

EDITORIAL

Your ticket to independence: a guide to getting your first Principal Investigator position

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Abstract

The transition to scientific independence as a principal investigator (PI) can seem like a daunting and mysterious process to postdocs and students - something that many aspire to while at the same time wondering how to achieve this goal and what being a PI really entails. The FENS Kavli Network of Excellence (FKNE) is a group of young faculty who have recently completed this step in various fields of neuroscience across Europe. In a series of opinion pieces from FKNE scholars, we aim to demystify this process and to offer the next generation of up-and-coming PIs some advice and personal perspectives on the transition to independence, starting here with guidance on how to get hired to your first PI position. Rather than providing an exhaustive overview of all facets of the hiring process, we focus on a few key aspects that we have learned to appreciate in the quest for our own labs: What makes a research programme exciting and successful? How can you identify great places to apply to and make sure your application stands out? What are the key objectives for the job talk and the interview? How do you negotiate your position? And finally, how do you decide on a host institute that lets you develop both scientifically and personally in your new role as head of a lab?

The primary aim of this article is to help senior postdocs in attaining an independent scientific position. While there are excellent guides to managing your research career (Joels *et al.*, 2015), few focus on the transition from being a postdoc to a PI. Being a PI gives you the opportunity to develop a scientific vision and lead a team to transform that vision into knowledge. This means that you will be coordinating people to achieve scientific results, that you will be responsible for obtaining the required resources, using them efficiently, and grow personally and scientifically at an unprecedented pace. You will have the unique chance to provide people opportunities, to foster them to become producers of knowledge and to watch them grow and transform into scientists. Sometimes, if you are lucky, the people with whom you work will be better than you and you will learn an enormous amount from them, and perhaps even more than what you can teach them. Leading a group is therefore not so much about having more hands to work on problems you have defined, but about fostering a mini ecosystem of minds, which will expand the horizons of your science beyond what you would be able to achieve on your own.

We have structured this piece into three sections which reflect the different stages on your path to independence: A section describing how to position yourself to be ready to apply for PI positions as well as the application itself, a section on the interview process, and a section on the negotiation and the decision process. We have also highlighted what we think is our key advice for each section. So are you ready? Let's get that ticket!

Getting ready: before the interview

Do you want to be a PI?

Leading a research group offers a totally different perspective on science and requires a new skill-set for which few of us have been trained. In addition to continuing to do exciting and innovative science, you will now be expected to be a manager. It is normal to feel anxious about the prospect of leading a laboratory and worrying about all the responsibilities it entails. It is therefore important that you think carefully about whether this is a goal you want to pursue. But if you feel that science is your passion, and you have the drive to see projects through, with added patience to educate new generations of scientists, then this is the career for you. It is a career path that is immensely gratifying, complicated but incredibly dynamic, ever-changing, and that allows freedom of thought and working hours, which few other careers can match. If you are debating, a great place to start is to ask your mentors (PhD and postdoctoral supervisors) about their experience in running a lab, how they built up a research programme, and what made them choose to become a PI. Once you have decided to become a PI, then there are some important steps you need to take to get there.

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Developing your scientific vision

What is expected from you when you apply for a group leader position? First of all, and most importantly, you will need to change your perspective on your research. You will have to switch from thinking about the next experiment to viewing your research in the context of a broader research programme. But what constitutes a good research programme? We have all started by asking ourselves the following questions: Do I have a vision of what is an unexplored, tractable and important question within neuroscience? A topic which in the ideal case forms a niche within the crowded field of neuroscience which you can claim as your own? A long standing aspect of science which has been fascinating people but which only now is becoming tractable by the clever combination of new technologies or fields? Can my trainees and I build up a career working on that topic? And of particular importance: can I make a case that I am the right person to tackle this question?

Obviously developing such a research programme is not trivial. Most scientists do so twice or three times during their career. So start working on this early on. The good thing is that it is the most creative, stimulating and enjoyable part of being a scientist and many of us spend a lot of our social time among scientists discussing these topics. So develop a feeling at conferences for what gets people excited and what is missing in your field of neuroscience. Mingle with the best and most original minds in your field. Often these are not the senior people but the young, dynamic postdocs; your peers. Try to remember the jet-lagged, crazy neuroscience discussions you had late at night at the bar of conference venues. These are the places where new research directions are born and where you can float your ideas and see if people get excited. The bottom line is: stay connected. No matter what the stage of your career, it is important to meet scientists of different backgrounds and different levels and to talk about a broad range of science topics. This is a very worthwhile investment that will be of great help in generating a broader view to develop your own ideas and research programme.

How do you make the case that you not only have a great idea but that you will be able to get traction in it? Institutions and selection committees will want to see a strong publication track record, which shows that you have repeatedly been able to make important contributions to the fields in which you have been working. If, on top of this, you have been able to generate preliminary data during your postdoc showing that your research programme is viable, you are in an excellent position to convince a lucky institution to offer you a job. While you need to have sufficient technical expertise to attain your goals, be aware of “cloning”: you need to clearly distinguish yourself from the research of your postdoc advisor. Be original. A committee will expect you to use your knowledge as the backbone of your scientific career, but now is the time to fly on your own. Be ready to take some calculated risks.

Building up your CV

Start early to seek out experiences within neglected aspects of scientific training that will greatly strengthen your CV and allow you to find out if you enjoy the ‘other’ aspects of science. First, apply for a fellowship for your postdoc. For many of us this was the first hands-on experience in obtaining funding and demonstrates to your future employers that your ideas are good and that you can successfully compete for grants. Second, gain experience managing people. Try to mentor a student or two. Teach some classes or courses. This will allow you to find out if you enjoy managing scientists. Third,

participate in carefully selected committees. The most useful is to serve on a selection committee for new faculty. Many institutions require a student or postdoc representative on such committees, and this will allow you to understand how decisions are made and how institutions are run, giving you an invaluable head start when you go on the job market and once you have your own lab. Fourth, try to participate in the peer-review process as much as possible. Talk to your mentors about this. They are much more likely to be solicited to serve as a reviewer and will be happy to receive a helping hand. This will allow you to learn how the publication and grant system works. Finally, try your hand at public outreach such as giving talks for the lay public, or visit schools in your area - a daunting task at first but quite important for a PI career in the long run. Obviously your main focus should be on science, so don't get too distracted. It is not about the quantity but the quality. Importantly, all these experiences can be included in your CV and will show your future colleagues that you care deeply about science, and about contributing to the scientific system.

When and where to apply

So now you are nearing the end of your postdoc and are about to submit your masterpiece for publication. You have made important contributions to your field during your PhD and your postdoc, you have published these in good journals, you have made yourself a name within the community, you have thought of a great topic which you would like to work on and you have a plan for how to tackle this important question. And most importantly, you are passionate about science, enjoyed your experience in managing scientists, and want to take your own ideas forward. This is the point when most of us decided that we were ready and started applying. Don't make the mistake by waiting too long to optimize your track record. It can always be better and you want to start publishing your work as a fully independent scientist as early as possible. Also the longer you wait the more people will expect. So go for it!

To find out which places are hiring look at specialized webpages like the “FENS job market”, “Naturejobs”, “Sciencecareers” or “Euraxess”, and webpages of academic institutions of interest. But the best is word of mouth. Talk to scientists who come to visit your institute. Show them your work and if you get them excited they will remember you in their next faculty search. Ask if there will be an opening in their institute in the next months/years. Also, let your local faculty know that you are on the job market as many get asked to suggest applicants when there are openings. Often you will also know of great places where you would like to work one day; find out early what the hiring situation is at those places. Furthermore, neuroscience is a hot topic and new institutions and departments are continually being created. Try to identify these new ventures as they could be great new opportunities. Finally, some countries and organizations have special grants for young scientists to start their lab (e.g. Swiss National Science Foundation Professorships, the Ramon y Cajal Programme, DFG Emmy Noether, Wellcome Trust, MRC- and BBSRC Career Fellowship programmes, or the Atip-AVENIR Inserm) or have centralized the application process for young group leaders with the successful applicants selecting their host institution (e.g. Max Planck Society, CNRS, INSERM, MRC and Wellcome Trust).

The application process can be time consuming, so go for quality instead of quantity. Do not apply if you know you would not take the job. But do still apply widely. Getting an offer depends on many factors and it is impossible to predict how it will work out. If you get invited to many places you will have a great opportunity to meet

interesting scientists and gain a great deal of experience in the application process. As with everything, it is a skill that improves with practice. When choosing where to apply, think about your future colleagues, the working conditions, and also the scientific atmosphere there. Will your science fit? Will it profit from the environment? Aim high! The environment is absolutely not to be underestimated when starting a lab. Another important factor is to consider the country you may be moving to. While science itself is quite international these days, and while the European Commission now offers great possibilities for funding such as the ERC starting grants, the way institutes are run, and especially the local funding landscapes still differ a lot between European countries. Ask senior colleagues - ideally locals - about things such as how easy it is to get external funding, how junior PIs are viewed in the system and whether there are specific programmes for newly appointed PIs. Also, make sure that the city and conditions are compatible with your private life, your partner or family.

The application package

Put together an application package which will consist of a cover letter (one page maximum) stating why you want to join that institution and why you are a good fit, a concise and convincing overview of the research programme you would like to develop in your lab (typically around 2–4 pages) and a CV which demonstrates your abilities in making scientific discoveries and disseminating them (publications, talks, public outreach) as well as your experience in managing people and shaping the scientific landscape. It is really important that you check what is required for the application and that you tailor your application to the advertisement and the institution. If you know someone there get in touch and try to find out what they are looking for. Make your application stand out. Send your finished application package to some colleagues and mentors for valuable feedback, ideally also from people not in your immediate research field. Finally, and very importantly, you will need multiple referees (the usual is three) who will enthusiastically support you. Normally these are your PhD and postdoc supervisors and one eminent person in the field although there can be exceptions if needs be. Make sure that they will enthusiastically support you. They also must know you well so that they can make a credible case for you. Their enthusiasm will outweigh how famous they are. So choose wisely. Take your time to explain to them what your research programme is about so that they can support you as a scientist and in your research vision. In most places they will be requested to provide the recommendation letter independently from your application submission, so keep them in the loop of where you applied to and send them copies of your application (especially as writing a strong recommendation letter takes time and most senior people are extremely busy). Once you have put together a great package, upload your application, press the submit button and go back to the lab to do some exciting experiments while you wait for an answer.

Key advice

- 1 Produce great science and publish it well.
- 2 Develop an original research programme that will give you a scientific identity.
- 3 Develop a sense beyond the world around experiments (grant writing, reviewing, committees).
- 4 Aim high! Apply to institutions that you admire or that offer you a great opportunity.

Searching for perfect colleagues: the job interview

You are having breakfast performing the usual email check and your eyes fall on a new email entitled “Assistant Professor Position at Dream-University – Invitation for a job interview”. That would likely be among the happiest and most intense breakfasts you had ever experienced. In a split-second your dream of leading a successful research lab in a Neuroscience Department can become a reality. That is *cool!* This email opens the door to your future: a job interview! Be ready for a novel experience that is both incredibly stimulating and at the same time demanding and exhausting. Now is the time to be in the spotlight from the moment you are picked up at the airport until you are sent on your way again.

What are the key objectives for the job interview?

Interviews for a faculty position typically take one to two full days. Expect to meet with several faculty members who will provide feedback about you to the evaluation committee. Although the formats vary depending on the institution, here are three important key goals that you want to achieve:

- 1 To convince them that your science is exciting, that you are excited about it and that you can be a future leader in your field.
- 2 To convey to the members of the department that you will be a great colleague.
- 3 To find out whether you and the department can generate a good chemistry.

You will be going to visit a place you think might be interesting to develop your research career. On the other hand you have been invited because the hosts think you have the potential to fit in the selected institute. There is therefore a mutual interest. Both parties will use the interview to find out whether there are the right conditions to work together.

Preparing for the job interview – practice, practice, practice

Can you predict how the interview is going to go? Of course there is no “Grandma recipe” that would ensure success, but we have put together a number of tips that might be useful to consider. In general there are two formats: In the most common one you will be invited alone and you will get the opportunity to present your work in a long talk (typically 45 minutes), visit the department and discuss with scientists. However, more and more institutions organize their interviews in the format of mini-symposia. In such a situation you will be presenting together with other candidates aiming for the position and you will have less time for your presentation (around 15–25 min). Importantly both interviews are similarly structured and present shared features that we detail below. While the symposium style might sound more stressful, you will have the opportunity to meet young, interesting scientists at your career stage. Enjoy that opportunity.

An initial major step in understanding how the interview will work is to get to know the format. Job interviews often consist of five major phases: *arrival, seminar, meeting selected faculty members, the “discussion” with the selection panel (which often also involves a chalk talk about your scientific vision), and social lunch/dinner with committee members and/or other applicants.* All of these need to be carefully thought through, prepared, and rehearsed. It really goes without saying, but practice, practice and practice all aspects of the interview. It is surprising how often the power of practice is underestimated. Having said this, don’t over-prepare and especially don’t have canned answers for typical questions (a killer!)

- the main aim of rehearsing is to boost your confidence so that you will feel calm and be able to show your true colours during the interview and to make sure that you are not surprised or thrown by the type of questions. Also, proactively gather information about the interview process and the position at that institution. In general do not hesitate to ask colleagues and friends that ideally are in the field about their interview experiences. Seek support and suggestions from your mentor, as well as from faculty members in your working environment. In the end they went through the same phase, and they went through probably similar experiences. A great practice is to ask your mentor and other senior scientists in your department to run you through a mock interview beforehand. Once you have heard about many experiences and rehearsed in a mock interview, you need to start an imaginary trip on how things can evolve from the moment you enter the “desired” department. Visualize how you will deal with the situations that people have told you about. Prepare answers for the most common questions you have heard and how to react to criticisms to which you may be exposed. This will be great preparation for the actual interview.

The scientific seminar: a unique format for a job interview

When you arrive you will be welcomed by your host. The welcoming is a transition phase to the seminar. You will not be meeting many people at this point and you will likely receive the programme of your day. Be flexible because the programme might change at any time, often depending on the schedule of people in the building. Have your logistics worked out: presentation, computers, adaptors and those sorts of things ready (for example bring your own laser pointer – try to be in control of the situation as much as possible). Don't let technical or other disturbances destabilize you.

The seminar is the moment in which you will finally show your science and your scientific potential. Depending on the interview format you will typically have between 15 and 45 minutes to show your work and where you want to go scientifically, and to convince your potential future colleagues that you have an original mind that can convey its message clearly. There are a few variations in the format of your seminar, depending on the institution and the type of job you are applying for (i.e. research-only position or academic position with lecturing requirements). We suggest that one should aim to give a presentation divided into three core sections: (i) “*Who you are, and what you have done so far*”, (ii) the “*concept of your scientific vision*”, which leads into (iii) your “*future research*”. This model should fit the most common requirements for a job talk, and a good rule of thumb is that parts 2 and 3 together should make up about a third of the talk. However, the proportion of each ‘section’ can be modified according to guidelines from the institution you are applying to, your background and personality. Following this structure, your talk should clearly demonstrate that you are working on an exciting question and that you are the right person to perform the proposed research.

Be *CRYSTAL CLEAR*- you are talking to scientists, peers, but certainly also to people that are not experts in your research topic. Be exhaustive, but simple, and didactic. Often postdocs have the tendency to include too many technical details, making the talk unnecessarily cluttered. See it this way: at this stage your track record has already convinced most people in the room that you are an expert in your field (otherwise you would not get the invitation in the first place), so now show them that your research is exciting and that you have a good general overview of the field and your scientific vision. If you really want the job, you need to bring on-board the maximum number of people listening to you, from PIs to

students. A good idea is to tailor your introduction to the interest of the people in the institution. Another key objective of a job talk is that people get to know you as a scientist - not only your data but also the way you think and your personal development during your career, so you may want to include just a little information about that. Definitely don't be shy to quote your papers and manuscripts (in revision or submitted), since this is relevant information and not everybody in the audience will have had access to your application file. Even if you only have 15 min, give sufficient background information for all attending your seminar to understand where you want to go scientifically. This will be helpful for the people listening to understand your needs for the future. As a matter of course, your talk has to be very well timed, and delivered at an easy pace. After the seminar, every question that you get will be important. As for every seminar there are no out-of-context questions – everything is relevant. Be precise and not too long in answering, setting a dynamic pace of discussion.

When applying for an academic position with lecturing requirements you might be asked to give a “*Science/Teaching seminar or a teaching lecture*”, to test your teaching skills. The topic of your lecture is often given just a few days prior to your interview, so start thinking about some ‘general’ neuroscience topics beforehand to be prepared to give an amazing teaching lecture.

Meeting the faculty

After the seminar you will often have meetings with some of your potential future colleagues. It helps to do some research on whom you will be meeting. The web page of the department will often provide most of the important information you will need to prepare yourself. Also use your connections to get to know the people you will be meeting beforehand and screen the literature. This will put you in a more relaxed situation at the time of the real meeting. A general attitude we would suggest at this stage is to be curious, positive, mixed with cheerful performance, scientific sharpness and clear thoughts about your future research and how your research integrates with the work being done by other PIs in the institute. Importantly, you should have and show interest for the research of your future colleagues. This applies when meeting the potential colleagues as well as the selection committee.

Think about the logistics necessary for your scientific career because you might get asked at this stage what your needs are. Be proactive in asking questions relevant to your future. In the end you need to understand whether the place you visit is a good place for you to develop. But do not push too hard and don't make demands. That comes after the offer. Questions on animal use regulation, space, common facilities, sharing opportunities, scientific exchanges can be discussed at this stage. These discussions will also be of great help to get a feeling for the collaborative spirit at the institute. Considering that you will meet people with different expertise, tickle your imagination to set ground for collaborations. Try to understand where common interests could meet. Scientists need dynamic discussions to develop new ideas, and you want to find out how you will be communicating with your future lab-neighbours. You will have moments of less science-oriented, but rather personal discussion. Be yourself; do not hide your personality and reality. Describe your interests, your needs, and your daily routine. Everyone wants to relate to a human being and not a robot. It's no use to impress only for a day. You need to impress for what you are. Nevertheless, be interested in what people want to tell you and don't be over-chatty. At this stage they want primarily to find out who you are and you will want to discover more about who your future colleagues might

be, what type of science they do and what their experiences are at the institution.

Meeting the selection committee

The meeting with the selection committee is extremely important, and probably the part of the interview that you are least familiar with. Often the selection committee consists of the Head of the Department, a few representative of the faculties, and some external scientists (i.e. Scientific Advisory board or similar). Again, formats vary widely from a half hour friendly chat to a 3 hour chalk talk where 15 senior scientists will probe and prod at every conceivable weakness in your research plan. Either way, be sure to prepare the presentation of your research plans carefully. One of the key qualities that is often being tested at this stage is whether you remain composed, focused on your plans and whether you stand up to defend your science even in the face of strong criticism in a stressful situation. Don't be perturbed - every scientific idea can be criticized. However, it helps a lot to know the weaknesses of your research programme, and to understand for yourself why you still want to go through with it (e.g. working in an extremely competitive field, or on questions that not many people care about (yet)). People expect you to be very clear in terms of your scientific project and the logistical needs to carry it out. Make sure that you are strong in making a distinction between the research you will be developing and what you just did as a postdoc. A recurrent question is "How will your research differ from the one of your previous mentor?" and "Where do you see your research in the next 5 years?" You will have answers for most of these questions as you will have faced them during your preparation. Importantly, don't answer questions you don't know the answer to! It is absolutely fine to say that you haven't thought deeply about something or just don't have the knowledge in a given area to really have an informed position yet. It might be hard and it will require energy but never lose focus, do not decrease attention - stay sharp.

Watch out though, interviews do not always follow the same scheme. A major part of success is flexibility. And in order to be flexible in your interview, you'll need to be ready to bounce in just about any direction depending on how things play out during the day. There are situations in which the interview might turn tricky and this may occur in a myriad of ways. Try not to get hooked on this situation, and in such a case always keep calm, push through professionally and with a smile on your face. Do not draw any conclusion from negative or warm feelings during the interview process. Wait to be done, to get home and calmly think through the day.

The dinner

In most cases the interview will be rounded off with an informal dinner with some faculty (normally members of the selection committee), and potentially other candidates applying for the same position. It is important that you do not underestimate this last part of the interview. Take care to not relax too much. Resist the temptation of that nice wine after a truly stressful day; the show is still on. Your hosts will use this as a unique opportunity to get to know you better as a person and a future colleague. So even if the day was exhausting, keep on showing interest in the institution, the people working there and their science. Show them that you are a stimulating discussion partner and that you are a thoughtful scientist and a great person to have around. After the dinner your hosts will ask themselves if they enjoyed the dinner or if they got totally bored by you. And then they will ask themselves whether they want to spend

the next ten or more years interacting with you on a daily basis. And so will you. So our advice is to take the social aspects of the interview as seriously as the other parts and to engage with the faculty in an open, natural but still engaging way. Depending on your personality, it may help you to identify some topics and questions ahead of time that you would like to discuss.

Debriefing

After you're done, start asking yourself, "Would I want to work in this environment?" Write down all that you think is positive and all that you think is negative. Discuss your impressions with close colleagues, mentors, and within your close familial entourage. This is a fundamental step in your career, and advice is always welcome. As the committee can make a choice and a decision, you can do the same. Write a brief email to your hosts thanking them for inviting you and restating your interest in the position.

Key advice:

- 1 Work out every single interview aspect and practice, practice, practice.
- 2 Your talk should be clear, smooth and should be able to convey your key messages to people outside of your field.
- 3 Clearly recognize why you want to work at that institution (scientifically, technically, personally etc.), and be able to communicate this.
- 4 Be straightforward - don't pretend and don't use canned answers.

Closing the deal: negotiation and decision

Weeks later you are immersed in reading the latest papers, and your eyes drop on a new email entitled "*Offer to become assistant professor at Dream-University*". Congratulations! You have just made what is probably the most difficult step in a scientific career. Now go and get another offer so you can negotiate...;-) It helps immensely in getting what you need for the successful start of your lab if you have multiple options. To coordinate parallel application procedures takes some effort, and we strongly discourage you to apply to places that you have no genuine interest in. But still, the ideal situation at this point is to have 2-3 competing offers that are all attractive. After focusing a lot of your energy on convincing people to offer you a position, with the emotional involvement this entails, the hopes and often also disappointments, it is a good idea to now take a step back and understand that the game has gone to a different stage: you are now on par with the offering institutes in that they want to attract you (under certain conditions), and you want to go there if the deal fits. Often you will now go for a second visit during which you will focus on exploring the city and the institute in which you might end up spending many years of your life.

Negotiations in a nutshell

For most of us, job negotiations were a new experience that took some getting used to. While most scientists have previously applied for grants, prizes and such, not many will have found themselves in the position to make requests before this point. Until now your supervisor probably made sure most conditions for your research were met. Also let's face it: scientists are not good at demanding things. We are normally happy (often even surprised) to get money

at all! But it helps to think about it objectively. You are not asking for resources for yourself but to ensure that you can achieve your goals successfully, therefore fulfilling the expectations of your future institution and to make sure your mentees will have good working conditions. Negotiating thus comes with a dual responsibility: on the one hand, your wishes need to be clearly justified, and you definitely don't want to appear greedy or unreasonable to your future colleagues. On the other, and this is often harder to grasp, from this point onwards you are the only person responsible for the success of your lab - bear that in mind and stand up for needs that you cannot do without. Especially in a starting lab it is a real plus not to have to worry about resources all the time and an ideal situation would be that you can achieve and publish your first goals independent of additional external funding. While such packages are often given by the top American institutions, and a few select places in Europe, for the most part this should be seen as an ideal to work towards in your negotiations rather than a fixed goal. Still, we strongly advise you to clearly state what you need for achieving your ambitious goals. Most of the time negotiations mean that you will not get everything you ask for. While you should still push for what will give you the best possible working conditions, knowing what you cannot do without will be important when needing to compromise. You should also keep in mind that this will be a unique situation during your career. You have to clarify and negotiate everything now. Once you have made the commitment to join it will be very difficult, if not impossible, to change your working conditions. Finally and crucially, do not hesitate in asking to have all offers/promises stated in writing. Bottom line: Do not underestimate what can be achieved in a negotiation.

Objectives for the negotiation

The typical objects of discussion and negotiation are start-up funds, lab space, positions, running costs, animal housing, teaching load, tenure requirements, and in some institutions even a position for your partner and your salary. Before you start, consider carefully which of these are the key issues for you. This depends heavily on the type of science you are planning to do - if it is 2-photon imaging in behaving animals you will want a large start-up to buy the system, and preferably small rooms to do experiments with little disturbance. On the other hand, for this type of science the running costs are relatively low, and you won't need so many positions since training people in these techniques takes a lot of time. If your work will be more molecular or cellular, then running costs and positions are probably much more crucial than the size of the start-up funds. In addition to these specific considerations, it is a good idea to find out the typical size of the package at the institute, and to define your priorities within this ballpark number. Importantly, get an idea of the costs of doing science at your institute. Ask your current mentor or your future colleagues how much they spend per lab member. Are there subsidized core facilities? How much do you pay for using shared equipment? This will allow you to build a tentative budget for running your lab. Finally, find out how easily your funds can be transferred between categories - starting labs are highly dynamic and the possibility to transfer funds will give you much needed flexibility.

For the start-up funds we strongly recommend compiling a list of the equipment you need, including prices. While the big pieces such as microscopes are usually easy to identify, in our experience there is a surprising number of smaller (albeit expensive) items that are easily overlooked. One way to avoid this is to carefully go through your postdoc lab and note down all the equipment you need for an

experiment (while you are at it, note down the manufacturers and parts numbers as well - this will save you weeks of searching later on). Likewise, the best justification for lab space is a well thought through plan for how you will use the rooms, ideally based on the floor plans of your potential future institute. The number of positions and the running costs you will have is rather fixed in many places, but if you have wiggling room, then think judiciously about what is most important for you. Negotiating an entire lab for many years is a complex endeavour, and you will probably make mistakes along the way. Don't worry - this happens to everyone. It is however, really helpful and reassuring to have senior colleagues with whom you can discuss the many decisions you will need to take.

There are many attractive institutions that do not provide start-up funds or positions, but just space and support. In these cases, you will have to discuss the latter conditions, and how much support you will get from your potential host institution while applying for funding. This is as important as a start-up package as this support will translate to a major asset in preparing an ERC or local applications which would have to follow certain established formats that you may be not aware of. Another very useful strategy to attract additional funding is to ask every incoming postdoc to put together a fellowship application with you. Most will be happy to do this because it is very good for their own CVs and it is also a great way of getting to know each other and clearly define your scientific plans from the outset.

Clearly define the mutual expectations

A second important aim of negotiations is to define clearly what the institution expects from you as a faculty member (teaching, publications, grants, collaborations etc.). This is absolutely crucial for tenure-track positions where the criteria for tenure are an essential factor in your decision, but it really helps for every type of position to have an idea of how important different aspects of your work are to your host. It will also allow you to decide if you can identify with the goals of your institution and if the level of support fits with the expectations. For many positions, teaching can take a lot of your time, and under these circumstances it is extremely helpful if your colleagues agree to cover your classes for a year or so, until you have set up the lab. This is by no means standard, but a definite plus.

The intense interactions during the negotiations are also a great chance to get to better know your future colleagues and the vibe of the institute. Make time for this, visit multiple times and talk to as many people as possible - all of this will help you in reaching a sound decision. Ultimately you want to be in a place where your science and you as a person are supported and valued. Your success should matter to your colleagues. In particular, try to identify and actively engage people that you would like to become your local mentor - it can be incredibly important to have someone next door to get advice from and at times to share your worries. If you have a family or partner, make sure to take them along on at least one visit. In general, include them as much as possible in the entire application and decision process - they will often be a key factor in taking the decision. Ultimately you want to go to a place where you will be happy as a person and a scientist.

People, people, people

Before you decide we would like to mention the one factor which will be critical (if not the most critical) to your success, and which you should consider in your decision making process: Given the

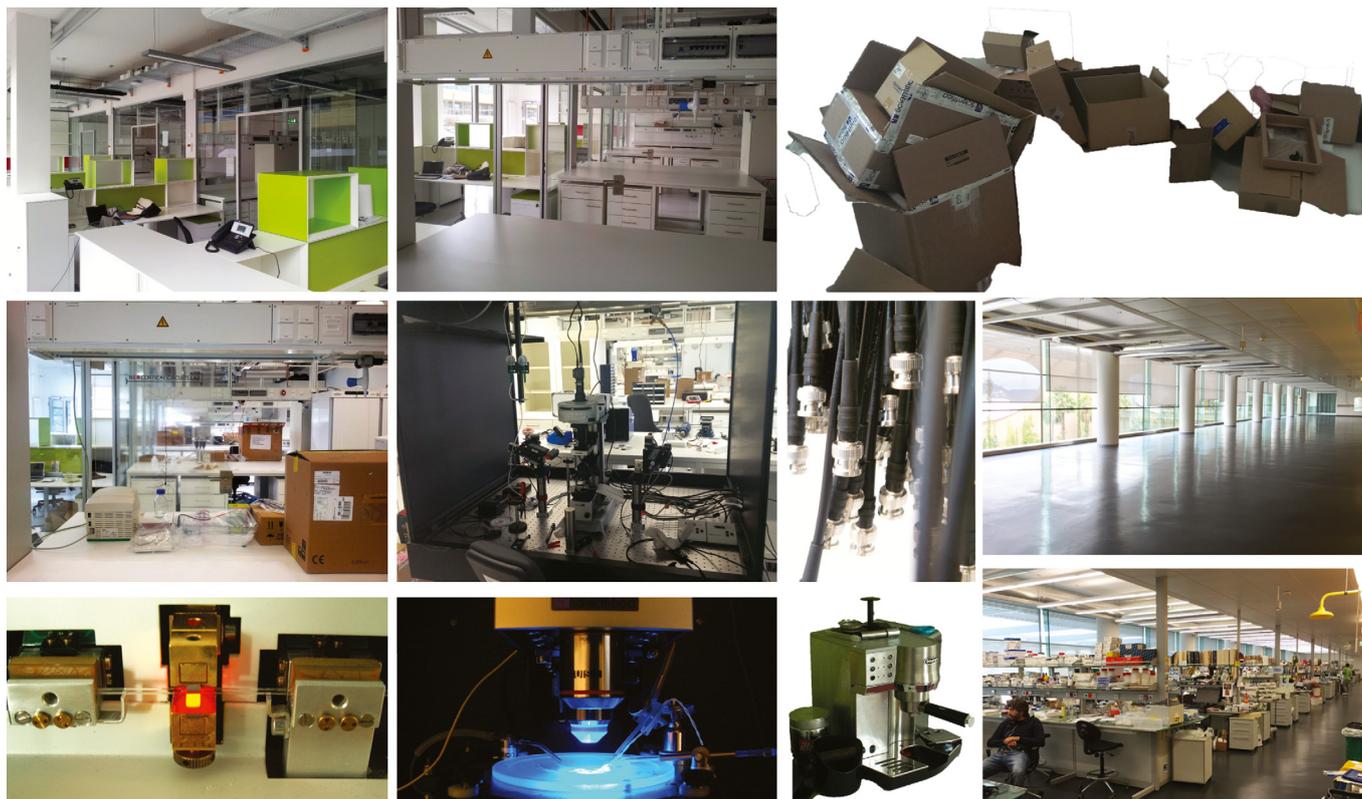


FIG. 1. What's ahead: Seeing a lab come to life is an incredibly fulfilling (and equally chaotic) experience. Pictures courtesy of Rogier Poorthuis and Carlos Ribeiro.

conditions, what are the most outstanding people you expect to be able to attract to your future lab in your future research environment? At this stage one needs to face reality: it is generally difficult to recruit top postdocs if you are a junior PI. So unless you are very lucky, your best people will be students. So ask around from where people recruit their lab members. Can you teach there and get to know the best students? Is there one or more graduate programmes in which you can participate? Does the profile of the best local students fit your research programme? Looking at the labs of your future colleagues and getting a feeling for how happy they are with their lab members is an important criterion for you to decide. For postdocs it might be advantageous to be in an exciting city or a picturesque location where many people want to live. And obviously, being in a top place helps. The scientific atmosphere at your future place will be critical for motivating your collaborators and attracting top people. So make sure you go to a place where you will have the opportunity to attract the best people. They will be the most important factors in your success.

Time to decide

We are now almost at the point where you can reap the results of your efforts, and follow your own scientific ideas in your very own lab. Quite typically, at this stage the offering institution(s) can get a little impatient and put pressure on you to decide. Take the time you need, but don't drag out negotiations unnecessarily - this is very frustrating for everyone involved and can seriously slow down the hiring process in general. A good rule of thumb is that if the decision seems terribly difficult, it is probably because you

are choosing between good alternatives. Nonetheless, here are the crucial factors as we see them: Are you excited about the science being done at the institution? Did the negotiations give you the impression that you will get along well with your future colleagues, and receive the necessary support for your work? Are the mutual expectations clearly defined? Can the institute offer you a package that will support you in the beginning 3-5 years to achieve your first aims? While the best case scenario is to be as independent as possible from external funding (there are a few excellent institutions that can offer this in Europe), often success can be achieved through good mentoring support that increases your possibilities in securing grants and in facilitating your transition to independence. In any case, you should request the best possible conditions that can be offered. Don't underestimate what can be achieved by asking! And finally, and almost most importantly, ask yourself if you will be able to attract the best possible people to your lab. Once you have decided, celebrate big and don't look back! You took the best decision given the available information and you are now going to experience science at a different level. For many of us running a team is the highest aspiration of our scientific career and few get this opportunity (Fig. 1). So let's party and stay tuned for our next article on how to manage your new life as a PI.

Key advice

- 1 Negotiations are the first occasion when you assume full responsibility for your lab- take them seriously and stand up for your requirements.

- 2 Carefully define your needs, and communicate them in a factual manner.
- 3 Clearly define mutual expectations.
- 4 Don't decide purely on material terms. Aim at working in an excellent scientific environment that suits your personality.

Further reading

Two excellent resources (albeit very focused on the US) with in depth advice are: "Making the Right Moves" by the Burroughs Wellcome Fund and HHMI available here: <http://www.hhmi.org/programs/resources-early-career-scientist-development> and "At the helm - A laboratory Navigator" by Kathy Barker published by CSHL Press.

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The authors are scholars of the FENS-Kavli Network of Excellence, a network of young neuroscientists, with the goal of fostering exchange – scientific or about science policy - between excellent junior/mid-career neuroscientists who are either currently working in Europe or received their academic training in Europe. Ragnhildur Thóra Káradóttir is a Wellcome Trust Career Development Fellow at the Wellcome Trust – MRC Stem Cell Institute. She studies how neuronal activity regulates myelin formation, maintenance and myelin regeneration in white matter diseases. Johannes Letzkus heads the Neocortical Circuits Lab at the Max Planck Institute for Brain Research. He investigates how different behavioural functions such as learning and attention shape the computations of neocortical circuits. Manuel Mameli is leading a team within the Institute du Fer a Moulin at Inserm. He studies how synaptic and cellular adaptations contribute to motivated behaviours in physiological states and in rodent models of neuropsychiatric disorders. Carlos Ribeiro heads the Behavior and Metabolism Laboratory at the Champalimaud Neuroscience Programme. He studies how the nervous system makes nutritional decisions to optimize the fitness of the animal.

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