



RESEARCH CAREERS --- IN GERMANY

A guide for international
postdocs and
experienced researchers



AN INITIATIVE OF THE

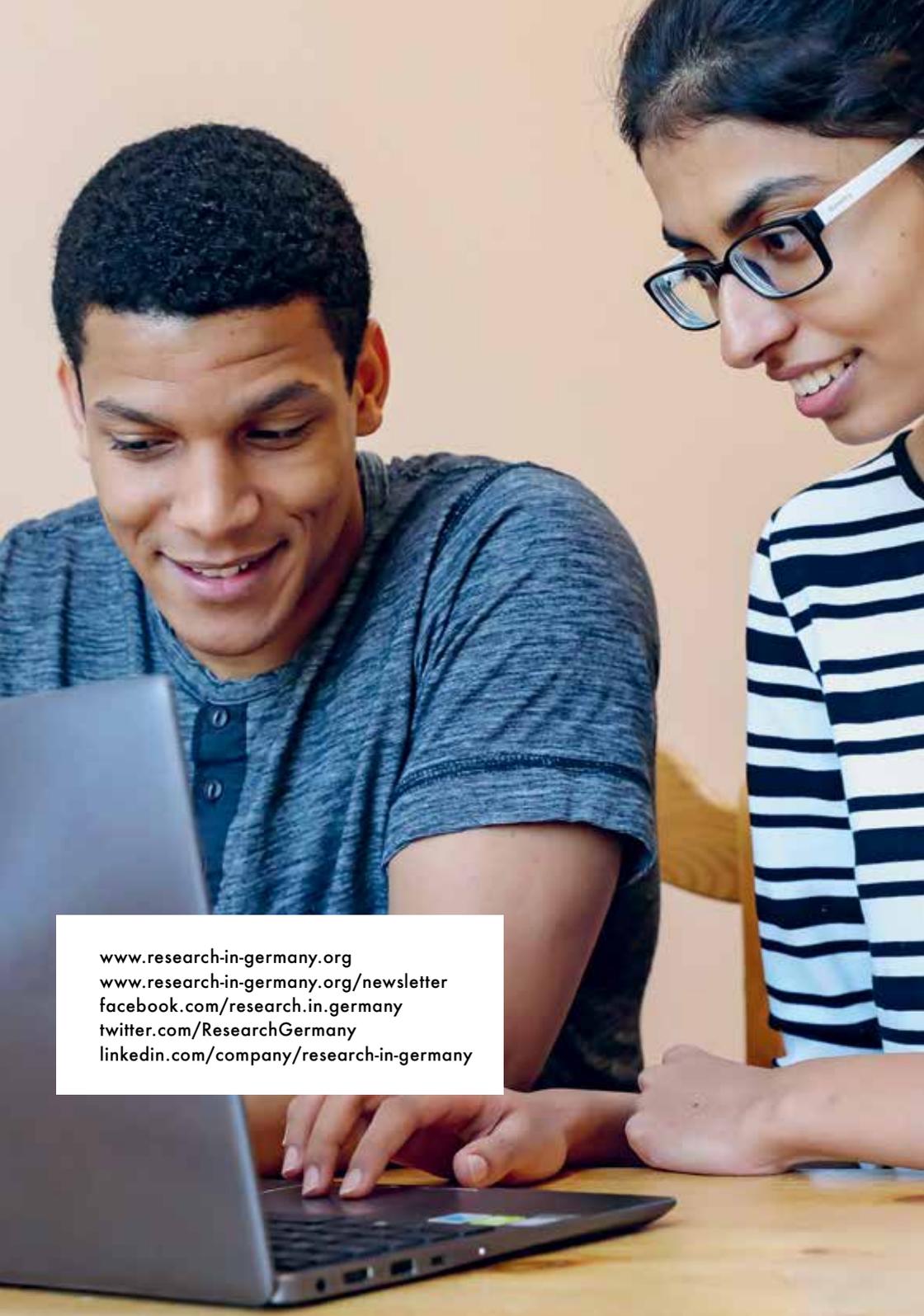


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DEAR READER,

Whether you have just completed your PhD or are an established researcher: take the next step on your career ladder in Germany! Broaden your scientific experience in one of the world's most research-focused countries. Let us show you what the individual steps on your career path might look like in Germany and how others have experienced and mastered them.

NEED SOME SUPPORT?

We have even more information
for you on our website

www.research-in-germany.org

5 GOOD REASONS WHY



1. Germany's universities are considered among the best in the world.



Why not benefit from Germany's global reputation and long tradition of outstanding academic research and teaching? Germany's great universities and research institutions have much to offer!



2. Germany is open to innovation

Germany is one of the world's top innovators, as well as home to some of the world's leading science and technology clusters. This provides the ideal springboard for a successful research career.

4. Good support and funding opportunities

Simplified regulations apply to highly-qualified international researchers – and their family members. You will also find a wide range of support available from funding organisations.

3. Strong networks and interdisciplinary research

At Germany's higher education institutions and research centres you will have the chance to work with researchers from all over the world on all kinds of interesting projects, many of which will be interdisciplinary in nature.



5. Opportunities to research and teach EU-wide

A German residence permit for research purposes also allows you to spend a limited period of time researching and teaching in almost any other EU country.

Career options for postdocs

Find out where and how you can work as a postdoc in Germany. Want to know more about a particular step on your career path? Then follow the signposts below.

WHERE CAN I WORK?

Three main actors are responsible for science and research in Germany:

- **Universities**, of which there are around 400 in Germany.
- **Non-university research organisations** like the Max Planck Society or federal institutions such as the Robert Koch Institute.
- **Research companies**. They account for more than two thirds of research and development spending in Germany, making them the biggest actor in R&D.

WHAT SHAPE CAN A POSTDOC CAREER TAKE?

The phase between completing your PhD and obtaining a position as an established researcher normally lasts at least six years and includes different postdoc positions. Here is an overview:

1. During your **first postdoc phase**, you will be involved in a research project (usually as part of a team) run by your professor or institute. At a university, you will additionally teach and support students. Interested?

➤ Then go straight to page 8.

2. From roughly your fourth postdoc year, you should have sufficient experience to qualify as a **junior professor** or to **lead a group of young researchers**. In industry, this phase also involves

taking on some initial personnel and budget responsibility.

➤ Read from page 16 how to maximise your opportunities as a researcher.

3. Once you have completed this phase successfully and/or have obtained your habilitation (postdoctoral lecture qualification), you will have acquired **professorship eligibility**, which is an essential prerequisite for being appointed to a chair at a university. Alternatively, you will be qualified to take on further leadership positions in research.

4. The next step will frequently involve you being given a **professorship – generally a non-permanent post – or a position as visiting professor**. This will enable you to prepare yourself even better for senior research positions. In research companies, you will now be taking the next step up the career ladder.

➤ From page 25, you can discover what you should know as a visiting scholar.

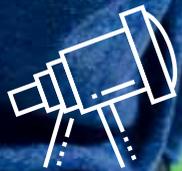
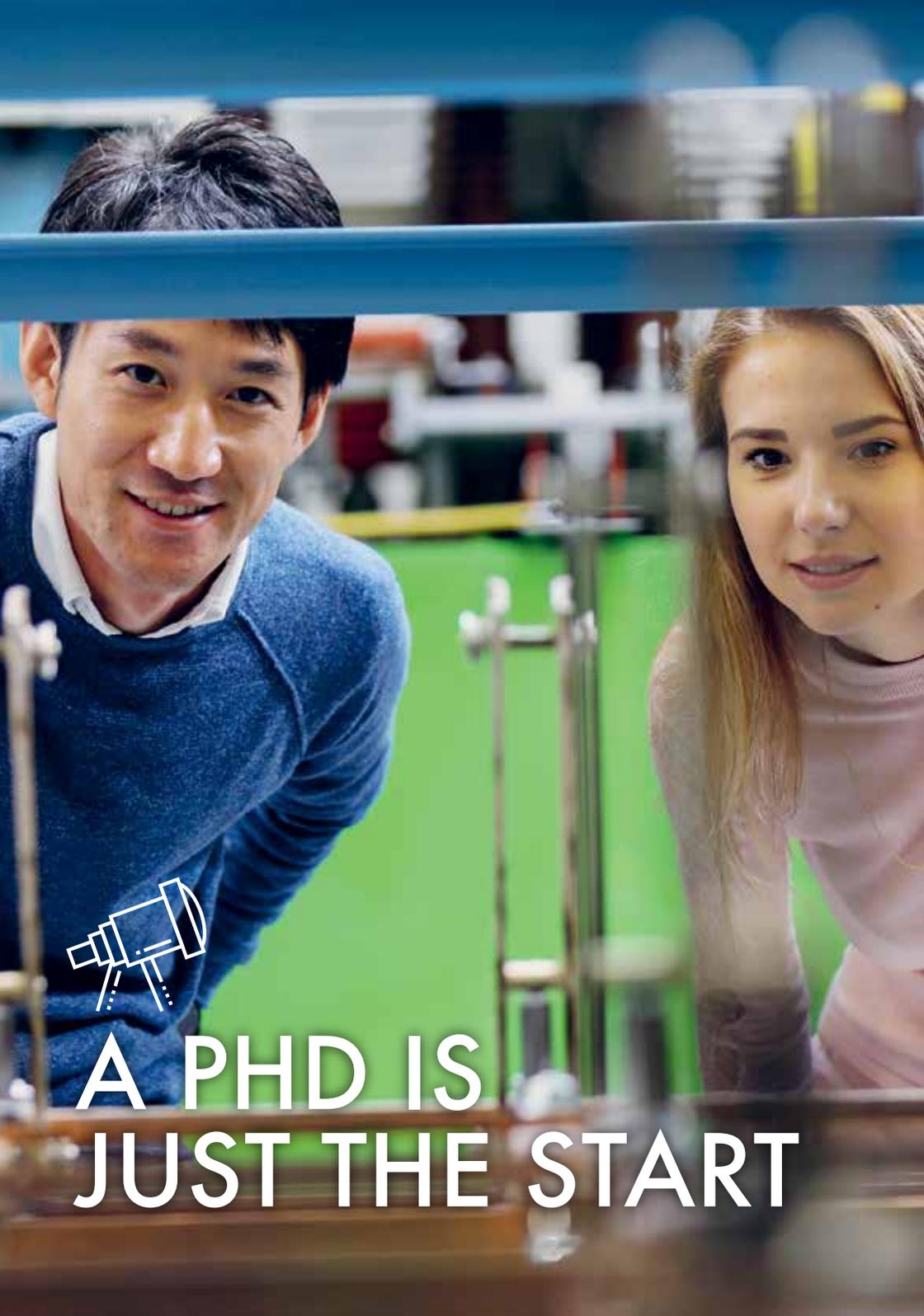
5. In the academic world, you will have reached the **top level** once you have been given a tenured professorship. Similarly, you will be appointed to a top management position at a research institute or a research company.

➤ More about getting beyond the postdoc level can be found from page 26.

6. Alternatively, you may decide at some point in your career to start up your own business.

➤ Helpful information about starting a new business can be found from page 32.

Our career game in the middle of this booklet illustrates what your career path might look like. Why not give it a try!



A PHD IS JUST THE START

Find out here which opportunities are open to you as a newly-qualified postdoc in Germany, and what the benefits of a career within or outside academia are.



IN THIS CHAPTER:

A research career **within** or **outside** academia?

What is life like as a postdoc in the academic world?

What do postdocs do in industry?

Will my PhD be **recognised** in Germany?

Starting out as a postdoc in Germany

Brent Raiteri came to Germany straight after completing his PhD in Neuromechanics at the renowned University of Queensland in Brisbane, Australia. “I already began looking for a suitable postdoc vacancy during the last year of my PhD”, Brent explains. The Australian has been working at the Ruhr-Universität Bochum (RUB) since 2016 and is very happy that he decided to make the move to Germany. He is a postdoc researcher at the Faculty of Sport Science. “The project at the RUB was the best fit for me because it gave me the most independence,” says Brent.

It is a good idea to start thinking early about your next steps after completing your PhD. Of course, you first need to figure

out what your goals for the future are. Brent decided to embark on the postdoc route: “A postdoc position gave me the opportunity to pursue my passion, although it meant that I had to be open to move overseas.”

COMING TO GERMANY AFTER YOUR PHD

If like Brent you just want to carry on researching and exploring your chosen field in the greatest possible detail, then now – i.e. straight after your PhD – is the perfect time to go abroad. And Germany is certainly a very good choice: **it is an outstanding location for science and research**, so spending some time here will give you an excellent start on your chosen path.



”

Embrace the German culture and its people as they are lovely, learn to speak the language, and enjoy the challenges and experiences of living abroad! You might enjoy it so much that you decide to stay.

Dr Brent Raiteri (30) from Australia is a postdoctoral researcher at Ruhr-Universität Bochum

”

A RESEARCH CAREER WITHIN OR OUTSIDE ACADEMIA?

However, deciding to come to Germany after your PhD is only the first step. You will also need to consider whether you want to pursue an **academic career** at a university or would rather prefer a research position at a non-university or state institution. Or whether to indulge your passion for science and research while working for a **research company**.

Brent found it easy to decide: “I knew that I wanted to stay in academia because of my love for research and science.” He went for the university option. “I enjoy teaching as well as research,” he explains. **Teaching is in fact one of the big differences** between doing a postdoc at a university and working as a postdoctoral researcher at a non-university or company-based research institute. At universities, postdocs also **gain experience in**

supporting students, administrative tasks and the usual academic key features such as publishing and **applying for awards**.

That said, prizes and academic publications are also in demand at **non-university**, publicly-funded **research institutions**. These are frequently linked closely to universities. Sometimes they are even based at universities, with their leading researchers also working as university professors.

These aspects rarely play much of a role in research-based companies. Research findings tend to be used only internally and are not made available to the general public, so there is no need for publication. Naturally, postdocs may sometimes be asked to mentor new team members – however, this is not comparable by any means to the teaching duties that researchers have at a university.

What you should clarify before applying:

What special skills, knowledge and past successes can I offer?

What is the subject of the advertised project, and what interests me particularly about it?

Who is in the research group to which I am applying?

What is the profile of its members?

What is special about the institution or company to which I am planning to apply?

What are its research objectives, and what form does research there take?

LIMITED TRANSFER OPTIONS

Whether you decide after your PhD to continue your career at a university or non-university institute, or to switch to a research position in industry, will generally set your course for the future. This is because there are limited options in most disciplines for transferring between the two.

It is hard to move back from industry to a university **because you will lack the necessary publications and the required teaching and administrative experience**. Depending on your subject area, it can also be an equal challenge to launch a new career in industry after working for many years at a university.

Your chances will be better if you have experience as a **team leader**, ideally with budget responsibility. It is also easier for **engineers** and for those who work at application-oriented research institutes to switch to a career in industry. If you wish to pursue a **career at a university of applied sciences**, professional experience outside the academic world is not only desirable but an essential prerequisite.

WORKING AS A POSTDOC IN ACADEMIA

For a career in academia, several postdoc positions at a university or a research institute are normally **required if you wish to qualify later for a professorship or management role**. But what is it like working as a postdoc at a university? “No two days are the same when you are a postdoc,” explains Brent. “Sometimes I might spend most of the day preparing for teaching and actually teaching, and other times the day might be purely research-focused. But mostly, I spend more time on research than I do on teaching, even during the teaching semester.”

Work at a research institute is by definition even more research-oriented. As a rule, postdocs here work in a team on a project



that is normally assigned to them. Just like at a university, postdoc jobs here tend to be part-time and temporary.

Temporary contracts are in fact a major issue. According to Germany's twelve-year rule, academic staff who have completed a six-year PhD phase can normally be employed for only an additional six years at a university, on a temporary contract. This is because postdoc positions are intended primarily as a means of obtaining **further academic qualifications** and as a springboard for the next career step.

The **salary** earned by a postdoc at a university or non-university research institute is generally based on Germany's collective agreement for civil service employees. Currently, the gross starting salary for a full-time position is roughly 4,000 euros per month.

WORKING AS A POSTDOC IN A COMPANY
Naturally, the twelve-year rule does not apply in research-based companies. Nonetheless, postdocs are often given temporary contracts here, too, albeit for the most part on a full-time basis.

Employers for postdocs can be found first and foremost in the **research-intensive sectors**: in Germany, these are the automotive industry, electrical engineering companies, the chemical and pharmaceutical industry, and mechanical engineering firms. Big companies in particular invest a lot of money in their R&D departments.

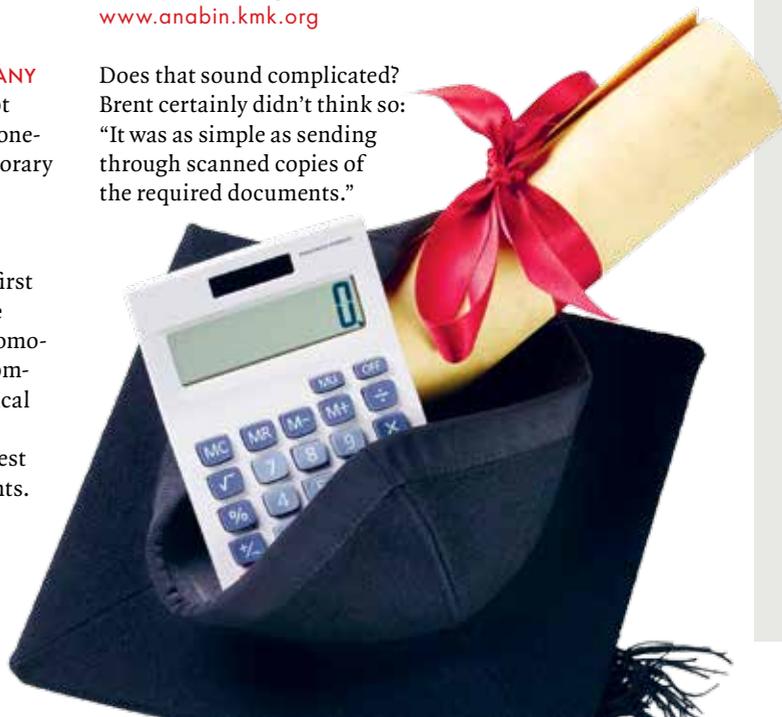
How much you will earn as a postdoc in industry will depend on the

sector in question and on the situation of your desired company, though it will also reflect your qualifications and experience. As a rule, salaries in industry tend to exceed those of postdocs in academia.

WILL MY PHD BE RECOGNISED?

Of course, there is one important question you will need to clarify in advance: will your doctorate be recognised in Germany? You should be aware that academic degrees are legally protected in Germany. In their state-level higher education laws, Germany's 16 states have stipulated clearly when a title can be used in Germany. Information about the applicable legal situation can be obtained from the science ministry of the state in question. You can gain an initial insight of whether and how your PhD will be recognised, and find links to advice centres, by consulting the anabin database: www.anabin.kmk.org

Does that sound complicated? Brent certainly didn't think so: "It was as simple as sending through scanned copies of the required documents."



POSTDOC WITHIN OR OUTSIDE ACADEMIA?

UNIVERSITY/NON-UNIVERSITY INSTITUTE



You can engage in either **applied or basic research**.



You will enjoy freedom of **research and teaching**.



You will have **regular teaching duties**.



It is important for your future career that you **regularly publish** research results.

INDUSTRY/RESEARCH COMPANY



Your research contributes directly to the **development of new products or solutions**.



Your research work will be prescribed and oriented towards achieving **corporate goals**.



There are **no teaching obligations**.



There is **no pressure** to publish.

Have you acquired some initial postdoc experience? Then you should take the next step and become an established researcher.



**BECOME AN
ESTABLISHED
RESEARCHER**



LEARN ALL ABOUT:

Make your way to a leadership position

How to network properly

Career opportunities for female scientists

Make your way to a leadership position

You have successfully finished your first postdoc position? Great! Now is the time to do another important step and qualify for a leadership position. Besides first-class publications, lectures at conferences and a good network of contacts, a period of research abroad is an experience that is highly valued.

Emmanouela Filippidi took this step. She has been researching in Dresden since 2019; in her first year she is not only a postdoctoral scholar at the Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG), but also a visiting scientist at the neighbouring Max Planck Institute for the

Physics of Complex Systems (MPI-PKS). She is delighted by the many opportunities for interdisciplinary cooperation that this work opens up for her: “Rarely have I seen such an open environment with shared group meetings between experimentalists and theorists, between biologists, biochemists and biophysicists.”

“Finding funding at the right time,” was what originally brought Emmanouela Filippidi to Dresden. “The Max Planck Institutes have some allocated funding for short-term postdocs and long-term visitors. This practical aspect was important as it enabled me to come to Germany.” Emmanouela was lucky: “As such, the Max Planck Society paved my way into the European research community.”



Germany and MPis attract motivated scientists, and Dresden’s scientific community in particular is so active, with locally-organised conferences that bring speakers from all over the world, making it easy to stay up to date!

Emmanouela Filippidi Ph.D., (36) is a visiting scientist at the MPI for the Physics of Complex Systems, Dresden

NETWORKING PROPERLY

It is not only your professional abilities that will determine your career prospects. Social skills are also important. And now more than ever, this means building up your own network. You don’t have a network yet? Then here are some tips for you:

The right time to begin networking – if you haven’t already – is **NOW**.



Regularly attend conferences, fairs or other important networking events.

Nothing beats a **personal contact**.

Make sure that you **get in touch soon**

with the people you meet at an event, and maintain the contact. You can for example use LinkedIn, the network for professional contacts: www.linkedin.com

Don’t worry about how you come across to others. **Simply be yourself.**

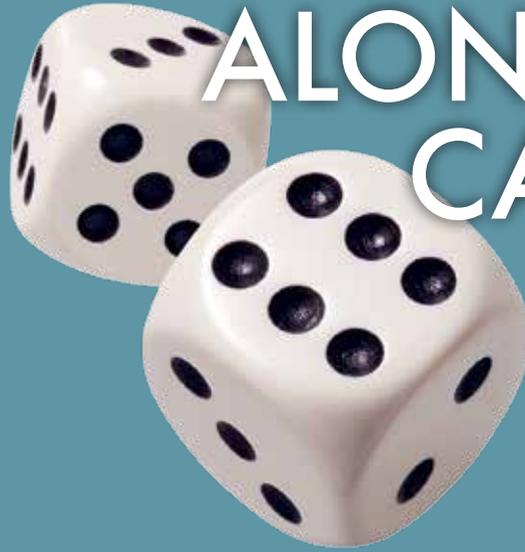


Start with whichever person is best connected. This may be your doctoral supervisor. Have him or her put you in touch with his/her network.

Expand your **network!**



STEP BY STEP ALONG THE CAREER PATH



Rules: Each player is given a token. There is one dice. Whichever player throws the highest number is allowed to start. You then throw again and can move your token forward the number of spaces shown on the dice. Players landing on a change field must read and follow the instructions. The winner is the player who first reaches one of the Leading Scientist spaces!

START
Begin your career as a researcher and scientist

You have won a renowned prize for your dissertation.
Move forward one space.

Your first postdoc position: for the next two years you will be a **research associate** at a university.

Great! You have landed yourself a **research associate** position on a DFG-funded research project. Your contract is for five years!

You are part of a team at a major **research institute**, working closely with partners from universities and industry on a highly interesting project.

You have applied for a job at a large **research-focused company** and are spending three years acquiring experience in applied project research.

You accept a **tenured professorship** at the university of your choice.

You become the **director of a renowned research institute**.

You become the **head of your company's research department** and a member of the **executive board**.

Wow! Just one final step and you have made it to the top position! Throw again!

You become head of a research **group** at your research institute.

You have been awarded a research grant by the DfG and can continue your research at an institute of your choice in Germany.
Move forward two spaces.

Your research looks highly promising. With the help of your research institute, you launch an **innovative start-up**.

Your company is promoting you to the position of **deputy head of its research department**.

A **temporary professorship** allows you to prepare yourself for a senior academic position.

You successfully meet the requirements for a professorship or leadership position. Throw again!

You have been awarded a **research grant** for a neighbouring European country. It allows you to pursue your own research idea.
Move forward two spaces!

Thanks to your excellent research project, you will be accepted onto the DFG's Emmy Noether Programme and will lead your own **young research group**.

Congratulations! You have been appointed as **junior professor** at the university of your choice!

Phew, you've completed the first big step! Now you have joined the ranks of the established researchers. Throw the dice again!

Dresden is Emmanouela's second stop on her postdoc path. Previously she was in the USA, where she studied at Harvard and Boston University and did her PhD in New York. She subsequently spent four years conducting research at the University of California in Santa Barbara. This gave her the experience she needed as a postdoc to embark on the next stage of her career.

BECOMING ELIGIBLE FOR A PROFESSORSHIP

To qualify for a leadership position as an experienced postdoc, you will need not only an outstanding PhD and (international) research experience but also a very good list of publications and excellent references. Your next step is to qualify for **professorship eligibility**. This is also a requirement for many other leadership positions in science and research.

The formal path to this qualification is as follows:

- a university degree
- a special aptitude for academic work (usually demonstrated by an outstanding PhD)
- teaching abilities (experience as a teacher)

In addition, and this is the crucial point, you will have to provide evidence of **further research experience** – done either in the university or non-university sector, with or without an academic position, on scholarships or within particular qualification programmes. In Germany, there are various ways to achieve this:

- via a habilitation
- via a junior professorship

- by running your own group of young researchers
- by conducting research work in a non-university setting

Let us take a closer look at what these individual options involve.

HABILITATION

It was long the case in Germany that a professorship could only be reached via a successful habilitation. For young German academics, this is still the main access route to a senior academic position. This conventional path to professorship eligibility requires you to write a **habilitation thesis** (similar to your doctoral thesis) and undergo an examination procedure that will determine whether you have what it takes to teach in an academic field.

A habilitation can also be obtained on a cumulative basis, i.e. by publishing several relevant papers in renowned journals. The exact requirements are set down by universities in their habilitation regulations.

JUNIOR PROFESSORSHIP

As German science and research has become more international, other ways of



qualifying for a professorship have been created. One of these is a junior professorship. This step on the career ladder to a leading research position gives you **academic independence** at a relatively early stage of your career: as a junior professor, you will enjoy freedom of science and teaching, and will also be a member of the university's teaching staff. That said, such positions are temporary, are evaluated after two or three years, and normally offer no tenure track to a full professorship.

RUNNING YOUR OWN GROUP OF YOUNG RESEARCHERS

Like a junior professorship, running your own group of young researchers offers a chance to do **independent scientific work at an early career stage**. As the head of a research group, you will have your own staff and budget, albeit only for a temporary period. Young research groups are usually very well equipped, so such leadership positions are in great demand and highly competitive. Naturally, your focus in this role will be on research, so you may need to acquire teaching experience elsewhere.

RESEARCH WORK IN A NON-UNIVERSITY SETTING

You can also qualify for a professorship by conducting research work in a non-university setting, such as **qualified research in a company**. In the engineering disciplines in particular, a position in research-based industry is a promising route to a university professorship. In this field, many professorship appointments traditionally go to engineering postdocs who research and work in industry.

Working in a company is also a good way to meet the requirements for an **appointment as a university of applied sciences professor**.

WHAT ELSE IS IMPORTANT?

To reach one of these positions, you have to meet not only the formal criteria but also other requirements. As a rule, the following will be expected:

- your own excellent research project
- high-level publications in internationally renowned journals
- relevant postdoc experience
- academic independence and
- international research experience

What else is helpful? A decent reputation and good contacts, so you will certainly benefit from a strong network (see illustration on page 19).

POTENTIAL EARNINGS

At universities and non-university research institutes your salary will be in line with Germany's collective agreement for civil service employees. As a junior professor, this means you will earn a basic salary of between 4,600 and 5,200 euros gross per month, depending on the federal state in which you are employed. Heads of young research groups, depending on their professional experience and their classification, will receive basic remuneration of between roughly 4,400 and 5,200 euros gross per month. What you are paid in industry will be determined by the sector in question, your qualifications, any collective agreement that may be in place – and by your negotiation skills.

Female scientists often face gender inequality at different levels.

Dr Phuong Glaser has been coordinating the International Female Scholars Mentoring Program (IFS Mentoring) at the University of Cologne since 2016. Founded in 2012 at the Welcome Center and since 2015 affiliated at the Human Resources Department for Researcher, this programme was the first in Germany to exclusively address female scientists from abroad.

Dr Glaser, why do international female scholars require particular support? Doing research and building up a career in a foreign country can be very challenging. For example, there is a lack of social contacts and support, as well as of information about the formal and informal structures in German academia and the requirements. Female scientists often also face gender inequality at different levels, which leads to their underrepresentation in leading positions.

IFS offers hands-on support to female scholars – what does it look like? The IFS Mentoring Program matches the scholars with experienced mentors from the desired working fields in one-on-one mentoring relationships. This mentoring is accompanied by career-relevant workshops and networking meetings, and by individual coaching sessions, if required. Furthermore, the support provided by the programme covers psycho-social aspects such as encouragement and confidence building.

What should female scholars consider when they come to Germany? Scholars should start by finding out whether there are programmes to support them at the target university. Upon arrival, they should expand their networks, for example by joining groups of like-minded female scholars. Coaching is worth applying for, especially if you face a challenging situation at work or in your personal life. Learning German and frequently reflecting on possible cross-cultural differences would be very helpful. If you are planning to stay longer in Germany, it is important to prepare for different career options, both in and outside academia.

www.ifs-mentoring.uni-koeln.de



A POSITION AS VISITING SCHOLAR TO LAUNCH YOUR CAREER

A period spent working as a visiting scholar at a university or research institute can also be a good way in. This kind of research stay will give you the chance to make some initial contacts in Germany, while at the same time gaining an insight into the country's research and higher education landscape. What is more, it can help you decide whether to pursue a research career in Germany, or to prepare yourself for the next step along your career path.

In principle, international postdocs are welcome to spend a period researching or working as a visiting scholar **at any university or research institution**. What matters is that you establish contact with your desired host, and that your host is both willing and able to admit you as a guest researcher.

FROM VISITING SCHOLAR TO ASSISTANT PROFESSOR

Research stays and visiting scholar positions at universities, just like visiting professorships and visiting lectureships, are supported by **grants** or **research funding** or are advertised as temporary positions. Depending on the profile of the institution in question, such stays can last anything from a few months to several years, and may either focus on research or also include teaching duties. In this way, German institutions give you an opportunity to add an international component to your research experience and to come one step closer to achieving your own career goals.

This is exactly what Emmanouela Filippidi did. She took full advantage of the time she spent as a visiting scientist at the MPI in Dresden: "I think I have made vast progress

WHO FUNDS INTERNATIONAL VISITING SCHOLARS?

14,538

German Research Foundation (DFG)

14,176

German Academic Exchange Service (DAAD)

2,266

Alexander von Humboldt Foundation (AvH)

1,364

Other German funding organisations

712

Foreign funding organisations

In total (2017) 33,056

Source: Wissenschaft weltweit 2019, postgraduate and postdoctoral scholars

in each of my goals," Emmanouela sums up in retrospect. "I have several goals: I want to gain a **deeper understanding** and establish some technical knowledge; obtain preliminary data so as to improve the feasibility of my own **future proposals**; find scientists who share my excitement and knowledge about similar topics and may therefore turn out to be **future collaborators**. I want to **talk to junior group leaders** about the pitfalls to avoid when setting up a group, and last but not least, have some time to find out more about my future environment to ensure as smooth a transition as possible." So what will Emmanouela's next career step be? She has already been accepted as an assistant professor at the University of Crete.

As an established researcher, you are now on the home straight, on course for a professorship or leadership position at a research institution or research-based company.



MOVING BEYOND THE POSTDOCTORAL LEVEL



IN THIS CHAPTER:

- Life as a professor in Germany
- A checklist for negotiating your professorship appointment
- Leading a research group
- Research in industry

Ready for the next step

Are you an experienced postdoc who meets the **requirements for a professorship**, have already conducted research abroad, and perhaps even have experience leading your own team of young researchers? Then you are ready to take the next step beyond the postdoctoral level.

This is the path that Eleftheria Paliou followed: after obtaining degrees in Greece and the United Kingdom she took her doctorate at the University of Southampton. She then held postdoc positions at the FU Berlin, the University of Evora in Portugal, and at Heidelberg University in Germany. The PRIME funding programme gave her the chance to conduct research as a visiting scholar at University College London. Now she is a professor of computational archaeology at the University of Cologne.

So why did she **choose Germany**? “I had a positive experience as a postdoctoral researcher in Germany,” explains Eleftheria. “Compared to many other countries, Germany offers more **opportunities for research funding** of smaller projects, research groups and indeed large collaborative research initiatives (e. g. DFG Collaborative Research Centres).” And what is more: “Germany is centrally placed in Europe, which makes it easier to keep in contact with my international colleagues.”

PROFESSORSHIP IN GERMANY

Once you have become eligible for a professorship (see “Be- come an established

researcher”), you will normally proceed towards your career goal – namely a professorship – by working for a temporary period as an acting or visiting professor, by obtaining a funded professorship position, or by qualifying for funding programmes for research stays abroad, as Eleftheria did.

However, there are also **differences when it comes to standard university professorships**: for example, there are the W2 professorships (roughly equivalent in status to an associate professor/senior lecturer) for first-time appointees like Eleftheria; these come with little (or no) staff and generally more restricted equipment. And then there are the W3 positions, which are usually linked to a chair (as with a full professor/reader). The holder of the chair represents their subject in research and teaching, has their own budget and several employees.

Incidentally, the “W” stands for “Wissenschaft” – the German word for academia – while the numbers refer to the salary groups of the Federal Salary Scale Ordinance, which regulates the basic salaries and benefits for university teachers.



” Taking advantage of the numerous research funding opportunities in Germany to develop further independent research and leadership skills would benefit those seeking a permanent professorship or senior research position.

Dr Eleftheria Paliou (41) is a professor of computational archaeology at the University of Cologne

FREEDOM OF SCIENCE AND RESEARCH

No matter whether you are an acting professor, a visiting scholar or a W2 or W3 professor, you will enjoy full **freedom of teaching and research** in Germany. As part of the German constitution, this is an unshakable right.

A WIDE RANGE OF DUTIES

So what duties does a professor in Germany actually have? Eleftheria explains: “At my university all professors have a teaching load of nine hours per week. **Administrative tasks** may include participating in meetings and committees, interviewing job candidates, advising students, organising teaching and research events, managing budgets etc. Besides, there are other tasks involving service to the community, such as participation in editorial boards, which also take up a considerable amount of time.”

How does she cope with all of this? “Professors in Germany are usually **supported by research associates** who reduce the burden by carrying out some of the administrative tasks.” Does this leave the professor any time to devote to research? “There is usually less time for research compared to a full-time research position, possibly with the exception of the scheduled research semesters (once every four years). Nowadays, I am mostly involved in collaborative research projects.”

A PROFESSORSHIP AT A UNIVERSITY OF APPLIED SCIENCES

Universities of applied sciences focus primarily on teaching practical and application-oriented skills. If you wish to become a professor at one of these institutions, you will need to demonstrate that you have **several years of professional experience** in a

non-university setting. At these higher education institutions, teaching is geared more towards practical application. In addition, however, they also pursue applied research.

LEADING A RESEARCH GROUP

Naturally, research is the central focus for heads of research groups. They have their own basic equipment, research and teach autonomously, are responsible for **their own research group** and enjoy academic independence at a university or non-university research institute.

If you are a research group leader who meets the requirements for a university professorship, or if you are already a university lecturer, you can usually expect to be paid like a professor.

Research group leaders can also be appointed **to a professorship** at a university at the same time. They will then have the same rights and duties as the other university lecturers, and will also be involved in teaching.

RESEARCH IN INDUSTRY

Positions are also available for established researchers outside academia. It is not always easy to switch to industry after working for many years at a university; whether the transition is successful or not will depend entirely on your individual profile. Is your research experience a good fit for the job in question, and do you have the specific skills that are needed? If so, continuing your career in industry may be an interesting option.

The position you are applying for will have a specific profile, involving various essential qualifications and abilities. As a **team leader**

for example you will head an (international) team of researchers. You will work on innovative solutions to concrete problems, develop standards, or come up with alternatives to existing processes. You may also be responsible for coordinating the processes of different departments, such as R&D and management, purchasing, production and sales.

What you will **earn** will depend on your position and your duties, on your qualifications and experience, and on the company where you are conducting your research. Besides your basic salary, you will often receive performance-based bonuses and additional company-specific benefits.

AND WHAT WILL BE EXPECTED OF YOU?

If you want to land yourself a leadership role in science and research, you will of course need a wide range of qualifications and skills, a good reputation and excellent contacts.

What does Eleftheria believe is important? “**Demonstrated research leadership skills** at the postdoctoral level and the ability to successfully apply for research funding are normally very much appreciated by appointment committees,” she explains. And naturally “a good publication record, teaching experience (when it comes to teaching positions) and in some cases certain in-demand specialised research skills are also important if you want to achieve an academic leadership position in Germany.”



CHECKLIST

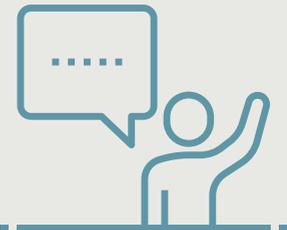


for negotiating your professorship appointment

What you should discuss if you are offered a professorship.



- How many (non-) academic staff will I have?
- What sort of budget for equipment and materials can I expect?
- Which rooms and infrastructure will be available to me?
- Will my travel expenses be covered?



- Will I have (temporary?) civil servant status, or will I be an employee?
- What teaching load can I expect?
- What arrangements will be made for my retirement pension/health insurance?
- Are any additional allowances paid?
- Am I allowed to take on any secondary employment?
- Which rules apply to the research semesters?
- Will any of my relocation costs be reimbursed?
- What will my official title be?

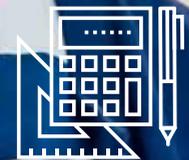


- Which salary bracket will apply to my position?
- Are any research allowances or other special benefits paid?
- Which pay level can I reach?

Your career path is not limited to a job at a university or company. Turn your creative ideas into reality and find solutions to practical problems – by starting your own business.

**IN THIS CHAPTER**

- University-based start-ups
- Spin-offs from research institutions
- Collaboration with industry
- Support for start-ups



**SET UP YOUR
OWN
COMPANY**

Become a doctoral entrepreneur

Do you have a convincing idea for a product or service? Then perhaps you should think about **how to turn this idea into reality**.

Germany provides a great deal of funding for innovative knowledge- and technology-based start-ups, be they at universities, a research institute or in industry. This is a good place to start.

A LAUNCHPAD FOR UNICORNS

Things could not have got off to a better start for Celonis: this software company founded by three students at TU Munich in 2011 has revolutionised the industry. It uses process mining technology based on artificial intelligence (AI) to optimise internal company processes. When the firm was first valued at over one billion dollars in 2018, it became one of that rare breed of start-ups known as a unicorn. The students who started the business were supported at an early stage by Germany's state funding programme EXIST (see overview on the opposite page); it provides not only funding but also advice and active support, specifically to businesses started at universities and research institutions.



STUDENTS AND GRADUATES ARE THE MOST ACTIVE ENTREPRENEURS

As our example shows, it makes no difference at **what point in your professional and academic development** you decide to start your own business. Research-focused start-ups and spin-offs are launched not only by established researchers. On the contrary, spin-offs at universities are most often created by graduates and students. And four out of five young entrepreneurs who start a new business based on an innovative and/or growth-oriented idea also have a university degree.

UNIVERSITY-BASED START-UPS

It is not uncommon for students to go straight from lecture theatre into business, in other words. These days, German universities are an important breeding ground for entrepreneurs wishing to establish an innovative and research-oriented company.

More and more universities are involved in providing funding for start-ups. Most major universities have created structures designed to support scientists and researchers wanting to launch a new business by providing them with knowledge, expertise, networks and advisors. Many also give assistance when it comes to sourcing funding, as well as coaching and supporting the young entrepreneurs through the initial stages of the start-up process.

Many universities also provide practical help such as making office space, infrastructure, instruments or laboratory equipment available so that their students or academics can develop their business ideas.

Where does the money come from?

THE MOST IMPORTANT FUNDING PROGRAMMES FOR INNOVATIVE START-UPS:



High-Tech Gründerfonds (HTGF):

This is Germany's biggest investor when it comes to early-stage funding for innovative and technology-oriented new businesses. Its main source of finance is the Federal Government, followed by the KfW Group. In addition, the HTGF offers active support with establishing a new company: www.htgf.de



EXIST – University-based start-up programmes:

This state-funded programme supports academics and students wishing to start a research-based business by providing them with grants and other types of funding for staff, equipment, development activities and start-up costs, as well as with coaching and seminars: www.exist.de



INVEST – Venture capital grant:

If you acquire private capital from business angels, they will have part of their investment reimbursed tax-free if they inject at least 10,000 euros of venture capital into your business: www.invest-wagniskapital.de



SprinD – Agency to promote breakthrough innovations:

SprinD is keen to identify highly-innovative research projects with disruptive potential and will then support their development and help them to establish themselves on the market. Innovation competitions are staged to find the brightest entrepreneurs with the best ideas and explore the potential of existing research and development work: sprind.org



547,000 entrepreneurs launched their own business in 2018. 11 percent of them were **innovative entrepreneurs** engaged in R&D, while 22 percent were **digital entrepreneurs** using digital technologies.



1,776 university-based start-ups were recorded by the start-up radar compiled by the Stifterverband in 2017.



Graduates are involved in more than 50 percent of university spin-offs, while **students** take part in 43 percent.



Roughly **one in four university-based start-ups** is a business in the **IT services sector**, while the figure for new businesses in general is around 30 percent.

In 2018 **Celonis**, a spin-off from the **TU Munich**, became the first EXIST-funded **"unicorn" start-up**, i.e. a business valued at over one billion euros.



SPIN-OFFS FROM RESEARCH INSTITUTES

If you work at a non-university research institute you can likewise count on support when **transforming your research results into a marketable product**. Big research organisations have also established in-house structures so as to advise their researchers on how to start knowledge- and/or technology-based companies.

Max Planck Innovation for example accompanies its scientists from the initial conceptualisation stage to the launch of a spin-off by providing them with professional coaching. As a result, the Max Planck Society has produced more than 150 start-ups since 1990.

Fraunhofer also makes targeted support available to institute-based start-ups and spin-offs. Fraunhofer Venture, which is responsible for spin-off and investment management for Fraunhofer-Gesellschaft, offers a range of services that include complete support and advice from idea to business launch, as well as help with finding funding.

The Leibniz Association and the Helmholtz Association follow a similar approach: they also have special programmes to fund spin-offs.

COOPERATING WITH COMPANIES

Research-focused companies are also keen to cooperate with innovative entrepreneurs. Especially large technology firms like Bosch and car manufacturers such as Daimler and Audi are interested in collaborating with young start-ups within their respective sectors. They have set up special platforms to provide financial and other forms of support to external and internal innovative new businesses and to explore possible cooperative ventures. For entrepreneurs, it is well worth taking a closer look at what is on offer.

FUNDING OPPORTUNITIES

Even the best idea will remain but a vision if funding cannot be found. Start-up support is thus a key issue. Germany boasts a whole raft of state support measures that encompass not only financing but also coaching, advice and supervision. Generally speaking, the most important point of contact for budding entrepreneurs is the state-owned KfW-Bank, which has its own programmes especially targeted at innovative start-ups and spin-offs (see overview on page 35).





About „Research in Germany“

“Research in Germany” is an initiative of the Federal Ministry of Education and Research. It presents Germany as a country of research and innovation and creates a forum for international exchange and cooperation.

“Research in Germany” provides international researchers with information about funding and career opportunities in Germany. The initiative gives research and science organisations from all over the world the chance to establish contact with potential German partners in the fields of science, research and industry.

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