

# “A Win-Win Situation”

The International Max Planck Research Schools (IMPRS) provide first-class supervision and excellent research conditions / Werner Becker, Coordinator of an IMPRS, explains which qualifications applicants must possess and how the selection process works



Werner Becker

*You were there at the outset when the International Max Planck Research School on Astrophysics was founded over 15 years ago. What attracted you to the job?*

**Werner Becker:** I received my doctorate from the MPI for Extraterrestrial Physics (MPE) and Ludwig-Maximilian University of Munich (LMU). At that time, doctoral students generally worked alone. We rarely entered into dialogue. I noticed that there were a lot of excellent scientists working at the institute, but hardly any passed on their knowledge to young junior scientists during lectures.

Establishing close links between graduate schools, such as the IMPRS, the universities, the Max Planck institutes and other research institutions, constitutes a win-win situation for all parties concerned – the students, the faculties, and particularly the Max Planck institutes. At the IMPRS, students are part of a group and can use the infrastructure at all participating institutions. The researchers invest more in the teaching and supervision of doctoral students. In addition to the European Southern Observatory and the University Observatory Munich, we've had two Max Planck institutes on board from the outset here in Garching, the MPI for Astrophysics and the MPI for Extraterrestrial Physics. This has resulted in us developing into one of the largest graduate schools in the field of astrophysics in Europe, if not the world.

*An ambitious approach ...*

What's commonplace in many European countries today was unusual 15 years ago – a graduate school at an institute focused purely on research in cooperation with a local university, with both as equal partners. The IMPRS program and its international orientation has significantly increased the profile of the participating institutes. Over 350 young people have now obtained a doc-

torate from our IMPRS, and some are already university professors. They've established contacts and made friendships that help them further their research careers, and that often last a lifetime. They also play a key role as disseminators for us. We remain in close contact with many former doctoral students worldwide through our alumni work.

*Where do the international junior scientists come from?*

Last year, for example, we received applications from 241 young scientists from 46 countries. We were able to offer a doctorate position to 22 applicants. Most of our candidates come from China and India. In Europe, German, Italian and Spanish students top the list. Of those accepted, there is a roughly equal split between men and women. Outside of Germany, astrophysics isn't a purely male domain, which means that our gender balance has always been very even right from the start.

*How does the application procedure work?*

The closing date for applications is November 15 each year. Applicants must complete an online form by that date, outline their motivation and research topics and enclose important references and letters of recommendation. In a team, we examine the ap-


## Doctoral student training with an edge

Since 2000, the International Max Planck Research Schools (IMPRS) have been an integral part of the Max Planck Society's support for doctoral students. Talented junior scientists have the chance to study for a doctorate under excellent conditions. Among the features shared by these graduate programs at Max Planck institutes are set curricula including research seminars and close cooperation with universities.

There are currently 60 IMPRS, 26 in the fields of chemistry, physics and technology, 23 in biology and medicine and 11 in the humanities. Research Schools are initiated by single or multiple Max Planck institutes. They work closely with universities and other research institutions in Germany and abroad. As a result,

the doctoral students enjoy first-class working conditions – a major advantage for doctoral projects that require special equipment and facilities. There are now 80 Max Planck institutes with IMPRS participation.

Of the junior scientists training at the Research Schools, around half originate from Germany and half from abroad. The main focus during their three-year doctoral period is on independent research into primarily interdisciplinary topics, which flow into the dissertation. The right to award doctorates lies exclusively with the universities. However, the students are supported in equal measure and are also jointly examined by supervisors at both the universities and the Max Planck institutes.

 Overview of all International Max Planck Research Schools: [www.mpg.de/imprs](http://www.mpg.de/imprs)

plications and pass them on to the supervisors at the university and at the institutes. Around 40 candidates are then selected by early January, and are invited to a four-day applicant workshop in mid-February. They are all given the opportunity to introduce themselves in a 15-minute presentation, and to ask the future supervisors questions. Individual and group discussions are also held where all participants have enough time to get to know one another better. The student representatives also provide information about campus life. We then decide who will receive an offer from us a week after the workshop.

#### *What questions do applicants ask you?*

Frequent questions include: How safe is Munich? How can I find affordable accommodation? How can I get a visa? We've also published a student handbook for this pur-

pose. In addition, the students also receive individual advice. We provide them with targeted support in, for example, searching for accommodation.

#### *Which requirements do the ideal candidates meet?*

How good someone is is often difficult to determine from their academic results, as evaluations vary significantly in the different countries. The academic letters of recommendation and the university where the master's is undertaken therefore play a much more important role. Applicants often stand a better chance if the professor who recommends them is an eminent authority in the specialist discipline. Their own personal commitment is equally important. The names of interested candidates stand out more during the application process if they've informed themselves

beforehand on our website, which provides information about the doctorate topics and supervisors, or if, for instance, they have contacted the supervisors at an early stage via e-mail or Skype. Such applicants tend to be more successful in the competitive environment. As English is our lingua franca, a good TOEFL score and strong communication skills are absolutely essential.

#### *What makes the training so special?*

The supervisors or members of the thesis committees look after the doctoral students and support them in their projects. The young researchers also benefit from regular exchange in connection with workshops, summer schools and conferences. We attach great importance to our lecture program, which helps provide insight into students' own research topics from different perspectives. Interview: Barbara Abrell

## New Content Leads to New Horizons

The new PhDnet Steering Group has set itself a series of goals

"With support contracts now setting the new standard for doctoral training, you might think there would be nothing left for us to do. In fact, it's quite the opposite, because now we can devote ourselves more closely to the content – and that especially means improving support for career development in and outside the science world," says the new PhDnet Spokesperson, Prateek Mahalwar, summing up the agenda for the MPG's doctoral student platform.

A doctoral student at the MPI for Developmental Biology in Tübingen, he and his fellow Steering Group members met for talks with President Martin Stratmann and representatives of the Max Planck Society's Administrative Headquarters in Munich this past April. One of the topics was how local doctoral student representatives could make themselves more visible to the heads of the institutes. "The new support for junior scientists must be replicated at the institutes – including all of the goals and tasks that entails," commented Humanities Section Representative Martin Grund of the Leipzig-based MPI for Evolutionary Anthropology. To achieve this, PhDnet has a number of ideas they are eager to contribute to a new workgroup established jointly with Headquarters with a view to enhancing the professionalism of the work done by PhDnet. They will present these ideas at the General Meeting.

Several highly practical activities will also be aimed at shedding light on the career questions posed by young scientists, including a career fair that will, for the first time, be accompanying the Visions in Science conference taking place from September 24 to 26 at caesar in Bonn. Biology & Med-



The PhDnet Steering Group: Treasurer Roman Prinz, Section Representatives Martin Grund, Xixi Feng and Adrin Jalali, Spokesperson Prateek Mahalwar, and Secretary Sven Weyer (left to right)

icine Section Representative Xixi Feng of the MPI of Psychiatry in Munich predicts that "the subject of careers will continue to be a main priority for us and for our successors – and the MPG should be offering its doctoral students the best possible support."

As part of the discussion, doctoral students will be surveyed jointly with Headquarters to ascertain the current status of career support. "Most doctoral students from abroad want to remain in Germany after earning their doctorates – but to do so, they must speak German," says Chemistry, Physics and Technology Section Representative Adrin Jalali. "We are now considering how German courses can be better integrated into day-to-day institute life, which is primarily lived in English."

# 50 Million Euros for Junior Scientists

Improvements for doctoral students and postdocs



Positive changes for the young MPG scientists.

The Max Planck Society (MPG) is restructuring its support for junior scientists. The overall package not only includes new support structures along with detailed guidelines for supervision, it also intends to provide greater transparency when it comes to career paths.

The MPG will be increasing its funding for the support of junior scientists by almost 40 percent. This will ultimately equal annual costs of just under 50 million euros. "We've decided to invest these funds, not in growing our organization, but in supporting junior scientists," explains President Martin Stratmann. The decision was made fol-

lowing extensive discussions and consultations with the MPG's governing bodies.

There are over 3,400 doctoral students at the MPG. At 54 percent, the number of those who come from abroad is already above average. However, the international competition for young, creative talent continues to grow: "It is essential for us to continuously develop our career structures to remain internationally competitive," says Stratmann.

In the future, the MPG will provide every student studying for a doctorate at an MPI with a support contract. In the past, the majority, and foreign doctoral students in particular, received a grant. "At an international level, that is quite usual," explains Stratmann. "But the dual system of contracts and grants has met with an increasing lack of acceptance, due to the inadequate distinctions between them." The Max Planck support contract allows us to combine the scientific freedom of a grant with the social security of an employment contract. The support contract is concluded before

doctoral studies begin, for three years, and can be extended for twelve months. "This way, students have a clear outlook on completing their doctorate."


Among other things, the revised guidelines mean that, in addition to their principal supervisor, all doctoral students will soon have a second, independent scientist to advise them. An overall number of students per supervisor will be determined in order to ensure high-quality supervision. "With these guidelines, we are aiming to set the standard for the German scientific system," says Stratmann. "What's more, we must also provide more support for

career orientation, given that over 90 percent of doctoral students choose not to remain in academic research." The President will also be discussing suitable options with the Max Planck doctoral student representative body, PhDnet.

For the first time, there are also specific guidelines for the International Max Planck Research Schools (IMPRS), which are operated by MPIs in cooperation with universities and which offer structured graduate training with a set curriculum. The first IMPRS was launched in 2000, and there are now 60 of these Schools, which account for over half of the MPG's doctoral students.

PhDnet Spokesperson Prateek Mahalwar agrees that "these changes will further improve the situation for young researchers at the MPG. Young researchers are essential to every research organization. Listening and responding to their concerns will further strengthen the MPG. I am delighted to be working with the governing bodies of the MPG to continue to develop the conditions for young researchers." Cornelia Quennet-Thielen, State Secretary at the German Federal Ministry of Education and Research, described the decision as a great step forward: "The new guidelines for doctoral student training set an example for an improvement in the support for junior scientists, offering greater planning security and dependability."

In the future, postdocs, too, will be awarded exclusively employment contracts that comply with the Collective Pay Agreement for the Civil Service (TVöD). Grants will be awarded only to guest scientists at an MPI on a temporary, project-oriented basis. The Max Planck Fellowships will be combined with a new guest program, which will be developed at institute level. The new support structure takes effect from July 1, 2015. Grants already awarded will remain unaffected.

 **The new guidelines and other information** are available on the Internet at: [www.mpg.de/career](http://www.mpg.de/career)