

## Advice for the Next Generation: Nina Cabezas-Wallscheid

Pursuing an academic investigator position is challenging, and every scientist's journey is unique. In this interview series, *Cell Stem Cell* chats with six newly established professors on how they built a competitive application and their advice for trainees interested in this career path. Here, we seek Dr. Nina Cabezas-Wallscheid's insights.

### Tell us a little bit about your career path and your lab's research interests and experiences

My undergraduate studies were in biotechnology at the Autonomous University of Barcelona (Spain). During this time, I was an Erasmus-program exchange student at the University of Parma (Italy). Due to my keen interest in genetically modified mouse models, I next decided to pursue my Ph.D. in the lab of Dr. Ernesto Bockamp at the Medical Center of Mainz (Germany). We investigated the evolution of transcriptional landscapes and cancer stem cell hierarchies using a pre-leukemic and leukemic mouse model. I was grateful to receive great supervision and support to further develop my scientific skills. For example, I spent few months as a guest scientist in the lab of Prof. David Scadden at the Harvard Stem Cell Institute in Boston (USA). Interacting with so many talented scientists was fantastic! It was a very exciting and inspiring time in Boston.

Motivated by the research topic—hematopoietic stem cell regulation—I started my postdoc under the mentorship of Prof. Andreas Trumpp in the Division of Stem Cells and Cancer at the German Cancer Research Center (DKFZ) in Heidelberg (Germany). I was very lucky to have a supportive mentor who gave me freedom to choose projects, start new collaborations, and supervise students. During my postdoc, we uncovered molecular and functional properties of hematopoietic stem and progenitor cells by combining various OMICs technologies with *in vivo* and *in vitro* functional approaches. We also investigated the heterogeneity and mechanisms involved in maintaining hematopoietic stem cell dormancy. My work involved highly collaborative and interdisciplinary projects. This gave me the opportunity to interact with multiple groups possessing unique expertise, such as physics and



**Nina Cabezas-Wallscheid**

Max Planck Institute of Immunobiology and Epigenetics

mathematics. It was an exceptionally stimulating experience.

Applying all of my experience, I have now recently started my group at the Max Planck Institute of Immunobiology and Epigenetics (MPI-IE) in Freiburg (Germany). Here at the MPI-IE, my group aims to address how hematopoietic stem cells are metabolically regulated.

### Do you have any suggestions for how postdocs should approach their project(s) as they consider their desired research directions as a PI?

Chose a topic that you are fascinated by; this is the topic that you are likely going to follow someday in your own lab. Importantly, get out of your comfort zone and develop new expertise/tools during your postdoc. The combination of excitement for your topic, unique expertise, and new approaches will make your scientific profile stand out. Another piece of advice: focus on one or two specific questions at a time and do not start too many projects and/or collaborations, especially at the beginning of your postdoc. I still remember being overly excited about so

many different projects during my first few months in my postdoc lab, like a kid in a candy shop. Fortunately, a good friend, a senior postdoc in the lab, gave me the best advice: “Nina, focus on one to two main projects; otherwise, you can get lost.” And she was right, I could have lost focus.

### What do you wish you knew in graduate school or beginning your postdoc?

It would have been helpful to know that most funding “clocks” start ticking the day of your Ph.D. defense, since you are only eligible for most prestigious grants for a certain number of years after defending your Ph.D.. For instance, applying for the European ERC Starting Grants is only possible within 7 years of defending your Ph.D. By then, you need a host institution and a finished proposal to apply.

Some trainees stay in their Ph.D. lab after defending their thesis to finish their paper. As a trainee, it is better to first finish your paper and then defend your thesis—I stayed in my Ph.D. lab as a postdoc for more than half a year after defending. I was lucky that I still had the chance to apply and fortunately it worked out for me. However, submitting the grant while doing revisions of my postdoc paper was very intense. Still, there are exceptionally talented colleagues with outstanding CVs that did not have the chance to submit a proposal because they spent additional time in their Ph.D. labs as postdocs without being aware that time was running out.

### What are some other ways that trainees can invest their time to become more competitive for an academic position?

Invest time wisely. First, attend courses on how to write grants. Even better, write grants yourself! Second, ask your mentor

to involve you in reviewing papers. You will learn several interesting aspects of the peer review process, including some facets that you might use when preparing your own papers. Third, supervise students. Mentoring students during your postdoc will facilitate your transition to a group leader position. For example, I still have joint projects with my postdoc PI and graduate students that I mentored. While I am starting my own independent research lines, we are wrapping up the stories together. Finally, attend courses regarding leadership, negotiation skills, and conflict resolution.

Strengthening all of these abilities will help you set up your own group. Having said that, usually the scientific review committees first check your publication records and scientific expertise, so these aspects should be your primary focus.

#### **Do you have any strategies for effective networking that you can offer to trainees in graduate or postdoc programs, as well as when starting their own labs?**

Attend and actively participate in conferences by presenting your work (either poster or oral presentations) and by joining the young investigator events (meet the experts, how to publish, etc.). Use each opportunity to get to know other scientists and participate in discussions with them. For instance, if an invited speaker is visiting your institute, get an appointment with her/him or join the Ph.D.-postdoc time with the invited speaker. Get enrolled in scientific societies. For example, I got enrolled in the New Investigator Committee of ISEH (International Society of Experimental Hematology). We share monthly calls and organize webinars and sessions for new investigators during the annual meeting. These activities not only give you the opportunity to learn what happens behind the scenes of a conference, but they help you get to know new colleagues and make new friends both at the junior and senior level. In other words, be proactive! There are many interesting people you will get to know by doing so. It is both great fun and a great opportunity to discuss science.

When starting your group in a new institute and/or city, trainees should aim for greater visibility by presenting their previous work and their new lab's scientific di-

rections. This will help you to get to know the local scientific community, start collaborations, and be considered in scientific initiatives. Also presenting your work through giving lectures at the university allows you to screen for possible Master's students and Ph.D. candidates. In other words, make people aware of your work and you will increase the possibilities for integrating your lab in the local scientific community.

#### **How did you decide which institute to apply for? Do you have any advice for making your application stand out?**

First before applying, prepare a list of what is critical for you. For me, it was important to start my group in a place with a competitive starting package, outstanding facilities, and a critical mass for strong scientific input. I find it also particularly important to be surrounded by nice colleagues. As a group leader, you will definitely feel lonelier than you did as postdoc, and you will face new challenges every day. Thus, it is very valuable to have colleagues with whom you can share your thoughts, collaborate, or just go out for a drink.

Regarding applications, I recommend personalizing each of them. Take the time to search which groups are working in the institute and indicate potential collaborators in your cover letter. Highlight what you can offer to the institute, such as specific tools, technology, or expertise. These details will show your true interest in joining a specific institute and the potential win/win situation in hiring you.

#### **What is your approach for recruiting trainees, and particularly your first hires?**

"The first hire is crucial." This is the most repeated advice from senior scientists. Indeed, your first hire will pave the scientific and team philosophy of your lab. I aimed to build a group with diverse expertise and backgrounds, highly motivated scientists, and great team spirit. I was extremely lucky. One of my Master's students from my postdoc lab directly joined my new lab as a Ph.D. student. She is an outstanding student and a wonderful lab citizen. Our subsequent hires were student assistants and one technician who were essential to finish

establishing the lab. In addition, we had superb backup from the students I mentored in my postdoc lab who checked trivial things like ordering numbers. Later on, we hired two Ph.D. students through the international Max Planck Ph.D. program. Both of them are very motivated and hold unique expertise that complements the group very well. Now we are recruiting postdocs (check our website or contact me!) to obtain all levels of experience in the lab.

#### **Do you have any advice for how new PIs can set up and maintain a good collaboration?**

I think collaborating with other scientists makes science a lot of fun. Working with scientists from your discipline and especially from others provides access to new expertise and allows you to share your own expertise with others. Science is evolving toward more and more interdisciplinary projects, as techniques become further specialized and papers become more complex. In addition, as a junior group, it is not possible to do everything yourself. I believe that collaborations should be based on transparency and open communication. If I do not feel that the other group shares these same values, then I will not pursue that collaboration.

#### **Do you have any suggestions for how trainees can feel empowered to drive their careers forward in the event of setbacks?**

Step back and breathe. Take some time to think rationally about your situation and to find potential solutions. For me, it also helps to remind myself why I like science so much. Sometimes, and particularly if you are deeply involved in the topic, it is hard to get a reasonable perspective. Then try to get some neutral advice from friends/family or senior colleagues/mentors. This will make you feel more confident and give you the energy to push your career forward.

#### **Do you have any advice for establishing a good work/life balance as a trainee and now as an early stage PI?**

Safeguard some time to do what you enjoy (in addition to science). Personally, I love to travel, especially if it involves mountains. In my adventures, my

laptop/phone always travels with me. I remember trying to get emails at almost 6,000 m (19,000 ft) of altitude, which actually did not work! Still, to wake up surrounded by the Himalayas

when I was hiking on my way to the Annapurna Base Camp, or the feeling of accomplishment when reaching the summit of Mt. Kilimanjaro, replenishes my energy and gives me fresh perspectives.

I also balance my lab/private life by having non-scientist friends. For instance, my partner is an engineer, and I find it refreshing to talk about the design of a car's window lifter.

<https://doi.org/10.1016/j.stem.2019.03.007>