

describing your work to a researcher at a foreign university. Needless to say, you must have at least some mathematical intersection with that person, and to discover this you must look at his/her published work.

It is best not to be too ambitious or demanding: if you insist on a tenure-track position right away, or salary matching, then you will not get very far. Respect for seniority is important, and the younger you are, the more respectful you are expected to be. If this does not appeal to you, then Asia is not for you. But respect works both ways—if you are polite and hard-working, then you will be treated well, and, yes, respected.

Fortunately mathematics is a very culturally-neutral subject, so you will have virtually no problems in daily mathematical life. You may find a position where everything (administrative work, not just teaching) can be carried out in English, but this is very much the exception. Even if your immediate colleagues can speak some English, support staff rarely do, and your life will be immeasurably smoother if you learn at least a little of the language (even for a one-year position this is worthwhile—and can be fun).

Regarding Japan specifically, academic life is different in a number of ways. Salaries are basically fixed on an age-related scale (within a given rank). This system has pros and cons, but it does remove a source of potential stress and conflict. Current salaries are not over-generous in my opinion, but are adequate, as inflation has been very low in Japan for many years. On the other hand research funds tend to be distributed quite democratically, and are designated primarily for travel and computer equipment, which can be advantageous to mathematicians. There is a very active domestic conference scene, and you will have many opportunities to give talks and make contacts. Safe and inexpensive business hotels, and excellent public transport by road, rail, and air, make travel in Japan very easy and convenient.

Teaching loads vary quite considerably. These are generously low at national (i.e., public) universities, but higher (sometimes much higher) at private universities. It is important to ask about this before accepting a position. Whether you will be able to teach in English at a Japanese university is very much a case-by-case matter. Of course, in a position which specifically solicits an English speaker, you will teach in English. But you may end up teaching very low-level courses to a small fraction of the university population, which will limit your activities. On the other hand, even in a position which is intended for Japanese speakers, you may be allowed to teach in English initially. In general, I would say there is little prospect of wholesale adoption of English as the language of instruction at Japanese universities, even at graduate school level.

Teaching (even in English) will probably not be exactly what you expect, even if the mathematics is the same. As a graduate from a US university, even with a brand new PhD, you will probably already have teaching experience, and

this puts you in a strong position. In particular you will have your own ideas about what constitutes good teaching. On the other hand you should not expect colleagues to listen to your ideas, at least, initially. Just regard your teaching assignment here as an adventure, and keep your counsel for the right time and place, when it will be valued and appreciated.

What kind of people do well here? *Prima donnas* are frowned on. Exhibiting selfishness is a cardinal sin. People who cannot separate their work life from their personal life are regarded as eccentric; people who question every rule and regulation are not admired. Acting like an adult is important. Communal effort is important, in the sense of being willing to help with departmental tasks—and this tends to create a positive atmosphere. You will be praised often, and never criticized, but this should not be taken at face value: you may have to work a little to find out what people really think. Some ability to “read the air” is needed. Needless to say, this way of life is not for everyone—you will have to make your own assessment! But, with an open mind (and, remember, your inner mathematical balance), working in Asia could be extremely rewarding. In Japan there are still very few non-Japanese faculty in mathematics departments, so you may even end up as a minor celebrity...



Martin Guest

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## Applying for Jobs Outside the US

*Daniel J. Thompson*

Are you an early career math job seeker? If so, have you considered applying for positions beyond the US job market? This article gives a starting point to understand some of the differences between job seeking in the US, and in

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other countries. In particular, it is important to recognize that each country will have its own way of doing things (timeline, methods of advertising positions, application process, interviews, etc.). In this article, I discuss how things work in the United Kingdom, which is where I lived until I completed my PhD. I don't mean to suggest that conditions for academic job seekers will be particularly favorable in the UK (or any other specific country) in the current environment. My purpose is more to give a sense of the differences you might encounter, and how one country does things differently. The specifics will differ from country to country. I advise seeking out some local knowledge and being prepared to make a few adjustments (relative to a US-only search) to find these opportunities and maximize your chance of success. For seeking jobs in the United Kingdom, here are some of the basic differences.

### 1. There is No Annual Job Cycle

In the US, the vast majority of positions appear on math jobs.org. The annual job cycle customarily takes on a fairly standardized set of deadlines through the year, with job adverts appearing in August and September, deadlines later in the Fall, and interviews in Winter, for positions starting the next academic year. Jobs are applied for with a click of a button, so most people apply for most positions. Often, the universities then compete with each other to recruit the same candidates. None of this is true in the UK. There is no job market as we know it in the US, there are just jobs. Positions are advertised at unpredictable times, and they almost always require a customized application through the university's own website. A few of the more internationally-minded universities (such as my alma mater University of Warwick) are able to adopt the US timeline for some types of position, and advertise on MathJobs, but this is the exception rather than the rule. It is also quite typical that a permanent position might be advertised in late Spring or early Summer for a September start date, with the timeline dictated by the needs of the individual university rather than any attempt to align with other institutions. You should be aware that job titles are different in the UK—"Lecturer" is roughly equivalent to Assistant Professor in the US, while "Reader" is roughly equivalent to Associate Professor. Job seekers need to keep their ears to the ground for opportunities. The website [jobs.ac.uk](http://jobs.ac.uk) is a good starting point, listing most available positions, but it is designed for all academic jobs in the UK, so it is rather unwieldy. Informal advertising also plays an important role for jobs in the UK. I tend to hear about UK post-doc opportunities, etc., in my field from a mail list that I subscribe to from the London Mathematical Society Ergodic Theory Network. There might be similar mail lists in your field,<sup>2</sup> so

<sup>2</sup>Many other LMS research networks maintain mail lists, see <https://www.lms.ac.uk/grants/joint-research-groups-uk-scheme-3/current>.

asking someone in your area for some inside information is probably a good way to keep in the loop.

### 2. Postdocs are Typically Research-only Positions

In the UK, postdoctoral positions are often entirely funded by a grant held by a more senior Professor. These are primarily research positions with minimal (if any) teaching duties, and are designed for someone who will be working in the same specialty as the grant holder. It is totally unpredictable when positions of this type will appear. However, they are worth looking out for—if the stars align, and the right position appears at the right time, it could be the most perfect postdoc position for you in the world! Another advantage is that, because of the high specificity of these positions, the applicant pool is restricted to candidates in your area rather than all of mathematics.

### 3. Application Processes Vary Substantially

Each university will have its own application process managed through its HR department, and will likely require a fair amount of customization. Thus, sending an application in the UK can be time consuming. The positive aspect of this is that typically only serious candidates apply. The pool of applications received is thus typically small enough that all applications will be read (which sadly is not always true in the US). In your application, it might improve your chances if you can show that you have a good sense of expectations in the UK system. Showing that you are aware of, and can meet, research expectations is particularly important. For permanent positions in the UK, it is a good idea to demonstrate some awareness of the "REF,"<sup>3</sup> which is a national attempt to measure the research quality of all UK academic departments and takes place every four or five years.

If the position requires a teaching statement, you should write it with UK expectations in mind. In the UK system, mathematics undergraduates focus on proof-based courses from day one, since their studies of calculation-based calculus are largely completed in high school. Thus, a long teaching statement about your passion for teaching Calculus I to Freshmen, which might be perfect for US purposes, could need some adaptation for the UK. Incidentally, there are some differences between US and UK English in terminology related to university teaching. For example, I had never heard of a "Recitation class" until I moved to Pennsylvania. In the UK, I used to teach "Support classes." It is probably best to seek advice from someone who can help you make these translations.

<sup>3</sup>See [https://en.wikipedia.org/wiki/Research\\_Excellence\\_Framework](https://en.wikipedia.org/wiki/Research_Excellence_Framework).

#### 4. All Candidates are Usually Interviewed on the Same Day

In the UK, it is typical that all the candidates selected for interview visit the department on the same day, with the date chosen by the university. This can pose logistical difficulties if you suddenly find you need to get to the UK on short notice with no flexibility on the date! Remote interviews may be possible, but I have heard of cases when the interview panel were only available in the morning UK-time, making for a very early start in the US! Exact details of the visit vary widely—you might be asked to give a 20 minute presentation on the “big picture” of your research, or a more traditional hour-long research talk. There could also be a teaching presentation. An interview by a panel is typical. It is possible that the panel will include a Dean and a faculty member from another science department. The interview might contain questions that get you to think on your feet, so be prepared! An American friend of mine who interviewed in the UK years ago was taken by surprise by the question “What do you find attractive about the UK system?” You might need to prove that you know what you are getting yourself into!

Another difference is that, unlike in the US where the process of filling a position may continue for weeks after the interviews, in the UK the job offer is often made at the end of the day of the interview, with a tight acceptance deadline. This is certainly ideal if it is the only application you have in process, but can also potentially be problematic if you have some other irons in the fire. This does mean that if you go for a position in the UK, you should be serious about taking it if it works out.

#### Summary

There is a whole world out there, and there could be great opportunities for you beyond the US job market. There are certainly some challenges in seeking jobs outside of the US, notably how to find out about them in the first place. If you find a job that looks right for you, there will then be a learning curve in adapting your application to local customs. The best advice I can give is to talk to people in your professional network who can give you the inside information that will help you. There are many examples of US-trained mathematicians who have spent time overseas as postdocs, or even made their careers in other countries. The experience of being immersed in a different mathematical culture can be really wonderful and stimulating. It certainly has its challenges too, but having made the transition myself from the UK to the US, I can certainly recommend it. If you are an early career job seeker, expanding your search to other countries could be well worth your consideration.



Daniel J. Thompson

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## Postdocs at European Universities. A Brief Guide

*Federico Binda and Chiara Damiolini*

For graduate students at American universities who want to pursue an academic career, it might be instinctual to restrict one's job search to postdoctoral positions in the US. It is less common to apply for postdocs elsewhere, and so it is not always clear how to apply for positions in other countries, what the timeline is to do so, and which aspects of the process are different from the American counterpart. In this article, we will focus on the European job market which seems to be less affected by the Covid-19 pandemic, in contrast to the American situation where in the next years we may see a reduction in the number of available positions. In particular we will delineate the main differences in the application process, and give some guidelines that will help you navigate the job search, which can be very stressful especially in these uncertain times. We will also highlight some of the difficulties that you might encounter during the application process as well as some of the challenges and advantages that you might come across if you decide to move to a European institution for your postdoctoral position.

#### Before the Application

The main thing to remember when one applies for a job in academia is that the process starts early. Especially when you apply to a position in a far-away location, it is important to build a network which goes beyond your local circle. It is needless to say that the main step is to first prove interesting theorems and then let the experts in the field know about your new results. Do not hesitate to directly

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