"KIWI"* provides another 20 places for children of students between three months up to three years of age. For more information about applications and the concept, please see: ▸ http://is.gd/KitaKiwis. The student union and the non profit association *"Eltern helfen Eltern"* (parents helping parents) have also developed the *"Tagesmütternetzwerk"* (childminder network) which offers highly qualified and flexible low-cost childcare. The service includes the placement of a day nanny by *"Eltern helfen Eltern"* for students as well as doctoral students with children. After a period of familiarisation, the day nanny looks after your child for a maximum duration of two semesters and a total of 20 hours per week. This gives young parents the opportunity to continue and complete their studies and research. Please use the following link to learn more about the application process and prices: ▸ http://is.gd/DayNanny (German only).

Flexible day care

JLU also provides various flexible day care services. Graduate students, who, in addition to regular childcare, need a babysitter because they have to attend a course, are taking examinations or are seeking paid employment or because the regular childcare facilities are unavailable during a holiday period or outside opening hours, can obtain a babysitter allowance (*"Babysitterzuschuss"*) of € 5.50 an hour for a maximum of 81 hours per semester to help cover childcare costs. If a child is seriously ill and therefore cannot be catered for by the regular childcare facilities but needs to be looked after at home, graduating parents at JLU can also apply for an allowance of € 5.50 an hour to help cover the cost of a babysitter (emergency babysitter fund, *"Babysitter-Notfalltopf"*). The full-day holiday childcare service, JUSTUSkids, catering for children between the ages of 6 and 12 years, is available to graduate students and employees of the two universities in Giessen in the weeks when lectures and school holidays overlap. JUSTUSkids is available regularly in the Easter, autumn and summer holidays.

The Family Service Office also offers support for **mealtimes and accommodation with children**. Graduate students' children can eat free of charge at all Student Services canteens and cafeterias that serve a warm midday meal on presentation of a "Child-sized meals pass" (*"Kinderteller-Ausweis"*). The *"Unterhof"* student residence, block 10, in Giessen, has 24 low-rent family apartments for young families and double apartments for single parents.

The **"Studying and graduating with children" community** *("Netzwerk Studieren mit Kind")* organizes regular information events in semester time. No charge is made for attending the events, which are a way of obtaining information about all services provided by Student Services and its cooperation partners. External speakers (e.g. from the *German Child Protection Agency* or *pro familia*) give presentations and student as well as graduate parents have an opportunity to get to know each other and to exchange views and helpful tips. Children are warmly welcome at all events and childcare is free of charge. The "Studying and graduating with children" community's email mailing list ensures that you are kept up to date with all key information and receive invitations to events for graduating parents. If you would like to be added to the mailing list, simply send an

email to ▸ ✉ *familienservice@studwerk.uni-giessen.de* (please note: this newsletter will be provided mostly in German. If you need a translation, contact the newsletter's sender or the GGL Office).

In case, you're coming from outside the EU, there might be some extra regularities, you have to consider. The Family Service Office will take this into consideration when you apply for their different services. For more information on the various child care services, please take a look here ▸ *http://is.gd/FamSO* and here ▸ *http://www.kind-und-studium.de*.

> **NOTE**
> You must be **enrolled at JLU** as a graduate student to make use of its services for student parents. Otherwise, you are not entitled to these benefits.

EXTRAMURAL SUPPORT

The association **"*Eltern helfen Eltern*" (parents helping parents)** not only offers a childminder network in cooperation with the two universities in Giessen (see above), but also has a pool of childminders and babysitters at their disposal. If you need a childminder at a regular basis or a babysitter for single occasions, or would like to get some information and advice about that, you can contact them. Additionally, they offer various other services. In the open Parent Child Café, mothers or fathers can make new acquaintances in a relaxed atmosphere. Small children get into contact with other children of the same age and find new playmates. Two times a week in the morning, there is a mini kindergarten for children from one to three years. Once a week, there is an English playgroup, particularly for families with English-speaking children. Twice a month, they offer a meeting for single parents who would like to get into contact with other single parents. They also provide a meeting for families with black and binational children once a month to exchange, strengthen children against racism and plan activities. The project "*Hallo Welt*" (Hello World) supports parents of newborns and accompanies them until their third year of life. In their *Hello World Café*, mothers or fathers can meet other parents with their babies and enjoy breakfast together. Besides these different opportunities for getting into contact with other parents and children, "*Eltern helfen Eltern*" not only organizes a bazar for children's clothes and toys, but also a series of talks in which a broad range of family, children, parenting and health issues are addressed.

Eltern helfen Eltern
Rooseveltstr. 3
35394 Giessen
✉ info@ehe-giessen.de
☎ 0641 / 333 30
▸ *http://www.ehe-giessen.de*
Office Hours: Mon – Fri 9:00 – 12:00

Besides the association "*Eltern helfen Eltern*" for the city and county of Giessen, the social welfare organization **"Generationenbrücke Linden" (Generation Bridge Linden)** offers the placing of babysitters, usually teenagers and so called god-grandparents for the city of Linden. God-grandparents are no substitute for a nanny and are mainly available during the day when the babysitters are at school. They generally offer child care (especially in emergencies like visits to the doctor etc.), homework done under supervision and support at housekeeping, shopping or visits to authorities. Please note that they usually communicate in German.

Generationenbrücke Linden

Elisabeth-Schwarzhaupt-Str. 5
35440 Linden
✉ info@generationenbruecke-linden.de
☎ 06403 / 96 90 364
▸ http://is.gd/GenBr
Office Hours: Mon – Fri 9:00 – 12:00

6.3.7 Gender equality measures

The JLU has one of the highest proportions of female students of all German universities. The university sees this as both an opportunity and a challenge to energetically promote an equal-opportunity policy and the integration of women into academia.

Therefore, the Justus Liebig University has a team of women's representatives to ensure that women are provided with equal opportunities. Along with the goal of making a scientific career more attractive, the focus is on overcoming career hindrances. According to the *Hessian Equal Rights Law (HGIG)*, at least half of all open positions must be filled by women provided there are qualified applicants. There are women's representatives from every faculty. Check yours here:
▸ http://is.gd/WomenRepresent

Another initiative in this field is a **university-wide competition** to support pilot projects with € 75 000 devoted annually to foster equal opportunities. From 2010 until 2014, the GGL won two grants worth € 45 000 for the projects "Women in the Life Sciences" and "Perspectives". Both were focused on guest lectures with outstanding female researchers and a training programme for promoting social and management skills. We encourage female doctoral scientists to participate. For more information see chapter 7.6 and 6.4.

Furthermore, the JLU provides **scholarships for female researchers** at different levels of education (e.g. the "*Margarete Bieber Programme"* for postdoc stipends and the "*Doktorandinnenprogramm"* for female doctoral students, see:
▸ http://is.gd/ScholarshipsFemale).

In the life sciences, the JLU participates in the Hessian **mentoring project "*SciMento*"**. The Hessian Group Mentoring Programme SciMento assists female doctoral students as well as female postdocs in the natural and engineering sciences with the aim of better preparing them for a scientific career. Therefore, female scientists are given the opportunity to strengthen their personal, strategic and professional skills through career workshops, the exchange of experience between mentor and mentees and professional networking. Further information: ▸ http://www.scimento.de

The two-year programme starts in October every year. The deadline for applications is in April or May of the same year. Interested female scientists can apply for admission to the two-year programme at the following website:
▸ http://www.scimento.de/en/apply-as-mentee

Another mentoring programme for female scientists and students in the life sciences is the **"*Mentorinnen Netzwerk*"** (Female Mentor Network). This programme includes personal coaching of female students, graduates and postdocs by experienced women in science and business-related fields. This training and assistance support the enhancement of professional and personal skills and helps find solutions for specific problems in studies and the workforce.

If you are interested in becoming a member of the Mentorinnen Netzwerk, please contact Marion Oberschelp, the representative of the Mentorinnen Netzwerk at the JLU, and check the website: ▸ *http://www.mentorinnennetzwerk.de*

CONTACT PERSON FOR SCIMENTO AND MENTORINNEN NETZWERK AT THE JLU:

Ms Marion Oberschelp, JLU's gender equality officer
Goethestraße 58
35390 Giessen
☎ 0641 / 99 12050
Fax: 0641 / 99 12059
✉ Marion.Oberschelp@admin.uni-giessen.de

6.3.8 Centre for Competence Development (ZfbK)

The Centre for Competence Development *(Zentrum für fremdsprachliche und berufsfeldorientiere Kompetenzen – ZfbK)* encompasses five units (a language centre, a unit for professional and interdisciplinary skills, a career centre, an alumni service and a teaching centre), which are committed to assisting students and doctoral students in their academic lives, ultimately preparing them for a successful future career. Although the offer for doctoral students is restricted, you have a good chance to participate in lectures, classes and seminars. Note that for most courses except for language courses a good command of the German language is required.

FORUM LANGUAGES & CULTURES (*Forum Sprachen & Kulturen*)

This is the place to go if you want to improve your knowledge of foreign languages and develop further intercultural competences. Not only can you participate in language courses but also have the opportunity to take language tests whenever you need a certificate for a stay abroad. The language courses offered by the ZfbK also include specialised courses, such as legal English.

▸ *http://is.gd/ZfbKLanguages*

PROFESSIONAL AND INTERDISCIPLINARY SKILLS (*Außerfachliche Kompetenzen – AfK*)

The AfK unit offers courses and hands-on workshops which assist you in developing your personal skills in numerous areas ranging from computer literacy via rhetoric to management skills. They also include special skills seminars for the life sciences (PowerPoint, SPSS, creation of scientific posters).

Additionally, academic writing for lecturers and students as well as individual writing advice is provided. To be able to participate, you need to register via Stud.IP or FlexNow at the beginning of each semester.

▸ *http://is.gd/PROFIS*

> **NOTE**
> The GGL co-operates with the *ZfbK* especially for courses which are **held in English**, such as didactics and academic writing.

TEACHING CENTRE (*Hochschuldidaktik*)

The Teaching Centre of the *ZfbK* offers professional training for lecturers and professors to improve their didactic competences and support the implementation of innovative teaching concepts. Apart from courses and workshops, the Teaching Centre also offers individual support.

▸ *http://is.gd/Didactics*

Career Centre Plus

The Career Centre Plus serves as an interface between the university and the job market. In lectures, workshops and individual consultations during office hours (English and German), you learn everything about where to find vacancies, how to optimise your application and to succeed in a job interview. An online bulletin board helps you to find interesting job offers.

▸ http://is.gd/CareerCentre

Alumni Service

Stay in touch with your university and your fellow students and expand your career network using the Alumni Service. Once registered, your university will keep you up to date in a newsletter and you will receive invitations for interesting events.

▸ http://is.gd/AlumniService

CONTACT

Zentrum für fremdsprachliche und berufsfeldorientiere Kompetenzen (ZfbK)
Karl-Glöckner-Str. 5A
35394 Giessen
☎ 0641 / 98 442121
Office Hours: Mon – Thu 8:00 – 16:00, Fri 8:00 – 15:00

▸ http://is.gd/ZentrumfbK


GGL
International Giessen
Graduate Centre for the Life Sciences

7 YOUR DOCTORATE AT THE GIESSEN GRADUATE CENTRE FOR THE LIFE SCIENCES (GGL)

At the University of Giessen, there are three separate graduate centres – one for the humanities, one for law, business and social sciences and one for the life sciences. The Giessen Graduate Centre for the Life Sciences (GGL) was founded in 2007 to provide an interdisciplinary, structured doctoral programme for all life science disciplines at the JLU in the fields of Human and Dental Medicine (FB 11); Veterinary Medicine (FB10); Psychology and Sport Sciences (FB06); Biology and Chemistry (FB08); and Nutritional, Agricultural and Environmental Sciences (FB 09).

The GGL offers a three-year all English curriculum (six semesters) consisting of a Scientific Programme and the Doctoral Development Programme in addition to your own research project under the supervision of your thesis advisory committee.

7.1 SCIENTIFIC PROGRAMME AND RESEARCH SECTIONS

The Scientific Programme is organised in nine research sections, promoting the scientific expertise of the Justus Liebig University Giessen and the interdisciplinarity in current topics in the life sciences.

When admitted, you will choose your research section as your scientific home base. The sections offer seminars, lectures by invited renowned scientists and practical courses tailored to your research topic. They also constitute a platform where you can meet fellow junior researchers working on related topics and gain access to scientific expertise beyond your own team of supervisors. In order to broaden your scientific horizons, all GGL members have free access to the programmes of all of the other sections.

7.1.1 Section 1: Nutrition and Metabolism

Speaker: Silvia Rudloff, Professor of Nutritional Sciences

This section is focused on translational research of the human food chain, from food production and human nutrition to physiology and metabolic diseases. Current research includes studies to investigate the development and functionality of organ systems, such as the gastrointestinal tract, pancreas and skeletal system, as well as metabolic aspects in health and disease. With experts in agricultural, nutritional, veterinary and medical sciences, this section is highly interdisciplinary. It aims to develop approaches that span from basic research to innovations in diagnostics and in preventive and therapeutic measures.

7.1.2 Section 2: Infection and Immunity

Speaker: Trinad Chakraborty, Professor of Medical Microbiology

This section is comprised of highly active research groups engaged in immunology, bacteriology, virology and parasitology affiliated with the Faculties of Biology, Medicine and Veterinary Medicine. The focus is on the molecular pathogenesis of infectious diseases of man and livestock as well as on disorders of the immune system. Aspects of innate and adaptive immunity, replication and invasion of pathogens, gene

expression induced by inflammatory triggers in the host and development of new detection methods for infections are the main topics of this section. Doctoral researchers have the possibility to study molecular mechanisms within the exciting field of infection biology that are highly relevant for fundamental and applied science.

7.1.3 Section 3: Heart, Lung and Blood Vessels

Speaker: Klaus T. Preissner, Professor of Biochemistry

One focal point of research and education in this section is provided by the International Graduate Programme "*Molecular Biology and Medicine of the Lung*" *(MBML)*, in which many young scientists investigate the molecular physiology of the lung at the interface of basic sciences and clinical medicine. Particular emphasis is put on the discovery of pathogenic mechanisms in the respiratory system and respective new therapies for intervention in idiopathic pulmonary fibrosis, pulmonary hypertension and other diseases. A second major focus is represented by the International Research Training Group "*Protecting the Heart from Ischemia*" *(PROMISE)*, which is centred around pathomechanisms of ischemic heart disease, the most eminent multifaceted cause of death in industrialised countries. Research projects address the underlying molecular processes leading to coronary vessel disease, myocardial cell injury by ischemia and reperfusion and strategies for tissue regeneration.

7.1.4 Section 4: Protein and Nucleic Acid Interactions

Speaker: Elena Evguenieva-Hackenberg, Doctor of Micro and Molecular Biology

Research in this section focuses on interactions of nucleic acids and proteins involved in regulatory mechanisms. Interactions of DNA, RNA and proteins are investigated in a range of bacterial, viral and plant systems, as well as in the human system with relevant medical applications. A hub for doctoral education is the International Research Training Group "*Enzymes and Multienzyme Complexes acting on Nucleic Acids*" where all aspects of nucleic acid metabolism – in particular restriction and modification, replication, repair, transcription, RNA processing and translation – are studied.

7.1.5 Section 5: Neurosciences

Speaker: Gebhard Sammer, Professor of Psychology

Research in this section is driven by faculty members with research interests in neuroscience from many departments, including clinical medicine, psychology and veterinary medicine. It includes a broad range of topics from molecular mechanisms of neural information processing to neurosurgery and neuropsychology. Overarching research areas are cerebrovascular disease, neuroimmunology and cognitive neurosciences, specifically pain, the interaction between the immune system and the brain and the neuronal basis of cognition and emotion.

7.1.6 Section 6: Reproduction in Man and Animals

Speaker: Ralf Middendorff, Professor of Anatomy and Cell Biology

Male reproduction is the main topic of this research section, dealing specifically with male factor infertility due to impaired spermatogenesis investigating the possible role of testicular structures and pathological mechanisms in infertility. Further research work is done in the areas of female fertility and hormonal regulation in livestock. Many of the research projects in this section consist of fundamental experimental

work on germ cell differentiation and hormonal control as well as clinical aspects of the pathogenesis of infertility.

7.1.7 Section 7: Bioresources and Biotechnology

Speaker: Marc F. Schetelig, Doctor of Science

This section mediates the crosstalk between basic and applied sciences. The curriculum focuses on the application of advanced technologies in biochemistry, molecular and cell biology, biotechnology, drug discovery and preclinical research including target screening of novel compounds against human pathogens. Emphasis is also put on the investigation of molecular responses of microbes, plants, animals and humans to environmental and pharmacological stressors. Within the section, the focus group Insect Biotechnology works towards the identification of new lead structures from insects and the establishment of new infection models for applications in medicine, development of products and technologies for modern pesticides and new biosensors and identification of new enzymes for industrial production processes.

7.1.8 Section 8: Molecular Interactions at Natural Interfaces

Speaker: Siegfried Schindler, Professor of Inorganic and Analytical Chemistry

Interactions of natural products and synthetic molecules at biologically relevant interfaces are the main topic of this section. This includes the analysis, recognition and modulation of cell surface interactions and the use of model systems for enzymatic systems and metalloproteins. Likewise, natural products, enzymes or biopolymers, such as lignocellulose as agents and raw materials for new technologies, are investigated. In addition, man-made materials, involving nanostructures and implants, are synthesized, analyzed and their applications are studied.

7.1.9 Section 9: Marine Sciences

Speaker: Thomas Wilke, Professor of Animal Ecology & Systematics

The associated international section *"Marine Sciences"* largely focuses on bringing together Ph.D. students and faculties from Germany and abroad with courses being offered both at JLU and in partner countries. Focal points of this section are (I) biodiversity and ecosystem function of coastal environments, (II) range dynamics and live history of key marine species and (III) coastal ecosystem bio-resources. Emphasis is put on cross- and interdisciplinary research and training at the interface of marine biology, marine chemistry, oceanography and marine geology, modelling, bioinformatics, and socio-economy. This section is affiliated with the DAAD Center of Excellence in the Marine Sciences (CEMarin) in Santa Marta, Colombia.

7.1.10 Section 10: Ecology and Global Change

Speaker: Lutz Breuer, Professor of Landscape, Water & Biogeochemical Cycles

Interaction of global change and ecological feedbacks are manifold and complex. They include, loss of biodiversity, change of carbon and nitrogen turnover processes in soils causing altered trace gas emission patterns, and altered water resources which are rapidly diminishing in some areas while other areas are increasingly prone to floods. The curriculum accounts for the multidisciplinarity required to study and improve our understanding of the intrinsic complexity. Experts from agriculture, biology, environmental sciences and geography contribute to the broad perspective needed to investigate the interactions on a mechanistic level.

Each of the sections provides a schedule of research seminars and practical courses. For a detailed overview of the research section programme, please access:
▸ http://www.uni-giessen.de/ggl/sections and browse for the section most interesting to you. For a daily updated calendar of all teaching events in the scientific programme, please go to the GGL Study Calendar at:
▸ http://www.uni-giessen.de/ggl/curriculum/ggl-study-calendar

7.2 Doctoral Development Programme (DDP)

The DDP is designed to accompany you through your doctoral studies and prepare you for your future career. For instance, courses from basic training in self-organisation and in using resources available at the university to workshops in commercialising research results for advanced members are offered.

Although the DDP is structured to support your progress from start to finish, we believe that you should have a choice in what support you need depending on your own skills, aims and usually busy schedules. Therefore, you can choose the courses or workshops that are most relevant to your personal needs in the current stage of your doctoral research. For a detailed overview of all courses offered for doctoral candidates in the GGL, please check: ▸ http://bit.ly/DDPCurr

For a daily updated calendar of all teaching events in the doctoral development programme, please go to the GGL Study Calendar at:
▸ http://www.uni-giessen.de/ggl/curriculum/ggl-study-calendar

7.3 Progress Assessments and Reports

Reports on the progress of your doctoral thesis are important milestones ensuring that your work is progressing in the right direction and that you do not receive feedback only from your immediate work team. Therefore, annual section retreats, where you will have the chance to report on the progress of your own research work and receive valuable advice from your fellow doctoral researchers and senior staff, are also integrated into the GGL Curriculum. Furthermore, GGL members report their progress once a year during the GGL Annual Conference.

Organised by GGL students and assisted by the GGL team, the GGL Annual Conference creates a platform for doctoral researchers to present the results of the projects, they have been working on while internationally renowned guest speakers set the scene for the presentation programme of each research section. During the two-day programme, you will present posters or talks depending on the progress of your research work – a great chance to get expert feedback on progress made. The presentation of this multitude of recent results usually creates a productive atmosphere for new ideas and community and is an inspiring highlight of GGL life.

7.4 Course Load in the GGL and Study Portfolio

In order to keep track of your personal training schedule, you will receive a personal study portfolio where you document all parts of the GGL curriculum that will be submitted to the GGL Office in order to prepare your GGL graduation certificate. In the portfolio, the teaching load is calculated in credits which were omitted here for the sake of simplicity (for an explanation of the credit system, see p. 1 – 2 of the GGL study portfolio).

To best accommodate the needs and interests of doctoral researchers in all life science disciplines of the JLU and at all stages of a doctorate, almost all teaching events of the GGL can be chosen freely. Only the total amount of time that you should spend on certain parts of the curriculum is fixed.

WITHIN THE 3-YEAR CURRICULUM, YOU NEED TO SPEND A MINIMUM OF:

- **72** teaching units of 45 minutes in scientific seminars of the sections
- **72** teaching units of 45 minutes each in the Doctoral Development Programme
- **10** days in practical courses or practical training in partner labs
- **10** days in lab rotations at other institutions
- **6** days at the GGL Annual Conferences
- **3** days at the research retreat of your section

If you attend external seminars and conferences, they can be counted in part towards your teaching load after checking the quality with the GGL Office. Also, your personal support for the GGL, such as by serving on the GGL Council or by organising the GGL Annual Conference, is counted toward your course load, since you are acquiring management and leadership skills in a very practical way.

If you are concerned that you will not be able to complete everything, you can just ask experienced GGL Alumni, and they will tell you that most members easily complete this and even go beyond (as a member of a research training group, you receive credit points for most activities organised by your RTG).

7.5 WOMEN IN THE LIFE SCIENCES

Currently, significantly fewer female researchers progress to top positions in academia and industrial companies than there are female students. Funded by special grant money from the JLU, our Women in the Life Sciences Programme (WLS) offers support to young female researchers in order to encourage them to pursue a career in the life sciences.

The WLS workshop programme offers training in presentation, self-marketing, networking, leadership, and negotiation skills. All workshops are designed with an integrated gender perspective and male and female participants not only improve these professional skills, but also broaden gender awareness at the same time. For all of our events, free child care is offered to doctoral students with children. Furthermore, the WLS supports young female researchers in building their own networks and writing their first grants. More information available at our website: ▸ *http://bit.ly/wlsggl*

7.6 GGL STRUCTURES

The GGL is led by the **Board of Directors,** consisting of the director (Prof. Dr. med. Eveline Baumgart-Vogt, elected in 2009, re-elected 2011 and 2013) and two vice-directors representing three of the five member faculties.

This board is supported by the **GGL Council** which makes decisions on the implementation of new sections and bodies of the GGL and changes to the GGL statutes. The council consists of two elected senior scientists from each member faculty as well as one doctoral student member from each faculty. The doctoral candidates elect rep-

resentatives from the five faculties and their substitutes for the GGL Council who address issues concerning the programme of the sections with the council, section representatives and the GGL Office. Through this mechanism, you can have an impact on the future of the GGL either by communicating your needs and suggestions to your elected representatives or by becoming a representative yourself.

At least once a year, the **General Assembly** meets and discusses important decisions concerning the development of the GGL. Also, there you may present your own opinions and discuss your concerns openly with the GGL leadership.

For each of the mentioned **research sections**, supervisors elect **section speakers** who coordinate the scientific programme of the sections and their substitutes. If you wish to address issues concerning the content and quality of your section, you can approach these section speakers.

The **Study Committee** is the GGL body that meets prior to the beginning of each semester in order to review new applications and ensure that all requirements for a successful supervision and thesis work for both the supervisor and the doctoral student have been fulfilled. It also controls the quality of the Scientific Programme prepared by the sections and the Doctoral Development Programme.

The **GGL Office** plays a central role in the organisation and management of the GGL with the managing director (Dr. Lorna Lück) supported by the administrative staff and student assistants.

7.7 GGL SUPPORT FOR YOU

Among many other tasks, the GGL supports its members with the following activities:

- Is responsible for the admission process including the call for applications, support for applicants and supervisors and screening of applications. Even at that early stage, you can receive important advice concerning your desired degree and the underlying rules and regulations (see chapter 3.10).
- Keeps records for all doctoral students including your personal record, attendance at curriculum events and prepares graduation certificates, once you have completed your curriculum.
- Issues study portfolios specifically developed to guide you through your studies and monitors its effective use. In case, you are not sure which courses or sections to choose or how to handle your study load, you will find advice at the GGL Office.
- Collects information on the curriculum of each section and publishes all training events in the GGL **Study Calendar** (http://bit.ly/GGLscal). The GGL serves as a link between the organisers of the seminars, invited talks and practical courses and the students and notifies members about changes, such as cancellations and additional invited lectures. Through the GGL Study Calendar, the current scientific programme of all sections is accessible at any time making it possible to choose from a broad scientific programme beyond the scope of your own work.

- Plans the workshops of the Doctoral Development Programme (DDP), recruits trainers and provides the infrastructure and personal support during the workshops, which are also listed in the Study Calendar.

> **NOTE**
> In case, you are not (yet) a GGL member, you will not be able to participate in DDP courses.

- Raises funds geared specifically towards graduate education. Thus, providing you with new opportunities, such as offers through "*GGL International*", stibet teaching assistantships or the Women in the Life Sciences Programme.
- Plans and organises plenary events, such as the GGL Annual Conference and Career Day or the graduation ceremony, which are highlights in the GGL Calendar.
- Provides advise in case of conflict or crisis.

All members of the GGL management team have their own responsibilities such as applications, the Study Calendar or the Doctoral Development Programme and are, therefore, your first point of contact if you experience difficulties with these aspects. Check the GGL website at ▸ *http://www.uni-giessen.de/ggl* to find the person responsible and make an appointment with them to get the answer or help, you need without delay.


GGL
International Giessen
Graduate Centre for the Life Sciences

8 YOUR RESEARCH ENVIRONMENT

8.1 YOUR SUPERVISORY TEAM

8.1.1 Your supervisor

Your supervisor plays a key role in your thesis advisory committee. He or she usually provides not only a research project, lab space, consumables and funding for you personally, but is also your first contact for scientific and personal guidance. In the traditional system (chapter 2.1.4), your supervisor is your only contact person, while in the structured system, you have an entire thesis advisory committee, who is there to support you.

> **NOTE**
> As a doctoral candidate, you are expected to work independently after supervision. Your supervisor is not there to micromanage you.

The key to a successful relationship with your supervisor is **effective communication**. You do not have to like your supervisor personally, but you should find a common language and respect her or his position. There might be a period of adjustment during which you and your supervisor have to find out how the other one thinks, but do not forget that your supervisor is a human being and that misunderstandings may occur. Find out how much supervision is best for you and communicate your needs. One student might only need a more intense outline at the beginning and may work more independently later. Another, on the other hand, might need regular requests to work effectively or constant encouragement.

It is your supervisor's duty to provide you with support and guidance and see you regularly. At the beginning of your thesis, you will need a lot of advice and intense supervision to function more independently in the middle, whereas in the end phase, you will need more advice again to finish your thesis. Please be aware that specifically when you are writing your thesis, there will be some tension because by then, nearly everybody is working under time pressure. That is completely normal, so do not let that ruin your good relationship with your supervisor that will continue beyond graduation day, rather feel empowered to address problems as they arise.

Apart from you, a lot of other students, colleagues and organisational bodies are competing for your supervisor's time. Do not take it personally if your supervisor does not find enough time for you, but communicate if you are unhappy with your supervision to give her or him the opportunity to change things.

8.1.2 Your postdocs

If your supervisor is a renowned expert in his or her field, he or she will be especially busy and seldom available for you. In that case, the day-to-day supervision duties are often delegated to a postdoc or more experienced doctoral student. Formally, that person is not yet allowed to supervise you and will not be named on the front page of your dissertation, but you will owe them a lot of gratitude in your acknowledgements due to their methodological expertise. In such a work model, you might benefit from your supervisor's network and reputation as well as receive the daily supervision, you require. However, all of the big decisions should be made together with your supervisor, and you should meet him or her at least once a month.

8.1.3 Your co-supervisor and your thesis advisory committee

In the GGL and in other structured doctoral programmes, you will be supervised by a thesis advisory committee consisting of your supervisor, at least one co-supervisor and possibly a third supervisor or mentor. In the GGL, it is a prerequisite that you find a co-supervisor from a **different faculty** of the JLU or from a different university. Your co-supervisor will be able to see your research from a different angle, provide additional methodological training and evaluate your progress possibly more objectively because he or she is not an immediate member of your lab team. Therefore, it is also the co-supervisor's role to act as an independent third person who can mediate in case of conflict. You should make sure that you meet your co-supervisor once a semester and provide him or her with a progress report of your work. If you invite him or her to the section retreat and GGL Annual Conference (chapter 7.3), you can even integrate these meetings into your reporting cycle.

Specifically if you do your doctorate in cooperation with a company or public institution, you might have a third supervisor representing that body. They will not only add their expertise to your advisory committee, but will also make sure that the expectations of their company, who might be funding or co-funding your work, are being met. On the other hand, an industry supervisor will give you insight into the decision-making process in companies and might open doors for your future career. In any case, if you do your doctoral work in collaboration with and funded by a company, the conditions of your work, especially concerning the publication of your findings, should be fixed in a contract before you start producing results. Your mentor also plays a similar role, not necessarily advising you on your research work, but providing input in case you have specific career goals that you wish to achieve.

8.1.4 Other important colleagues

Your thesis advisory committee is the core of the network that you will build around your doctoral project. There are several other groups that will be important for you during your doctorate that you should know and value as part of your support system[13].

- **Technicians** usually are the most experienced colleagues concerning techniques and knowing where to find the things, you need. In addition, they will assist you in case larger experiments are performed. Do not underestimate their support.
- **Other doctoral researchers** are a very important source of support. They will understand your needs and problems best and, thus, it is easiest to find a common language. Your fellow doctoral students will be your foundation from which your network will grow into the future. It is always easier to talk to your equals, so they might be your first contact in times of crisis. Be aware that this is also your own role for others.
- **Trainers and advisors** (in particular by International Office, the Centre for Competence Development (ZfbK), mentoring schemes or the GGL, see chapter 7.2) will help you develop your skills and learn new things. It is worth

[13] Cf. www.vitae.ac.uk (direct link: http://is.gd/KeyRelationships)

finding out what other training and support systems your institution and the JLU offer.

- **Librarians** are experts in information management and will help you with your literature survey if the article, you need, is not available online or at your institute (see chapter 6.3.3).

8.1.5 Supervisory meetings

Normally, group leaders are quite busy with administration, meetings and presentations at conferences etc., and they have more than one young scientist to supervise. This makes it unlikely that individual discussions will take place on a very frequent basis, and you cannot expect that you or your supervisor will remember every detail of the previous meeting. To avoid misunderstandings, it is helpful to write a protocol of your meetings and send it to your supervisor as a reminder before you meet again. Additionally, you should have the protocols signed. The GGL portfolio provides you with several pages that will help you to summarise these milestone meeting together with your supervisor and co-supervisor. You should take care specifically to document actions agreed in these meetings and fix the dates for the next meeting. During or after the first meeting, you should formulate and sign a Supervision Agreement (see chapter 8.1.7).

8.1.6 Best practise for supervisory meetings

In order to get the most out of your supervision, you should take control of the process using some of the following suggestions.

- **Agree on key issues and work standards at the start of the project**. Spend some time discussing issues like degree regulations, overall time table, work ethics and safety procedures or authorship of papers (your GGL study portfolio will give you some ideas on the last page).
- **Initiate your supervisory meetings**. If your supervisor has not already disclosed meeting times, try to establish a regular cycle. Consider that your supervisor is very busy, so you might need to take the initiative in organising meetings.
- **Prepare an agenda and relevant input**. Think about what you want to achieve during the meeting. Prepare some input before each meeting to provide a focus. At the beginning, you might prepare a summary of what you have done. As the project develops, you will be able to bring datasets, analyses and drafts of articles or chapters of your thesis to the meeting.
- **Deal with feedback and criticism**. The purpose of this meeting is to improve your work: criticism should be constructive, aim at the content of your work and should contain advice on how to improve the outcome – it should never be personal or taken personally.
- **Address current problems openly**. Meeting with your supervisor is a good opportunity to discuss your problems, be they related to technical difficulties, missing resources, understanding an article or with the style and frequency of supervision. Supervisors usually are open to constructive suggestions as they are interested in you doing a good job.

- **Keep a record of your supervisory meetings**. During or as soon as possible after the meeting, you should note what you discussed. Write it down on paper, in a computer file or in your GGL portfolio. It might be helpful to send a copy to your supervisor, so you both will have access to the decisions and topics, you discussed, and avoid misunderstandings.

8.1.7 Supervision agreement

Together with your supervisor, you should formulate a Supervision Agreement during or after the first meeting. A Supervision Agreement is not intended to be a legally binding document, but it ensures that doctoral students have received, understood and accepted the expectations of their supervisor and also points out the duties of the supervisor. If you encounter problems with your supervisor, it might be helpful to have a signed document that you can refer to. If you are a member of a structured programme, Supervision Agreements are usually formalised, and there is at least one co-supervisor who might help.

A Supervision Agreement usually contains the following: name of doctoral student and supervisor/s; title of the doctoral thesis; rights and duties specifically concerning reporting, seminar attendance and presentations, courses or events; formalised feedback; publications; good scientific practise; conferences; travel; supply of infrastructure; financing (where applicable); teaching duties (where applicable) and a common agreement that both supervisor and doctoral candidate will sign.

For a very detailed example of the S.a., see the version issued by the International Research Training Group IRTG1384 in Appendix 4.

8.2 YOUR LAB

8.2.1 Teamwork

As a doctoral student of the life sciences, you will be a member of your supervisor's or employer's lab.

Each lab is different, depending on the discipline, research, topic, size of staff, funding available, preferences of the supervisor and many other factors. What all labs in the life sciences have in common is that, even if you are working on your individual project, you will always work in a team. Your research project would not work if you did not have colleagues, who look after certain aspects, such as ordering supplies, maintaining the equipment, preparing schedules for the use of certain equipment, training you in lab safety and the techniques, you need to use, processing the payment of your salary or stipend, making sure that new projects are being applied for and many other aspects (also see chapter 8.1.4).

Therefore, you should be aware of who the other players in your team are, what they do and what impact your own behaviour has when you work in that team. In the beginning, you will widely depend on and be supported by that team, but soon, you will be able (and expected) to contribute. Your lab also will be your home base for scientific networking. Normally, you will attend lab meetings and institute seminars to which the lab belongs, so you will have the opportunity to discuss your work with your colleagues and learn what they are working on. During your interaction with that team, you need to be aware of the needs and rights of other researchers and staff, who might

somehow be connected with your work, such as personal safety, access to resources, confidentiality, ethical issues, copyright, ownership of data and the requirements of data protection. Make sure that you do not interfere with these rights.

8.2.2 Teaching

The most effective way to learn something is by teaching it to others. In some labs, it is quite common for doctoral students to participate in teaching undergraduate or graduate students (in courses or on an individual basis). This will develop your teaching skills and broaden your knowledge. To some degree, it is your duty to teach for your department or group, but you have to be careful not to be exploited and assigned a teaching load that will keep you from working on your thesis for too long. Usually, this opportunity exists for German-speaking doctoral students, but the GGL also facilitates teaching assistantships for international members who can teach in English within the GGL curriculum funded by the DAAD.

8.3 Rules and Regulations

When you start your work, you will not just begin your experiments after you have the required knowledge of the current state of your field and made a plan. Working in a lab involves a variety of regulations and safety measures. As soon as one of these regulations applies, there will be at least one senior staff member in your lab responsible for training and keeping you up-to-date on these regulations. Usually you must be updated once a year and sign a document confirming this. Which special safety regulations apply depends on your project, i.e. whether you work with genetically modified organisms, radioactive substances and/or animals. There is a list of the most important ones below. If you notice that any are missing, and because most regulations are available in German only, make sure you know who is responsible in your lab.

8.3.1 Safety first

There should be a safety handbook available in your lab by the DGUV ("*Deutsche Gesetzliche Unfallversicherung*") called "*Working Safely in Laboratories*". You can access an online copy here: ▸ http://bit.ly/GGLSafety
Most importantly, follow the "*Bible*", the "*Laboratory Biosafety Manual*", from the World Health Organisation at this link: ▸ http://bit.ly/WHOsafe. You can also find this manual in ten different languages.

Before you start working, an experienced lab member is required to brief you on lab safety, and you will have to sign a document stating this.

Basic rules, such as wearing your lab coat and close-toed, sturdy shoes; closing doors; knowing where your safety glasses are; having the right kind of gloves and not eating and drinking, apply in all labs. It is also very important to know where the first aid kit, eye shower and fire extinguisher are situated and where you are supposed to go in case of a fire alarm (which happens regularly in the chemistry building, for instance). You do not have to wear your protective glasses all the time, but consider when you would not want to have something splatter into your eyes (toxins, irritants, hot liquids or bits of frozen samples).

Even if you work with harmless materials, accidents and injuries can always occur. That's why it is forbidden to work in a lab alone.

You can find more information at the homepage of the Federal Institute for Occupational Safety and Health ("*Bundesanstalt für Arbeitsschutz und Arbeitsmedizin*"): ▸ http://bit.ly/gglBAuA

Here are the university's pages to the topic (in German): ▸ http://bit.ly/JLUoccsafe

Do not let all this scare you. If you work carefully and according to the rules, you should survive your doctoral thesis. All labs at the JLU are subject to external lab safety inspections. These are a good opportunity to tidy up, but, of course, you should attempt to maintain inspection standards at all times.

Every lab has to have at least one person responsible for first aid in case of injuries ("*Ersthelfer*", first responders) and one person responsible for training and updating you on safety regulations every year. To add to your personal training portfolio, you might want to attend courses concerning lab safety or become an "*Ersthelfer*".

8.3.2 Hazardous substances

Always know the properties of the chemicals, you work with and be familiar with the new safety labels that have recently been globally standardized.

See: ▸ http://bit.ly/SafetyLabels and ▸ http://bit.ly/JLULabels *(in German).*

It is advised that before you start your lab work, you go through all the chemicals and their properties that you plan to use. Some chemicals are very dangerous and you need to be aware of their toxicity before you perform any experiments. Usually, you use a fume hood when you handle these. This is regulated by the following law: Law of Protection from Hazardous Substances ("*Gesetz zum Schutz vor gefährlichen Stoffen*"): ▸ http://www.gesetze-im-internet.de/chemg

There's a detailed document about handling hazardous substances supplied by the Federal Institute for Occupational Safety and Health ("*Bundesanstalt für Arbeitsschutz und Arbeitsmedizin*"): ▸ http://bit.ly/HazMat

▸ Also see (in German): http://bit.ly/HazMat1 and ▸ http://bit.ly/HazMat2

Since it is easy to lose track of all the safety issues around chemicals and you might not be able to read all these German regulations, make sure, you know, who is in charge of safety training in your lab and ask them if you are not sure. Alternatively, you can also find detailed information about the hazardous substances from the MSDS sheet (Material Safety Data Sheet).

8.3.3 Radioactivity

If your work includes working with radioactive substances, you cannot just do that at your own workbench. There will be a specially equipped isotope lab which you are only allowed to enter after you have received the required safety instructions. You will have to be registered and receive a dosimeter every month to be worn all the time in the isotope lab. This will measure the amount of radiation, you are exposed to, and if your dosimeter value exceeds the permitted levels of radioactivity, you will be notified of the results. You will also be invited to a special medical examination. Working with radioactive material (like radioactively labelled nucleotides) is regulated by the following law: "*Verordnung über den Schutz vor Schäden durch ionisierende Strahlen*" (in German) ▸ http://bit.ly/Strahl

8.3.4 Genetic engineering and biosafety levels

In Germany, working with genetically modified organisms (genetic engineering) is regulated by the following law:

"*Verordnung über die Sicherheitsstufen und Sicherheitsmaßnahmen bei gentechnischen Arbeiten in gentechnischen Anlagen"* ("*Gentechniksicherheitsverordnung"*, in German). See: ▸ http://www.gesetze-im-internet.de/gentsv

This law defines biosafety levels (▸ http://bit.ly/BioSafeL) and requires that there should be a biosafety officer in any lab using any kind of genetic engineering, who will take care of initial training of new lab staff such as doctoral students.

It is quite likely that your lab will be **biosafety level 1** (BSL-1, German S1). BSL-1 means there are only organisms or agents allowed that aren't known to consistently cause disease in healthy adult humans and present a minimal potential hazard to laboratory personnel and the environment. Permitted organisms and agents include non-pathogenic *E.coli*, some cell cultures, non-infectious bacteria, yeasts, plants or animals. At this level, biosafety precautions involve gloves and facial protection, washing one's hands with anti-bacterial soap, washing all exposed surfaces of the lab with disinfectants, etc. All materials used for cell and/or bacteria cultures are decontaminated via autoclave. Laboratory personnel get specific training in the procedures conducted in the laboratory[14].

BSL-2 (S2) means that infectious organisms are allowed as long as the infections are not severe, there is a cure or vaccination available and no danger of propagation is to be expected (e.g. *Salmonella sp.*, Herpes virus, Influenza virus, HIV).

BSL-3 (S3) means that infectious organisms are allowed as long as there is a cure or vaccination available – even if danger of propagation is to be expected (e.g. *Bacillus anthracis*, Hepatitis A, B, C, D, E, and G virus, SARS coronavirus). There is only one BSL-3 lab in Giessen at the Institute for Medical Virology.

BSL-4 (S4) means working with highly dangerous infectious organisms against which no cure or vaccination have been developed (e.g. Ebola virus, Marburg virus). BSL-4 labs are extremely rare: there are less than 40 BSL-4 labs worldwide; only four in Germany – one of them at the University of Marburg.

To become a leader of a molecular biology lab, you have to be trained in secure working methods in genetic engineering facilities (*Fortbildungslehrgang "Sicherheit bei Arbeiten in gentechnischen Anlagen"* nach § 15 GenTSV). The university offers these courses regularly.

8.3.5 Animal experiments

As a doctoral student, you might also be involved in experiments with animals. These experiments are subject to a vast amount of rules and regulations, specifically the German animal protection law ("*Tierschutzgesetz"*, ▸ http://bit.ly/Tierschutz) or the European legislation (Directive 86/609/EEC on the protection of animals used for experimental and other scientific purposes). The German animal protection law is one of the most restrictive in the world, and no animal experiment can be performed without special approval by a committee with members including scientific experts and representatives of societies for animal protection. FELASA, the Federation of Laboratory Animal Science Associations (▸ http://www.felasa.eu), has translated these

[14] Cf. www.wikipedia.org (direct link: http://is.gd/Biosafety)

laws into a comprehensive set of practical guidelines and developed accredited training courses in laboratory animal science.

You are not allowed to work with living animals on your own without having completed appropriate training. In most cases, if your thesis work involves animal experiments, only your supervisor or postdoc will have the formal qualifications necessary to handle, treat or kill the animals. Your supervisor will perform the animal handling for you or will closely instruct you under his or her direct observation.

> **NOTE**
> **Never** handle living animals on your own without the knowledge and the permission of your supervisor!

If you are expected to handle animals yourself, the *"FELASA recommendations for the education and training of persons carrying out animal experiments (Category B)"* (http://bit.ly/FELASApdf) define your duties and you will have to take a FELASA accredited course.

AMONG THOSE DUTIES ARE:

- To be aware of European and national laws and guidelines relating to the conduct of experimental or other scientific procedures on animals.
- To be aware of and respect societal ethics in relation to animal research.
- To understand and respect the general rules of the animal facility where you are working.
- To understand the theoretical background of your tasks, so as to safeguard animal well-being and ensure the relevance of scientific findings.
- To be competent in handling and other techniques, you carry out.
- To be able to recognise pain and discomfort and to assess the welfare status of animals with which you are working[15].

If your research group carries out animal experiments, there will be an animal welfare officer in your team. This person, together with your supervisor, is your first contact, and they should advise you on the appropriate FELASA courses and help you register for them. Your supervisor must also instruct you concerning additional guidelines, such as for working with transgenic animals.

Animal welfare starts before the experiment, i.e. when the **experimental design** is being developed, since at that stage, you should plan for the minimum number of animals needed to obtain a scientifically sound result and choose handling methods that would cause a minimal amount of pain or other suffering to the animals.

In 1959, two English scientists, William Russell and Rex Burch, described a famous principle of three Rs (Reduction, Refinement, Replacement) which should serve as general guideline for all animal experiments:

Reduction: Consistent application of statistical procedures and exact experimental planning serve to reduce the number of animals.

[15] Cf. http://bit.ly/FELASApdf: Nevalaien, T., Donats, I., et al. FELASA recommendations for the education and training of persons carrying out animal experiments (Category B). Laboratory Animals. The Royal Society of Medicine Journals. (2000, 34). London: sagepublications (Bibliothekssystem der Universität Gießen), p. 229 – 235.

Refinement: The refinement of animal experiments has the aim of minimising the harmful effects on the animals from the studies[16].

Replacement: An experiment on animals shall not be performed if another scientifically satisfactory method of obtaining the result is reasonably and practically available[17].

The planning of an experimental design requires a lot of specific knowledge and experience. It may be part of your thesis to develop your own ideas for such a plan, including the number and specificity of the sacrificed animals, the time schedule, the scientific methods applied and the statistical analysis. The definitive experiment will have to be developed in cooperation with your supervisor. In many cases, permission by the veterinary department of the "*Giessener Regierungspräsidium"* must be applied for. If you are involved in this step, you might be able to learn how to fill in the paper work concerned and observe how the final experimental design is discussed with the animal welfare officer responsible for your institute or your clinical department, but it will always be your supervisor, who is responsible for the whole procedure, specifically the application for the permit.

8.3.6 Your lab book

Prescribed by several regulations, including those for BSL 1 labs, you are required to document every experiment in form of a lab book. The reason for that is that if something went wrong, there is documentation of all experiments, so the cause for any problem can be traced. Also, lab books are a source of information in cases of a dispute concerning your intellectual property rights in publications and patents. In a worst case scenario, it might be your lab book that proves that you have the right to be author on a paper. For that reason, the statute for good scientific practice of the JLU dictates that this documentation is kept for ten years. For patent issues, the lab book must be preserved for 30 years. Legally, the lab book belongs to the supervisor or the department head of the institute. Since the lab book must always be available in the lab for inspection, you are not even allowed to take it home with you for an update.

Lab books must be bound books (not loose paper sheets in a folder) with numbered pages, and you are not allowed to remove pages or erase experiments. If a mistake is in the lab book, you are obliged to cross it out. You have to write in non-erasable ink and not pencil.

Another purpose of the lab book is to record the original investigations so that future researchers can continue the experiments. Hence, keep in mind that you should write the lab book in a way that some other person can read and follow it. In your lab book, you note what you did: date, sample, recipe etc. (e.g. 10 µl of xy) and possibly a brief summary of the results. If you repeat an experiment, you can just refer to the previous date/page.

[16] Cf. www.biochem.mpg.de/755332/dfg-tierversuche-engl.pdf: Exner, C., Bode, H. J., et al. Animal Experiments in Research. Senate Commission on Animal Protection and Experimentation (eds.). DFG. (2007). Bonn: Lemmens Medien, p. 24.

[17] Cf. Russell, W. M. S., Burch, R. L. The Principles of Humane Experimental Technique. (1959). London: Methuen.

8.3.7 Good scientific practice

When you start working in the lab, you will have to sign a statement that says, you have read the university's statutes for good scientific practice ("*Satzung für die gute wissenschaftliche Praxis der Justus-Liebig-Universität*").

- German Version: *http://is.gd/SatzungGerman*
- English Version: *http://is.gd/StatutesEnglish*

In the GGL, all new members are handed a copy of this document in the German original plus the English translation for non-German-speaking doctoral students during their induction, but only the German version is legally binding in a court of law.

These statutes define the role of supervisors and doctoral students and other team members and set the rules for interactions in your scientific work environment, specifically for your publications, as the most important product of your work. In these statutes, you will also find lists of the rights and duties of supervisors and doctoral candidates. Specifically the regulations on handling and storing your data for ten years will influence your everyday work in the lab.

You should always be aware of these statutes because not observing them will have legal consequences and could prevent you from publishing your results or obtaining your doctoral degree.

The statutes for good scientific practice of the JLU are based on the "*Recommendations on Professional Self Regulation in Science*" (see: ▸ *http://bit.ly/DFGselfreg*) of the German Research Foundation (DFG) which contain 16 recommendations for research institutions and discusses the problems and ethics of the scientific community.

9 PLANNING YOUR DOCTORATE

9.1 GETTING STARTED

Most likely, you will develop your research plan together with your supervisor. Supervisors often already have a more or less detailed project plan, since in most cases, they had to write a full research proposal to get your position funded. These plans are quite profound where the science is concerned. In that case, make sure to turn this project plan into your own plan by breaking it down into your milestones and reserving time for your personal development concerning **both your scientific and professional skills**.

You might find it an extra burden having to plan first, but your personal project plan can be a powerful tool for using your limited time effectively, staying focused and having resources ready when you need them. Certainly, one can never plan whether an experiment will work out or not, but you can think about when your thesis should be finished and what milestones you have to pass along the way. Here are a few questions, you might want to ask yourself:

- When do you want to submit your thesis?
- When do you need to complete your statistical analysis to achieve that goal?
- When would be the best time to visit a partner lab to learn a technique essential to your own work or to make an important contact for your future career?
- When do the conferences take place (of your scientific society, the GGL, etc.) that you should attend, and what data do you need to have ready by then?
- When do you need to have mastered the lab techniques to run your experiments routinely?
- When do training courses take place that you need for your experiment/your career?
- When are certain essential resources (materials/facilities/equipment) available to you?
- When do you need to have your initial literature search finished in order to start your training/experimental work?

Through your overall plan, you will learn to formulate plans to meet short-term and long-term goals and deadlines under difficult circumstances and to discover the reasons for changing research plans and goals. Having an effective plan is one of the things that will enable you to complete your doctorate in time and with a minimum of stress, so it is worth investing time in planning and putting aside some regular time to review progress and amend your plan[18]. It is not a failure having to change a plan, but it would be a failure not to make adjustments required by e.g. changed circumstances.

9.2 INTEGRATING YOUR SCIENTIFIC TRAINING

For a doctorate in the life sciences, you should be fit in the basic lab techniques that are used in your "*home lab*". Over time, you will become an expert in your own project which also means that you will have to develop new skills that will be your

[18] Cf. www.vitae.ac.uk

capital when you enter the job market later. At some point, it might be important for you to be able to state that you are proficient in a certain technique even if you have trained in it only briefly. For training in new techniques, you need to reserve enough time for methods that will help you to perform your research, analyse it and later add to your personal portfolio. Learning a method in a different lab adds extra benefits because you can extend your personal network at the same time. For that reason, the GGL encourages taking part in practical training and lab rotations in partner labs in Germany and abroad. This will constitute another challenge to your planning and organisational skills because you usually need to plan in extra time and financial resources, find a target lab and convince your supervisor.

9.3 INTEGRATING YOUR PERSONAL CAREER DEVELOPMENT

Of course, your research project will take centre stage in your planning. But to make a good impression on future employers, it is not only important to know your science well but you also need additional professional skills such as communication, presentation and management skills that make you especially interesting for an employer. Your career does not start when you finish your doctorate. It is an on-going project that develops parallel to your research, so you should ensure that you are putting aside at least a couple of weeks spread throughout the year devoted to your personal career development.

By now, all structured doctoral programmes in Germany offer training in so called additional, transferable or soft skills and so does the GGL in the Doctoral Development Programme (chapter 7.2). When you plan to attend certain offers by the GGL or other organisations, your planning should be based on your own self-analysis and more than a list of courses to attend. Take your time, think about what you need now and long term and talk about it with your supervisor. Some supervisors want you to have the best education possible; others may treasure you basically as cheap labour. In any case, you should have good reasons in favour of the training, you wish to attend. Your supervisor knows best how to become a professor. If your career goal differs from that, you have to include additional information or expertise for your planning. Once you have completed your internal review, you should create a plan including the skills that you wish to develop and deadlines for completing different training activities.

9.4 SETTING GOALS AND MILESTONES

An important part of planning and managing your research project is setting clear and achievable goals. It is a good idea to first determine your overarching goals and then turn them into a time frame consisting of milestones and defined dates when you want to achieve them. As you and your project develop, you may have to amend your project goals or personal career objectives. When formulating your goals and milestones, try to keep the following criteria in mind:

Clarity: The goal or milestone has a specific meaning and focus and you can clearly measure when you have achieved the goal (e.g. the submission of a paper).

Time frame: You have defined the time when you should achieve that milestone or when you review the progress concerning a specific goal.

Realism: Set realistic goals. It is good to challenge yourself but you will lose your motivation if you try to do too much too fast. If you have to amend your goals, use this experience to improve your ability to plan and manage your time.

Advantage: The goals you are setting should be your own goals, fulfilling them should be of a personal advantage to you and your development (even if at the same time, you are contributing to the reputation of your supervisor's research group).

It is impossible to say how your doctorate will develop, as there are so many variations in personality, discipline and type of funding and research. However, there are typical activities and milestones that will occur in most doctorates:

- Completion of initial literature analysis
- Completion of initial methodology training
- Data collection (as a whole or in defined stages)
- Analysis of data (as a whole or in defined stages)
- Completion of reports, publications and thesis chapters
- Attendance of conferences and other events (specific conferences and defined contributions)
- Teaching loads and periods
- Research periods abroad
- Milestone meetings with the thesis advisory committee

As an example, we have adapted the "*Career Development Plan*" of IRTG1384 to include all aspects needed for planning your doctorate in Appendix 2: Example Project and Career Development Plan.

Once you have designed your plan, you should share it with your supervisor. Only sharing and reviewing it regularly as to whether you have achieved your goals will turn it into a powerful tool that steers you through your doctorate, so don't leave it in your drawer.


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10 MANAGING YOUR TIME AND RESEARCH PROJECT

10.1 PRINCIPLES OF TIME MANAGEMENT

Managing your time independently might be an attractive aspect of a research career, but it can also become a problem if you are unable to manage your time effectively. Effective time management will help you avoid classic pitfalls of a doctorate. It is also an essential skill in almost all professions, you may enter after graduation.

Start reflecting on how you generally manage your time. Consider where you might lose time and what activities prevent you from achieving your goals. You do not have to work the complete time, you spend in the lab, without breaks and socialising. Discussions with your colleagues and a good working atmosphere to make them happen are as beneficial to your work as enough rest to restore your energy. So, the solution is not working longer hours, but using the time available more effectively.

HERE ARE SOME PRINCIPLES TO HELP YOU IMPROVE YOUR TIME MANAGEMENT:

- **Use your plan**: As mentioned above, your plan is there to help you focus on your goals and regularly review how your work is going to permit adjustments before too much time is lost with a dead-end approach.
- **Prioritise:** The key to effective time management is to prioritise and plan so that everything important gets done. Don't confuse urgency with importance:
  - *Urgent* = requires immediate action such as a phone call, the deadline today, somebody needing help with his/her running experiment. Usually creates time pressure instantly.
  - *Important* = of great significance or consequence for you, your team or others, such as your thesis, your training, your career. It might not create an immediate time pressure, and therefore you might be less attentive towards these tasks.

  Types of tasks =
  - *Important and urgent:* do them now.
  - *Not* important but urgent: do it quickly or delegate
  - Important and *not* urgent: make a good plan and try doing a little bit every day. Do them before they become urgent.
  - *Not* important and *not* urgent tasks – try not to do them at all
- **Do one task at a time and finish it**: If an experiment has long incubation times, it might be sensible to occupy yourself with another task during that time, otherwise starting more than one thing might make you lose your focus and leave you with a lot of unfinished business and nothing concrete to present in the end.
- **Review an activity before you leave it**: Check if what you did is in accordance with your plan. Is the task really finished? Consider that a comprehensible documentation is part of a completed task.
- **Learn to say "*No*"**: As you are not alone in the lab, others might ask for your time. Help for others should be a mutual principle. It is especially hard to say "*No*" to your supervisor, but with well-stated reasons that should be possible, too.

- **Avoid self-sabotage**: Review your behaviour and try to identify patterns that regularly get in your way. Is it perfectionism, procrastination, or are you easily distracted by others? Are you disorganised and need to develop routines that make it easier to manage your time? Being aware that you sabotage yourself could be enough to stop you from doing it.

Observing your lab mates for best practise or taking a course on time and project management with the GGL might also help you develop working strategies.

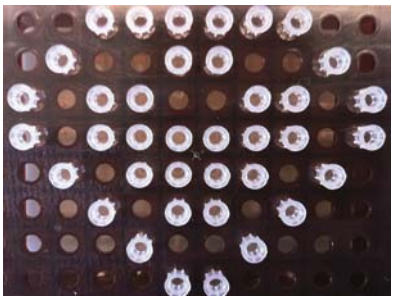
10.2 Finding your rhythm and space

Each of us has an individual daily rhythm with phases of high alertness and personal lows. There are those among us who wake up early and are most effective at the beginning of the day while others do not really wake up before noon. You should be aware of your personal rhythm and work accordingly if you can. Not all supervisors and teams will tolerate you coming to work late or leaving early, but if you can demonstrate that you work more efficiently in your own rhythm, you will have a good chance to arrange working hours that will help to fulfil your whole potential.

Some researchers need the busyness of a full lab, to get the impulses to work productively. Others need the peace and quiet of their personal "*think tank*" to concentrate and come up with good results. Be aware which situation fits best for you and certain tasks and make sure, you have the right surroundings and equip your work space according to your individual needs, specifically when you start an important task. This includes practical considerations, like organising materials and equipment that you need regularly and making your personal environment your individual and comfortable work space.

10.3 Work-Life-Balance

Being a researcher is very demanding, and it is usually not a nine-to-five job. However, it is important for your physical and mental well-being to maintain a balance between work and the rest of your life. It may be as simple as making sure that you take regular coffee and lunch breaks, either to socialize with colleagues and friends, or just to get away from your office or the lab for a while. Joining an exercise class or a sports club can also be a good way of taking a break, reducing stress and making sure that you leave work in the evening[19] (and not at night). Cultural activities will get your mind off your work for a while and your body out of the lab in time when you have plans to go to the cinema. If you're not sure what to do, check chapter 5.4 for some options.



Fun activities are also important to ease your mind. You can find a biweekly comic about life as a doctoral student here: ▸ http://www.phdcomics.com/

Even if your boss does not like it, you should go on **holiday** once in a while to replenish your energy, as your project will take years not merely months, and nobody can work effectively for years without a break – even if some researchers pretend to do

[19] Cf. www.vitae.ac.uk

so. If you are an employee of the JLU, the number of holiday, you are entitled to, is defined, and you need to have permission from your supervisor in form of a signed form called "*Urlaubsantrag*". You can ask the "*Personalrat*" of the JLU for help if you are being denied these holidays.

If you are on a scholarship, you do not need to obtain that permission, but the time of leave is defined by the rules of your funder. For instance, the DAAD requires that you "*are present in accordance with your academic project*", and if you intend to be absent from your host institution during term time for longer than one week, you need to ask for approval from the DAAD in writing. Even if that gives you a lot of freedom, remember that you are required to manage your time well enough so that at the end of the funding, you have fulfilled your work plan. Don't forget to notify your work team and supervisor, though (even if you are not required to do so). It will keep your team happy and avoid a lot of concern.

10.4 Dealing with problems

You cannot expect that the years, you work on your thesis, will always be happy, harmonic and successful. You will have a lot of problems to solve, but here are some approaches to address the most common ones.

Frequent problems are:

- Lack of clear goals (see chapter 9.4)
- Lack of motivation (see chapter 10.5)
- Poor time management (see chapter 10.1)
- Limited supervision: Take the opportunities to build up your support network; that network and a good research environment are your additional support systems (see chapters 7.8, 8 and 11).
- Fear of making mistakes: don't be afraid of failure. In the long term, you learn more from failures than successes. You will have to repeat some experiments because of mistakes, but that's normal if you work on an intellectually demanding topic.
- Lack of relevant experience: at the beginning of your thesis, it is your main task to gain knowledge and technical expertise. You are after all **training** to be a researcher. You will rely on the experiences of your colleagues before you get your own routine.

10.5 Motivating yourself and others

A doctorate is a long project, so you can expect your motivation to dip and peak along the way. There may be weeks without useful results which can be very frustrating, so you need to be able to motivate yourself. Also remember that you are working in a team. Exchanging experiences with peers who face the same problems can be helpful to you and to them.

Some motivation methods are:

- Calm your mind. Excessive demands can be paralyzing – classic remedies are meditation, yoga, qigong, etc.
- Clarify your goals. If you have too many tasks or ideas, you might lose the

overview and energy to follow your goals. Talk to your supervisor and work on your plan (see chapter 9).

- Fantasize. Imagine your success with vivid images.
- Control your environment. Try to create optimal working conditions for yourself. If there are things that disturb you, try to do something about them.
- Reward yourself. Do not forget to do something to bring you joy after you have reached a goal. Do it together with your team (see chapter 10.3).
- Assign realistic time frames for a task. You will never try to make the deadline, if it is not achievable from the beginning (see chapter 10.1).
- Control stress. Doing a doctorate is stressful – let the stress level drive you forward but not exhaust you[20].

10.6 Crises

Most problems during your doctoral project can be overcome, but if you experience an existential crisis such as doubting the relevance of your project, hating your supervisor, your colleagues and/or life, the most important part is to talk about it. Of course, your supervisor will be your first point of contact, but some crises might involve your supervisor or lab mates, so you might want to turn to somebody, who is not involved in your team. In that case, you can still talk to your co-supervisor or your training group leader. You can also contact your GGL managing director (0641/ 99 47283) who will be able to advise you on the next steps, you might take, and legal and organisational issues around your doctorate.

You may also contact "*Call Justus*" 0641 /99 16400, the central student hotline. Together with the Central Student Advisory Service of the JLU, they will help you find the support, you need, and provide psychological support as well.

If you are enrolled as a student, you have access to the services of the AStA (the student council of the JLU) which also includes free psychological counselling (▸ *http://bit.ly/ASTAGI*).

In the faculty of medicine, students also have access to psychological counselling from the Institute for Medicinal Psychology (▸ *http://bit.ly/MedPsy*). As an enrolled student of that faculty, you can contact Lisa Wilhelm (✉ lisa.wilhelm@psycho.med.uni-giessen.de, ☎ 0641 – 99 45674).

10.7 Quitting your doctorate

If none of the motivational techniques work out, you might find yourself wishing to quit your doctorate. Many people, who quit their doctorate, have gone on to have successful and happy lives. If you think about quitting, talk to someone (not necessarily your supervisor) before you make your decision. It might also make things easier to think through the following questions.

- Why did you decide to do a doctorate?
- What do you like and dislike about studying for the doctorate?
- Can anything of that be changed to improve your situation?

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[20] Cf. Stock, S., Schneider, P., Peper, E., Molitor, E. (eds.). Erfolgreich promovieren. Ein Ratgeber von Promovierten für Promovierende. (2009 [2007]). 2nd revised edition. Berlin, Heidelberg: Springer.

- Would anything be different if you had a different supervisor/project/ department?
- Would this decision stop you from having the career, you are dreaming of?
- What will you do instead of your doctorate?

Don't make the decision on your own, use all the support you can draw on from your network such as family, friends, your colleagues or the GGL. It might be a good idea to take some time to deal with the problems that are stopping you from enjoying the doctorate.

If you decide to quit, remember that there are procedures prescribed in the rules and regulations for your doctorate ("*Promotionsordnung*", see chapter 3.10). Specifically your supervisor, your faculty and your graduate centre do want to know why you decided to end your doctorate. It will give us the chance to review and improve the quality standards of our doctoral education.


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11 Networking in Science

11.1 How to start

With the increasing complexity of science, it gets more improbable that you can be a successful researcher without building and expanding a network of colleagues and collaborators. You will always need some specialised expertise, and people prefer to work with persons, they already know. Fruitful collaborations can last your whole scientific career and you might get a job because an employer already met you before and crucial information might be available only if you belong to the network. So, do not underestimate the value of networking. Some networking happens naturally, without you having to do much; you already have your family, friends and colleagues around you. In other cases, it requires proactivity to make your network grow. To obtain the professional support, you require, think about the aims and methods of your networking as well as the way, you wish to use your contacts.

> **NOTE**
> Networking is based on the principle of reciprocity. As you draw opportunities and support from your networks, you are expected to put something back in. The larger your networks are, the more people will look to you for advice and support.

- What type of people do you want to network with and for what purpose?
- How will you meet them? Conferences? Meetings? Online? Social events?
- How can you spark their interest in you?
- How will they remember you, and how will you remember them?
- What can you offer them?
- Which members of your network could mutually benefit from you?

If you are an introverted person, you might find it hard to approach people, you do not know. Specifically in that case, it might help you to answer these questions and then start with a few contacts that are important to you. Although you might benefit from your supervisors' network in the beginning, you have to build your **own** network. Nobody will tell you how to do it. You are your own boss, and you can tailor your network as you like.

Conferences are always a good opportunity to meet experts in your field and get acquainted with them. Before attending a conference, it might be helpful to prepare some sentences about yourself and questions that you can ask to break the ice. You do not want to grasp for words when the perfect opportunity for networking arises!

Since it is not that easy to identify and approach somebody, who is an expert in your research field during a busy conference, meet-the-expert sessions are sometimes offered during conferences (e.g. the GGL Annual Conference), retreats or after talks of invited speakers specifically for junior researchers like you. This is a great opportunity to network with experts, and you should use it to your advantage as often as you can.

11.2 NETWORKING AMONG PEERS

You will find it a lot easier to talk to another doctoral student compared to a famous Nobel Prize winner. Besides, it is helpful to find that others face the same difficulties and to learn how they overcome theirs. Being a member of a structured doctoral network is the easiest way to get to know other doctoral students because you will meet other doctoral students in training groups, your sections, workshops or classes. Maybe you know that Noble Prize winner already, you just have to wait a while, so you can invite him or her for a talk.

If you are interested in getting involved at the European level, the **European Council of Doctoral Candidates and Junior Researchers** (EURODOC, http://www.eurodoc.net) is an international federation of national associations of doctoral candidates and young researchers from 33 countries of the European Union and Council of Europe. Some of EURODOC's objectives are: to represent doctoral candidates and junior researchers at the European level in matters of education, research and professional development and to advance the quality of doctoral programmes and the standards of research activity in Europe[21].

THESIS (http://www.thesis.de) is a national and interdisciplinary network which aims to exchange experiences among peers together and to provide advice and information about new developments in doctoral education. One German internet discussion network of doctoral students is http://doktorandenforum.de.

Other online networking platforms for young academics are:

- Linkedin: http://www.linkedin.com
- Researchgate: http://www.researchgate.net
- Academia: http://www.academia.edu

Since networking is such an important issue, the GGL offers workshops in networking and relationship marketing. There, you might practise preparing your own profile for one of these online platforms, learn to break the ice in a personal conversation, or practise that famous "*elevator pitch*" that might open a door to your postdoc position.

[21] Cf. www.eurodoc.net (direct link: http://is.gd/Organization)

12 COMMUNICATING YOUR WORK

12.1 ORAL PRESENTATIONS

The most frequent way, you will communicate your work, will be an oral presentation of your poster or a talk. It is normal to be nervous, especially when giving your first talk at an international meeting, but it is important to communicate your research to others in your field and make yourself known to the scientific community. With time and routine, you might even enjoy giving a lecture and being allowed to present your project.

Good supervisors will make sure that doctoral students get to present their work regularly in order to practise their presentation skills, starting in group seminars, during retreats and finally at international conferences. The GGL Annual Conference is one of the best opportunities for you to practise under realistic conditions before you go on an international stage. In addition, the GGL offers workshops on different aspects of communication, specifically presentations, that will help develop your personal communication skills and style. Especially if you find oral presentations a difficult task, you should use these opportunities as much as possible.

Nature provides a very nice tutorial for all aspects of scientific communications. Below, we provide the basics and refer to the corresponding parts of that tutorial: ▸ http://bit.ly/CommSci.

12.1.1 Content and Visual Presentation

Think about what your key message is and make sure that you focus on it. Conference lectures are typically 15 – 30 minutes long which does not give you much time to develop a complex academic idea. Keep the background information to a minimum and focus on your main message. Since you will be cut off if you exceed your time slot, you should rehearse your talk to see how much time you need.

A well-designed talk has the following structure: Introduction, Methods (if they are unusual and/or crucial for understanding), Results, Conclusion/ Summary, Outlook and usually concludes with Acknowledgements of the team and collaborators.

Presentation slides help you to get the message across. The audience will not listen to your presentation and read the information on your slides at the same time, except for a few words or a short statement. Therefore, try to avoid too much text on your slides, 10 to 15 words are enough. For text, graphs and other elements, consider that people in the last row will want to see what you have to show.

As in your publications, make sure to provide correct references when showing somebody else's results. When presenting your data in a graph, all labels, units and error bars should be in place. Where possible, add one conclusive sentence that sums up what you show on your slide.

Below is a tutorial on preparing oral presentations as well as example videos provided by *Nature* at: ▸ http://bit.ly/OralPres

12.1.2 Dramaturgy

As a natural scientist, you will be used to presenting the naked facts and letting them speak for you. However, approximately 93 % of our communication is non-verbal, such as body language and intonation. That means, it is not only important to prepare the content, but also to spend some time on the dramaturgy of your talk.

ELEMENTS THAT WILL HELP YOU TO KEEP THE ATTENTION OF YOUR AUDIENCE ARE:

- Speak freely
- Vary the pitch and volume of your voice
- Look at the audience and make eye contact
- Use your body language to emphasize what you are saying
- Engage the audience, e.g. by asking questions
- Try to tell a good story

To develop your own style, it is a good idea to observe experienced speakers and to think about the following questions:

- Who are seen as the best presenters in your field?
- What do you like about their style of presentation?
- How do other speakers involve the audience?
- Who is your audience and what might they expect?

12.1.3 Dealing with questions

One of the most demanding aspects of giving a presentation at a conference is the discussion afterwards, as questions from the audience cannot be foreseen in detail. Still, you can prepare yourself for dealing with questions:

- Make a list of questions that might arise and how you could answer them.
- Be prepared to be criticized. Identify possible weak points of your presentation and have polite answers ready for open criticism.
- Be aware that you will not be able to answer every question and rehearse to admit that in a way that might lead to a fruitful discussion.

The checklist in Appendix 3 might steer you through your first presentations until the whole procedure becomes a routine to you.

12.2 PREPARING A RESEARCH POSTER

At the beginning of your research career you will most likely start to present your results in form of a poster. However, also in other situations, it can be a highly effective way to present research and to initiate individual discussions and networking activities.

You are expected to prepare a large poster, usually DIN A0 = 841 mm × 1189 mm, that gives a visual summary of your project. The poster is usually put together using software, such as PowerPoint. If you are preparing your first poster, reserve some time for making yourself familiar with the software. Many institutions or organisers of conferences provide templates with pre-set font sizes and formats for headlines and text, logos and even pre-defined structures which will help you with the general design of the poster. If no templates are provided, make sure to follow any layout guidelines issued by the organisers, including the direction of printing (landscape or portrait).

The poster should contain all the points that you would put into a talk, i.e. introduction, methods, results, conclusion, outlook, acknowledgements, and references.

Even though you seem to have a lot of space, you will realise that you need to condense your message. It will be easier if you prepare all the content first, proofread, and then put the poster together. After that, you will most likely need to discuss with your supervisor where to reduce the content. You should help the reader to quickly gain an overview by using design principles and colour schemes that suggest the order in which it should be read and support your message. Use beautiful pictures of your results or graphs as eye catchers.

Consider that posters need to be printed – which takes time. Especially during the conference season in September, there might be a high demand for printing posters, so you should have yours ready to print several days before you need it.

After the poster is mounted, your job has only just begun. Make sure you know if and when there is the poster session and when you are scheduled to present your poster. You should prepare the talk in front of your poster with just as much care as any other talk (chapter 12.1). If there is no formal poster session, consider anybody showing an interest in your poster as a chance to network. Give them time to read but also try to break the ice: ask them for their name and what they do. You may then tailor your presentation to their research interests. You may also prepare printouts of your poster that you can distribute to interested visitors. If somebody shows real interest, they might be experts that can advise you on certain aspects, so don't just race through the poster but ask questions to get structured feedback and request contact details.
This might be helpful for preparing for your conference visit: ▸ http://bit.ly/ConfVis

12.3 GETTING PUBLISHED

Since articles in peer-reviewed journals are the "*currency*" of scientific success in the life sciences, it would be good to have a publication **list** by the end of your doctoral thesis. Funding and job decisions may depend on it. It is also a mean of gaining recognition from other researchers. Because publications are so important, they might even take priority over your thesis. That is also reflected in the doctoral rules and regulation of the JLU where some faculties permit a "*cumulative dissertation*" consisting of a series of publications.

As a doctoral student, you will always publish in a group together with your supervisor, postdoc, lab mates, co-operators, etc. Since your work would not be possible without that team, many of the decisions concerning your paper will be made by the team leader (your supervisor) and you will develop your scientific writing skills in close collaboration with her or him. Some supervisors might prefer writing research articles themselves and only ask for input in form of the doctoral student's data. Although the decision-making role of your supervisor is fixed by our statutes for good scientific practice (chapter 8.3.7), it is important that you practise writing research articles yourself, especially if you are planning an academic career. You should do the majority of the writing (after discussion of the concept) with input from your supervisor in form of critical proofreading. Below, you will find the most important steps of publishing:

1) Writing the paper
2) Submission
3) Review process
4) Respond to reviewers' and editors' comments –
   they may ask for further experiments
5) Paper published or back to 1.

12.3.1 Identifying a suitable journal

Depending on your field of research, there will be a set of journals that might accept your contribution due to their scientific scope. The journal that publishes your results should be peer-reviewed.

To assess ranking and ultimately make the decision of whether or not to publish in a specific journal, many researchers turn to the **Journal Impact Factor**.

> **NOTE**
> Peer-review is the process of subjecting an author's work to the scrutiny of others, who are experts in the same or a related field.

The journal impact factor is the average number of times, articles published in the past two years from that journal have been cited in the current year's Journal Citation Reports. As an example, an impact factor of 3.0 means that, on average, the articles published one or two years ago have been cited three times. Beside the impact factor, other indices might be taken into consideration, such as the **Immediacy Index**, which reflects how quickly the journal turns submitted manuscripts into published and cited articles. You may check impact factors and other indices here:

- http://bit.ly/JIFact (if you have access to the Web of Knowledge).

Using this ranking, generalized journals publishing groundbreaking work in many disciplines, such as *Nature* and *Science*, are very desirable because they have an impact factor of around 30. The possibility of rejection is quite high, though, because the higher the prestige of a journal, the more competitive the publication process. At times, it might be worthwhile publishing in a lower ranking journal with a more specialised scope in order to avoid competition or to address the scientific community devoted to your specialty more directly.

12.3.2 Reading editorial guidelines

Even in the early stages, it is important to read the journal's editorial guidelines because they usually summarize their scope and give precise descriptions of the types of manuscripts, they accept, as well as other clear instructions and quality standards on the following topics (and additional subject-specific topics) on their websites.

- Methodology
- Ethics
- Statistics
- Formatting
- Required permissions

These standards might also influence your journal choice. Before the manuscript is ready for submission, you will return to these guidelines several times. Knowing and following the editorial guidelines and instructions will make sure that you get feedback on the content of the manuscript and not formal errors.

12.3.3 Agreeing authorship

The simple task of putting the authors' names in order might be more difficult than any other part of a scientific paper. This decision is difficult because most papers have many contributors. Again, your supervisor decides, who will be an author and on which position your name will appear. Here are a few methods for that task:

- Authors in alphabetical order
- Senior author comes first
- Senior author comes last
- Person, who wrote the paper, comes first
- The person, who provided the data, comes first
- Announcing that the first two authors contributed equally

In any case, it is wise for you to agree on authorship at an early stage of your paper. If you think that you ought to be named as author of a paper but were excluded, please refer to the JLU's statutes of good scientific practice (chapter 8.3.7) which define who should be an author and also advises on the legal steps, you can take if you were excluded.

12.3.4 Writing techniques

There are many ways to start, write and finish a paper. A few strategies are:

1) Start at page one and write the whole paper
2) Write repeated drafts until the result is satisfying
3) Use a template outline, decide on subheadings, then write the text for each heading
4) Decide on tables and graphs and then fill in the text in between
5) Brainstorm ideas, build a structure and then work from the outline
6) Write down what you wish to prove, then do experiments and revise manuscript accordingly

The typical research paper usually has the following **structure**: Title / abstract / keywords / authors

- Introduction
- Methods
- Results
- Discussion
- Conclusion / Recommendations
- Acknowledgements
- References

> **NOTE**
> All journals have their own templates for papers.

Referencing software, such as EndNote or Citavi, provide templates in the format required by the journal.

When you begin your paper, you should have read the instructions to authors and know what kind of structure, format and layout a journal expects.

Scientific writing is expected to be a precise and explicit explanation and analysis. The author should remain objective and concise while carefully supporting claims. Typical formal grammar is used in scientific writing. You should know these basics before you write your first abstract:

- Impersonal: "*I*", "*we*" or "*you*" should be avoided
- Passive is widely used: "*Two specimens were then selected*" rather than "*I then selected two samples*"
- Complex sentence structure to relate ideas and improve flow of ideas
- Modals – such as can, may, might – are important in making carefully weighted claims.

The best way to develop a good style is to analyse your favourite paper. Choose a key paper from your subject area that you find inspiring and easy to read and ask yourself:

- How much passive was used?
- How is the text organised?
- What vocabulary was used?
- How is the title structured?

Again, *Nature*'s tutorial will provide more details on structuring, drafting and using specific styles: ▸ *http://bit.ly/writeproc*

12.3.5 Submission

Most journals accept submissions electronically and generally require a cover letter, the manuscript itself, tables and graphs and your supporting documents. We cannot stress enough how important it is to read the journal's submission instructions. These will detail exactly which documents you need to submit, in what format and all other information, you will need. If you do not follow these instructions, your paper will probably not even be considered for publication based on formal errors. If you are not the person submitting the paper, ask your colleague to look over their shoulder during the submission process to learn how it is done.

12.3.6 Review process

After submitting your paper, you will receive confirmation from the journal that your paper has been successfully received. The paper is then sent to the reviewers for reading. The reviewers send their comments to the editors who will make their decision based on these comments. Possible answers from the editors are:

- Accepted (with or without editorial revisions)
- Invitation to revise the manuscript before final decision
- Rejected, but further work might justify resubmission
- Rejected

In any case, remember that you are evaluated by colleagues who are experts in the field and were asked to improve the manuscript through constructive criticism. Even if you are not happy about being criticised, keep in mind that you want to maintain good relations with your reviewers and editors. Throughout this process, try to stay unemotional, read and reply to each of the comments carefully and be sure not to question the expertise of your reviewer. Finally, analyse which changes you can and cannot implement and possibly decide to publish somewhere else.

> **NOTE**
> Usually, there are deadlines for resubmissions and corrections. Make sure not to miss them because it might end with your paper being completely rejected.

12.3.7 Open access publishing

When publishing your papers, you might also want to think about open access publication. That means after you publish a paper in a journal, you can make it publicly available beyond the group of subscribers to that journal by placing it on your personal website, in an institutional depository or a depository specific to your research subject (also called self-archiving). Some publicly funded researchers might even be required to do that. There are a lot of reasons in favour of open access publishing, such as increased visibility and higher citation rates, fast and free access to information

(no subscriptions), use of normal search engines, early discussion of findings and many more.

There are also some concerns because you mostly aim for peer-reviewed publications in the journals of your specialty and you might be concerned that you are jeopardising your chances for publication.

However, most publishers allow their authors to self-archive open access their articles as long as you keep to their conditions and restrictions. For instance, there are often embargo periods between the publication date and the date on which the document can be made openly accessible online. Through the SHERPA/RoMEO Listings (▸ http://www.sherpa.ac.uk/romeo), you can find out about the self-archiving policies of individual publishers. Open access is supported in Germany by funders and research institutions such as the DFG, the Max-Planck Society, the Helmholtz Society, the Fraunhofer Society and many more. At the JLU, currently, some funding is available to support you in open access publications. If you want to learn more about that and open access publishing in general, you should attend one of the courses offered by the university libraries or the GGL. For information also visit

▸ http://open-access.net/de_en.


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13 Your Thesis

By the time, you sit down to write your thesis (= *dissertation*), you will have written several summaries, reports, abstracts and (partial) publications. Some of the chapters, such as your literature review and the materials and methods, should be in the form of a final draft; partial dataset might have been published already. When you are ready to bring all the chapters together, go back to the rules and regulations of your faculty (chapter 8.3) to review the criteria. Almost all of them include the following:

A DISSERTATION MUST:

1) Result in an advancement of scientific knowledge from your independent research.
2) Do justice to the methodological principles of the concerned subject.
3) Contain documentation of the analysed material and literature used appropriate to scientific principles.
4) Present subject matter completely, clearly and formally according to the rules and regulations of the language in which it is composed.

Most importantly, the thesis should be your own work and not plagiarized from the work of others. All sources must be appropriately indicated using a recognized form of referencing. Therefore, a declaration confirming that and signed by you is a required part of your thesis.

At the same time, you should be able to demonstrate that you have acquired and extended research skills appropriate to a professional researcher in your field.

13.1 Structure

The structure of your dissertation, your oral examination and its preparation, the grades that you might earn and many more aspects of the final stage of your dissertation are defined in the doctoral rules and regulations ("*Promotionsordnung*") of your faculty. Please go back to chapter 3.10 to find the links for all dissertation rules.

It is possible to write your thesis in English, but you must declare that when you apply for your doctorate (see chapter 3.8) and cannot change without a lot of extra paperwork. The doctoral rules and regulations of your faculty define all formal requirements. In the following, the typical structure of a dissertation is described.

> **NOTE**
> Each department, working group or supervisor might have their own standards concerning the formatting, number of pages and many other aspects of the thesis. Be sure to know them as well.

TITLE PAGE

Generally, the first page is written in German (even if the rest is in English). The specific requirements for your title page might already be prescribed by your faculty. Please see Appendix 5 for an example of the first five pages of a dissertation.

List of reviewers

The second page might only list your reviewers, but you may also add who financed and supervised you in a sentence above (check former dissertations from your department for the exact placement).

Declaration

You have to declare that you did the following work on your own and according to good scientific practice. See example in Appendix 5.

Dedication and/or quote *(optional)*

If you like, you can dedicate your thesis to someone or add a meaningful quote.

Acknowledgements (*"Danksagung"*)

Here, you can thank everybody, who supported you during your project. It is customary that you start with your supervisors and lab mates and end with friends and family.

Abbreviations

Too many abbreviations should be avoided in the text of a thesis, but some chemicals and molecules (e.g. DNA) or methods (e.g. PCR) have generally used short forms, and the names you give to your materials are usually derived from longer descriptions. Every abbreviation – even if it seems too common to mention – should be found in this list. You might put the list at the end of your thesis, too.

Table of contents

You might let your computer programme generate the index automatically.

Introduction (10 – 20 pages)

Here, you introduce the reader to the current state of your field and explain in what context your project lies. The first chapter of your introduction might even start with a historical overview, whereas the last chapter of your introduction will explain the intention of your work.

Aims (1 – 2 pages)

In this section, you summarise the main goals of your work.

Materials and methods (30 – 40 pages)

Here, you list and explain **all** (!) of the methods and materials, you used for your work. If you describe your methods in a few sentences and with a little background, it might be helpful for your successors and not too dull to read. But long lists of e.g. primers, vectors, cell lines or strains and all of your *"recipes"* cannot be avoided. The best way to prepare this part of your thesis is to start from the very beginning by carefully writing down every new method, you use, and start listing your materials. This will save a lot of time, and it would be tiresome to search for all the information years later in your lab book/s.

Results (20 – 50 pages)

As you usually present your work several times before you start writing your thesis, you might have a large set of illustrations and figures. So, the difficulty will be bringing all your results into a reasonable order and maybe filtering out unimportant preliminary data. Therefore, it would be wise to discuss the structure and content of this part of your thesis thoroughly with your supervisor/s before you start.

Discussion (5 – 20 pages)

This is usually the hardest part to write, since it requires you to interpret your results and explain what the gain to the scientific community is. You should also discuss this part with your supervisor/s before you start. If applicable, you could develop models.

Summary (1 – 2 pages)

The summary of what you have written in the introduction, results and discussion usually does not exceed one page. If your work consisted of many projects, you might get by with two pages, but the essence of your work with a few introductory sentences should be kept short. If you decide to write your thesis in English, a German version of your summary is expected; and if you write in German, you will need an English version of your summary.

References (10 – 20 pages)

Every fact mentioned in your thesis that was not your own result should be documented by publications. Here, you list every book or article, you used. Check the theses of your predecessors for the formal standards that are customary in your institute. You may let a programme like EndNote or Citavi generate this list automatically.

Cumulative dissertation

Some faculties of the JLU permit submission of a cumulative dissertation. This means that first author publications (generally at least two) can be accepted as a dissertation as long as they describe the step-wise work on your topic and were published in international, peer-reviewed papers. This type may save you the time of writing an extra dissertation, but requires very good planning as to how the papers will be related and where and when they will be published. Currently, cumulative dissertations are possible for the title Dr. rer. nat., for titles awarded by Faculty FB09 and for titles awarded by FB 11. The structure of these dissertations will, of course, differ from the structure described above. Again, you should consult your supervisor and the "*Promotionsordnung*" for detailed instructions.

13.2 The writing process

It will save you a lot of time and trouble if you think about your written thesis from the very beginning. Whenever you learn a new method, you can write down a useful description to copy into your thesis file. Whenever you read a paper related to your work, summarise it and add it to your reference list. Whenever you get a nice result, you can make a beautiful publishable picture with labelling ready. Whenever you prepare a presentation, you can already think of the structure of your thesis and make illustrations you can use in your thesis document.

In the course of filling the chapters with your ideas, you will rearrange some and maybe even discard others until you have the feeling that nothing is missing. The next step will be a revision where you will check your formulations and spelling until it is ready for proofreading by others.

13.3 Literature survey

The literature survey is most likely the first chapter of your thesis that you will be writing. Original research can only take place after extensive review and analysis of existing work. Before you design your experiments, you should be familiar with the

professional standards of published work by having read dissertations in your field and several articles to be aware of the previous research in your area, usually provided by your supervisor. After that, make a habit of regularly reading articles at a certain time, e.g. every Friday afternoon or every time a gel is running. It is common in groups to run journal clubs where you and your peers analyse currently published papers, thus, keeping yourselves up-to-date, understanding the context of your work and absorbing scientific writing style.

After a while, you should not depend on your supervisor to find scientific articles. In the course of your doctorate, you are supposed to become the expert in your field. In order to find and organise the publications that you will be reading, there is a number of tools that will be of great assistance to you throughout the process of writing your thesis. You should be familiar with databases, such as PubMed (http://www.ncbi.nlm.nih.gov/pubmed), ISI Web of Knowledge (http://apps.isiknowledge.com) etc. Also, it would be helpful to familiarise yourself with reference management software, such as EndNote and Citavi, that helps you to retrieve, organise and cite literature relevant to your thesis work. Building your own library from the beginning will save you a lot of time when you write your thesis. The GGL and the JLU library offer courses in EndNote and Citavi regularly.

Once you have collected your literature, don't just read it, prepare your excerpts and summarize your findings – you are writing the first chapter of your thesis!

13.4 PROOFREADING

Before you hand in your doctoral thesis, you should have it read by several others, including your colleagues and maybe also friends from different fields to make sure your explanations are clear and concise.

If you have finished a chapter, you might want to send it to your supervisor for proofreading. If you use your supervisor's advice, make sure, you make his or her life easy with this and do not send the same chapter in different stages, but rather only the final version (preferably after it has been read by someone else). It is also easier for the supervisor to receive only some related chapters together and not the thesis as a whole and at the last minute. Do not assume that your supervisor has everything, you ever sent available at all times. Though you might enjoy a text that looks finished, the biggest part of formatting should be done at the very end, and never forget to back up your latest version/s!

13.5 THE EXAMINATION PROCEDURE

The prerequisite for your doctoral examination is having submitted your written thesis to your "*Prüfungsamt*" or "*Dekanat*". Depending on your faculty, you might have the choice of who will review your thesis and serve as an examiner during your "*defense*". Either you can make appointments with your examiners or everything will be handled for you. If you can organise it yourself, you should have confirmed your examiners before you submit your thesis. Typically, your supervisor and co-supervisor evaluate your written thesis and act as examiners and two additional examiners will be appointed (differs between faculties). These examiners do not have to belong to the JLU. You could, for example, choose a project partner from another town or abroad if he or she is willing to travel here. First, your examiners give their statement on your work including suggestions whether or not your dissertation should be accepted and which grade you should receive (excellent = summa cum laude, very good = magna cum laude,

good = cum laude and sufficient = rite). Usually, they have a two-month period to prepare this statement. After that, the date for your examination can be fixed.

The oral examination is called a disputation and refers to defending your thesis (sometimes in public and sometimes only with your examiners), and questions will mostly relate to your thesis work. It usually starts with a public lecture that summarizes your research work in 15 to 30 minutes, then comes a discussion of your work and general questions relating to your research topic will be asked to test your knowledge in topics surrounding your own research. This last part might take place in a closed session only with the examiners. After your examination, your grade is calculated from these three parts and the recommendations of the examiners. Often, the statements of the examiners demand for certain correction before the thesis is published.

13.6 PUBLISHING YOUR THESIS

In Germany, you are only awarded your doctoral title after having published your thesis. It is important that your thesis is accessible to everybody, so other scientists have the opportunity to cite from your thesis and other doctoral students can make sure that their work is original and has not been published yet. In the life sciences, this publication of doctoral theses is mostly done online. At the JLU, this is facilitated via the university library: ▸ http://geb.uni-giessen.de/geb

TO PUBLISH YOUR THESIS, YOU WILL NEED:

- Four print copies
- An electronic copy in PDF format, which is not to be password protected and is identical to the print version both formally (pagination) and with regard to content
- A brief abstract of your thesis' content of no more than 5 000 characters (including blanks) in German and, if possible, in English
- Two signed deposit agreement forms

You will find detailed instructions and the registration form here:
▸ http://bit.ly/JLURegInst

Alternatively, you may publish your thesis in form of a book or several journal articles or have it printed and distributed through a publishing house which is more expensive.

NOTE
The requirements may differ between the JLU faculties.


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14 After your Doctorate

Doctoral studies are very time-consuming, particularly toward the end. However, you should not make the mistake of focusing on your current studies so much that you lose the bigger perspective. Planning your career is part of your doctorate from day one. If you do not know what you want to do after the doctorate, you need to reserve some time to explore the options, you have – for instance by visiting career fairs, visiting interesting labs and institutions during lab rotations, or attending the GGL Career Days that offer insight into multiple career options. You might want to think about job options in the following areas:

- Academia
- Industry
- Marketing and sales
- Entrepreneurship
- Journalism
- Publishing
- Science management
- Politics/governmental bodies
- Museums
- Funding agencies (e.g. DFG)
- Forensics
- Education (outside the university)

You may currently be working in an academic environment, but it is very likely that you will be leaving sooner or later, since less than 20 % of all doctoral graduates continue on to research roles in academia after graduation. Consequently, while working on your doctorate, you need to develop skills in addition to your technical expertise, to take on challenging jobs outside this well-known frame. For instance, if you see yourself climbing up the career ladder in industrial companies, you should develop your business sense, e.g. through courses by the Entrepreneurship-Cluster-Mittelhessen (*"ECM-Gründerzentrum der mittelhessischen Hochschulen"*) ▸ http://bit.ly/ECMggl), try to spend an internship in a company and build up your managerial skills.

If you intend to stay in academia and eventually become a professor, teaching students, writing grants and publishing are skills, you can develop with the help of your supervisor and also through GGL courses.

If you plan to spend some time as a postdoc abroad, you can get assistance on how to write a good job application, ideas for suitable grants (see ▸ http://bit.ly/GGLpdabroad) and funding for a first lab exchange through the GGL (from the DAAD).

By obtaining your doctorate, you are setting yourself up to become a leader or supervisor. In the GGL DDP courses, you can prepare for that role by learning how to motivate and efficiently manage your team.

Towards the end of your doctoral studies, your plans and ideas should become clearer, so you can choose your courses and activities according to them. A collection of databases, job search engines and links to career websites can be found on the GGL website at ▸ http://bit.ly/GGLafterPhD.

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DAAD Deutscher Akademischer Austausch Dienst
German Academic Exchange Service

Bundesministerium für Bildung und Forschung

16 REFERENCES AND LITERATURE

During the preparation of this handbook, we consulted the following resources that might be helpful for you as well and provide more defined information for specific topics. Many other important resources for further reading are included in most chapters.

- *Checklist for the International Doctoral Students, International Office of the JLU*
- *Stock, S., Schneider, P., Peper, E., Molitor, E. (eds.). Erfolgreich promovieren. Ein Ratgeber von Promovierten für Promovierende. (2009 [2007]). 2nd revised edition. Berlin, Heidelberg: Springer.*
- *University Handbook for Examiners of Research Degrees. Newcastle, August 2008*
- http://ec.europa.eu/atoz_en.htm
- http://www.arbeiterkind.de
- http://www.dfg.de/en/research_funding/principles_dfg_funding/good_scientific_practice/
- www.dissonline.de
- www.eurodoc.net
- www.justlanded.com
- www.promodoc.eu
- www.research-in-germany.de
- www.st-andrews.ac.uk/capod/gradskillsprogramme
- www.stipendienlotse.de/datenbank.php
- www.vitae.ac.uk
- www.wikipedia.org

17 APPENDICES

17.1 APPENDIX 1: TERMS AND ABBREVIATIONS

TERM	ABBREVIATION	DEFINITION
Abschlussfinanzierung		Follow-up financing, in case you run out of money after three years without having finished your thesis. See chapter 2.4.3.
Akademisches Auslandsamt	AAA	International Office. See chapter 6.3.2.
Allgemeiner Hochschulsport	AHS	University sport sector – offers cheap sports courses. See chapter 6.3.4.
Anmeldebestätigung		Proof of registration. See chapter 3.3.
anmelden		Register (a residence). See chapter 3.3.
Antrag auf Zulassung zur Promotion		Application to be awarded the status of doctoral student in one of the faculties. See chapter 3.8.
Aufenthaltserlaubnis/ Residence Permit		Document required to stay in the Federal Republic of Germany (issued after arrival in Germany). See chapter 3.6.
Ausländerbehörde		Office for Alien Affairs. See chapter 3.6.
Auswärtiges Amt		Ministry of Foreign Affairs. See chapter 3.1.
Betreuungszusage		Consent of Supervision. See chapter 2.3.
Bundesagentur für Arbeit		Municipal Employment Office. See chapter 4.11.
Cumulative Dissertation		Thesis consisting of a series of published papers. See chapter 13.1.
Dekanat		Dean's Office/Deanate. See chapter 13.5.
Deutsche Forschungs-gemeinschaft	DFG	German Research Foundation – supports research in science, engineering and the humanities through a large variety of grant programmes, prizes and by funding infrastructure. See chapter 8.3.7.
Deutscher Akademischer Austauschdienst	DAAD	German Academic Exchange Service – the largest German support organisation in the field of international academic co-operation. See chapter 2.4.3.

Dispositionskredit		Overdraft protection. See chapter 4.9.
Disputation		Oral examination, part of the procedure to obtain a doctoral degree. See chapter 13.5.
Doctoral Development Programme	**DDP**	Programme offered by the GGL to train you in other "*soft*" skills you might not acquire in the lab. See chapter 7.2.
Einwohnermeldeamt		Residence Registration Office. See chapter 3.3.
Elektronische Zeitschriftenbibliothek	**EZB**	Electronic Journal Library. See chapter 6.3.3.
Ersthelfer		First responder. See chapter 8.3.1.
Fachbereich	**FB**	Faculty. See chapter 6.2.
Familienservicestelle		Family Service Office. See chapter 6.3.6.
Finanzamt		Local tax office. See chapter 4.10.
GGL Annual Conference		Conference held by the GGL to give members the chance to exchange information about their projects. See chapter 7.3.
GGL Board of Directors		Comprised of the Director and two Vice-Directors of the GGL. See chapter 7.7.
GGL Council		Makes decisions on the implementation of new sections and bodies of the GGL and changes to the GGL statutes. See chapter 7.7.
GGL General Assembly		Elects council and organ members and discusses important decisions concerning the development of the GGL. See chapter 7.7.
GGL Office		Plays a central role in the organisation and management of the GGL. See chapter 7.7.
Giessener Graduiertenzent-rum für Lebenswissenschaften	**GGL**	Giessen Graduate Centre for the Life Sciences. See chapter 7.
Girokonto		Checking/open account. See chapter 3.4.
Graduiertenkolleg	**GK/RTG**	Research Training Group. See chapter 2.1.4.

Hausarzt		General Practitioner (GP). See chapter 5.7.
Hochschuldidaktische Weiterbildung		Training offers of the HDM (below)
Hochschuldidaktisches Netzwerk Mittelhessen	**HDM**	Training network of the universities Giessen, Marburg and Friedberg – offers training for employees of the university.
Hochschulrechenzentrum	**HRZ**	IT Service Centre. See chapter 6.3.1
Immatrikulations-bescheinigung		Certificate of enrolment.
Immediacy Index		How topical and urgent work published in a scientific journal is. See chapter 12.3.1.
Internationales Graduiertenkolleg	**IRTG**	International Research Training Group
Journal Impact Factor	**IF**	Average number of citations to articles published in science and social science journals. See chapter 12.3.1.
Kaution		Deposit (for a residence). See chapter 3.2.
Krankenversicherung (gesetzliche)	**KV**	Public health insurance. See chapter 3.5.
Krankenversicherung (private)	**PKV**	Private health insurance. See chapter 3.5.
Lehrauftrag		Short-term teaching position. See chapter 4.11.2.
Lohnsteuerkarte		Income tax card. See chapter 4.10.
Max-Planck-Institut	**MPI**	Institute of the Max Planck society – Germany's most successful research organisation. See chapter 12.3.7.
Mensa		Cafeteria. See chapter 3.7.
Mietvertrag		(Apartment) lease agreement. See chapter 3.2.
Mitarbeiterstelle		A position offered to work for the university. See chapter 4.11.2.
Nebentätigkeit		Secondary employment. See chapter 4.11.2.

Nebentätigkeitsanzeige		Secondary employment notice – as a university employee, you have to inform your employer of any other job, you intend to take up in your spare time – in written form and also in advance. See chapter 4.11.1.
Personaldezernat		Human Resources Department. See chapter 4.11.2.
Personalrat		Staff council. See chapter 10.3.
Pfand		Deposit (on bottles and cans). See chapter 4.6.
Promotionsausschuss		Doctoral Committee. See chapter 3.8.
Promotionsordnung		Doctoral Rules and Regulations. See chapter 3.10.
Prüfungsamt		Examination office
Rathaus		Town hall. See chapter 3.3.
Research Sections		Represent the different scientific focuses and your "*home base*" within the GGL. See chapter 7.1.
Rhein-Main-Verkehrsverbund	**RMV**	Hessian organisation for public transportation. See chapter 5.5.
Schengen Agreement		European treaty that provided for the removal of border controls between participating countries. See chapter 3.1.
Semesterbeitrag		Semester fees (paid before enrolment). See chapter 3.7.
Semesterticket		Comes with the student ID card – allows you to take all busses, trams, subways and regional trains in Hesse. See chapter 3.7.
Sommersemester	**SoSe**	Summer semester. See chapter 6.2.
Sparkasse		Savings bank. See chapter 3.4.
Sperrkonto		Blocked account – money on the account is blocked for a certain time, interest earnings are liable for taxation. See chapter 3.6.
Studentenwerk		Student services. See chapter 3.2.
Studentenwohnheim		Student residence hall. See chapter 3.2.

Studierendensekretariat		Registrar's Office/Student's Office – deals with enrolment and other student's documents. See chapter 3.7.
Studentische Hilfskraft		Student assistant. See chapter 4.11.
Study Calendar		Part of the GGL website, contains information on the curriculum of each section and training events. See chapter 7.8.
Study Committee		GGL body that meets prior to the beginning of each semester in order to review new applications and check requirements. See chapter 7.7.
Study Portfolio		Helps keep track of your personal training schedule and is submitted to the GGL Office in order to prepare your GGL graduation certificate. See chapter 7.4.
Termin		Appointment
Thesis Advisory Committee	**TAC**	Your supervisor, co-supervisor and in some cases a third individual who give you advice about your thesis. See chapter 8.1.3.
ummelden		Re-register your residence (when you move within the same city). See chapter 3.3.
Universitätsbibliothek	**UB**	University library. See chapter 6.3.3.
Verpflichtungserklärung		Letter of commitment. See chapter 3.6.
Verteidigung		Defence of your thesis.
Visa		Document required for entry into the Federal Republic of Germany (can only be issued outside of Germany). See chapter 3.1.
Vorlesungsfreie Zeit		Lecture-free period (semester break). See chapter 6.2.
Werkvertrag		Contract for services – task-based, time-limited contract. See chapter 4.11.2.
Wintersemester	**WiSe**	Winter semester. See chapter 6.2.
Wissenschaftliche Hilfskraft	**HiWi**	Scientific assistant (with Diploma or Master). See chapter 4.11.
Wissenschaftlicher Mitarbeiter	**WM**	Scientific staff (with Diploma, Master or doctoral degree). See chapter 4.11.

Wohngemeinschaft	**WG**	Flat-sharing community. See chapter 3.2.
Wohnheim		Residence hall, dormitory. See chapter 3.2.
Wohnheimantrag		Housing application form for the previous accomodation. See chapter 3.2.
Women in the Life Sciences	**WLS**	Programme offered by the GGL focusing on women and gender in the life sciences. See chapter 7.6.
Zentrum für fremdsprachliche und berufsfeldorientierte Kompetenzen	**ZfbK**	Centre for Competence Development. See chapter 6.3.8.
Zulassungsbescheid		Confirmation of Admission. See chapter 3.7.
Zweigbibliothek		Branch library. See chapter 6.3.3.

17.2 Appendix 2: Example Project and Career Development Plan

(Example adapted from IRTG1384 Career Development Plan, texts in *italics* are suggestions for your own entries**, you are not expected to adopt all suggestions**)

Name of doctoral candidate:
Department:
Name of supervisor:
Name of co-supervisor:
Name of international mentor:
Date:

Brief overview *of research project and major accomplishments expected:*

Title:

Description (250 words):

Long-term career objectives:

- *To obtain a **doctoral degree** through a research-based programme*
- *To gain experience with modern biochemistry and molecular biology **techniques***
- *To acquire broad **knowledge** of biochemistry and molecular biology*
- *To lay the **foundation for further scientific work**, projects and engagements within the life sciences*
- *Any other goal, you might think of*

What activities are needed to attain these objectives?

- *To plan and undertake a three-year programme of laboratory-based **research***
- *To write a research **proposal** after six months and progress report after 1.5 years*
- *To produce **publications**, both in international journals and as part of the written **thesis***
- *To **collaborate** with other research groups*
- *To participate in **conferences and workshops***
- *To participate in lab **courses** and complementary **training***
- *To pursue **additional activities** so that future employment goals can be achieved*
- *Any other activity, you might think of*

Skills needed to achieve research goals and how they will be developed:

Research skills and techniques:

Experimental Procedure, e.g. technical skills in biochemistry and molecular biology; efficient use of laboratory equipment; safe working in a lab environment

- *Safety training by senior lab staff*
- *Lab courses in Germany*
- *Lab rotations abroad*
- *GGL practical courses*

Experimental Analysis: e.g. self-critical thinking; computer analysis of the results; computer programmes for presentations, etc.

- *Discussions of your work in the lab meeting, training group meeting, GGL section seminar*
- *Milestone meetings with your supervisor, co-supervisor and international mentor*
- *Training in statistical and other software*

MANAGEMENT AND PLANNING SKILLS: e.g. ordering supplies; anticipated use of chemicals, enzymes, etc.; risk assessment where appropriate; developing new experiments; identifying suitable collaborative partners etc.

Within your institute:

- *Communications with group members*
- *Taking on responsibilities for supplies or equipment in the lab*
- *Managing your own budget*
- *Milestone meetings with supervisor, co-supervisor and international mentor; research proposal (2 500 words)*
- *Regular progress reports*

Outside your institute

- *Lab courses*
- *Time and project management course (GGL)*
- *Research period abroad*
- *Communication with members of your training group, GGL section etc.*
- *Working on the GGL Organising Committee*

COMMUNICATION SKILLS: e.g. presenting your results orally and in publications; presenting yourself in the job market; presenting your science to the public

Oral presentation skills (seminars, posters):

- *Presentations in weekly lab meetings and weekly journal club; bi-weekly*
- *IRTG seminar series; annual international IRTG workshops*
- *Volunteering as chairperson during a workshop or conference*
- *Course Presentation skills (GGL)*
- *Conference coaching (GGL)*
- *GGL Annual Conference*

Written presentation skills (reports and scientific papers):

- *Meetings with supervisor and co-supervisor*
- *Weekly lab meetings*
- *Weekly GGL section meetings*
- *Annual international IRTG workshops with poster preparation and presentation*
- *Journal Club*
- *Reference management course (GGL)*
- *Scientific writing course (GGL)*
- *Talking to the media course (GGL)*

NETWORKING SKILLS: e.g. building your own professional relationships

- *Regular seminars outside your own lab e.g. in your research training group, the GGL sections and professional societies*
- *Attendance of training events outside the JLU*
- *Research periods abroad*
- *Attend international conferences with presentation*
- *Course networking and relationship management*
- *Develop and update own website*

TEACHING/SUPERVISION SKILLS: e.g. teaching new methods effectively; mentoring new lab members; leading a team

- *Teach undergraduates and new lab members*
- *Course Applied Didactics (GGL)*
- *Teach within the GGL Curriculum*
- *Take part in the RISE programme of the DAAD*

OTHER REQUIRED PROFESSIONAL SKILLS: e.g. training specific to personal career goals

- *Industry internship*
- *GGL Career Day*
- *Business training (if career in industry is planned)*
- *Leadership training (GGL)*

COMPLEMENTARY TRAINING COURSES

- *English, German or other language course*
- *Any other course, you might think of*

MILESTONES TO ACHIEVE CAREER OBJECTIVES:

List most important milestones and date or period when they should be achieved (separately for year 1, 2, 3) including project related milestones, scheduled trainings and other scheduled activities including:

- Completion of initial literature analysis
- Completion of initial methodology training
- Data collection (as a whole or in defined stages)
- Analysis of data (as a whole or in defined stages)
- Completion of reports and publications
- Completion of thesis chapters
- Attendance of conferences and other events (specific conferences and defined contributions)
- Attendance of trainings
- Teaching loads and periods
- Research periods abroad
- Milestone meetings with the thesis advisory committee

17.2.1 Appendix 3: Oral presentation checklist

Preparation

Getting Ready

☞ **Have you:**

- ☑ prepared your slides or other materials?
- ☑ rehearsed your presentation for friends or colleagues?
- ☑ checked that your presentation does not exceed your time slot?
- ☑ prepared notes or cue cards (numbered in case you drop them)?
- ☑ annotated your notes to emphasise important words and passages?
- ☑ prepared handouts if needed?
- ☑ had everything proofread?
- ☑ seen the room that you will be presenting in?
- ☑ turned off your mobile phone?
- ☑ checked the start time?
- ☑ chosen a professional but comfortable outfit?

Information Technology (IT)

☞ **Have you:**

- ☑ clarified what equipment will be provided and what you need to bring?
- ☑ practised using any unfamiliar technology that you are going to use?
- ☑ saved your presentation onto at least two formats (e.g. disc/USB stick)?

Audience and Questions

☞ **Have you:**

- ☑ introduced yourself to your chairperson?
- ☑ thought about, who is going to be in the audience?
- ☑ thought about questions that you may be asked?
- ☑ found out, who else will be speaking and what they will be speaking about[22]?

[22] Cf. www.vitae.ac.uk (direct link: http://is.gd/Checklist)

17.3 Appendix 4: Sample Supervision Agreement

(As an example supervision agreement format of the IRTG1384)

(This Supervision Agreement is not intended to be a legally binding agreement, but it ensures that students have received, understood and accepted the expectations of their research programme.)

Supervision Agreement

between doctoral student	***Name***
and supervisor	***Name***
at the	***Institute***
from	***Dates***
Co-supervisor:	***Name***
International Mentor:	***Name***
Title of the doctoral thesis:	

We commit ourselves to striving for a productive, trustful and honest working relationship aiming for a good doctoral degree which can be best achieved by adhering to the principles contained in this agreement[23].

The doctoral student's duties are:

- Conduct research with a good lab routine (safety standards JLU)
- Attendance of the IRTG seminars and workshops
- Presentation in the IRTG seminars and workshops
- Attendance of lab courses
- Timely submission of the following reports: research proposal after half a year, progress report after 1.5 years
- Extended stays in the partners' laboratories abroad
- Presentation at an international conference

The supervisor's duties are:

- Scientific guidance and advice, encouragement of independent work
- Quality control, feedback meetings
- Career support and social assistance
- Supplying the infrastructure for scientific work (work bench, equipment etc.)
- Attendance of the IRTG seminars and workshops
- Offering lab courses and lectures

The co-supervisor's and international mentor's duties are:

- Scientific guidance and advice
- Quality control, feedback meetings
- Attendance of the IRTG seminars and workshops
- Offering lab courses and lectures

With our signature, we agree to the terms of the planned cooperation and to work according to the principles of sound academic practice.

[23] Cf. www.ncl.ac.uk (direct link: http://is.gd/Agreement)

Name doctoral student **Name** supervisor

Name co-supervisor **Name** international mentor

A Project and Career Development Plan illustrates the project.

17.4 Appendix 5: Typical Cover Pages of a Doctoral Thesis

This is an example of the first five pages of a thesis according to the doctoral rules and regulations ("*Promotionsordnung*") of Faculty 08 (Biology and Chemistry). Cover pages may vary between the faculties.

Cover page

THE ROLE OF RESEARCH IN THE PROGRESS OF MANKIND

Inauguraldissertation

Zur Erlangung des Grades
Doktor der Naturwissenschaften
Dr. rer. nat.
des Fachbereiches Biologie und Chemie
der Justus-Liebig-Universität Giessen

Vorgelegt von
Diplom-Biologe
Max Mustermann
Giessen, 2013

Page 2

Die vorliegende Arbeit wurde im Rahmen des Graduiertenkollegs *„Enzymes and Multi-enzyme Complexes Acting on Nucleic Acids*" (GRK 1384) am Institut für Biochemie des Fachbereichs *(number)* (Biologie und Chemie) der Justus-Liebig-Universität Giessen in der Zeit von *(month year)* bis *(month year)* unter der Leitung von Prof. Dr. *Name Lastname* durchgeführt.

Erstgutachter: Prof. Dr. *Name Lastname*
Institut für *(Department)*, FB*(number)*
(University, city)
(Address: street, house number, zipcode, city)

Zweitgutachter: Prof. Dr. *Name Lastname*
Institut für *(Department)*, FB*(number)*
(University, city)
(Address: street, house number, zipcode, city)

_____

Page 3

Erklärung

120

Ich erkläre: Ich habe die vorgelegte Dissertation selbständig und ohne unerlaubte fremde Hilfe und nur mit den Hilfen angefertigt, die ich in der Dissertation angegeben habe. Alle Textstellen, die wörtlich oder sinngemäß aus veröffentlichten Schriften entnommen sind, und alle Angaben, die auf mündlichen Auskünften beruhen, sind als solche kenntlich gemacht. Bei den von mir durchgeführten und in der Dissertation erwähnten Untersuchungen habe ich die Grundsätze guter wissenschaftlicher Praxis, wie sie in der *„Satzung der Justus-Liebig-Universität Giessen zur Sicherung guter wissenschaftlicher Praxis*" niedergelegt sind, eingehalten.

Giessen, den _____

_____

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"*Space for any quote.*"

_____

Page 5

Danksagung / Acknowledgments

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19 Notes

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GEFÖRDERT VON

DAAD Deutscher Akademischer Austausch Dienst
German Academic Exchange Service

Bundesministerium für Bildung und Forschung