



Ask Professor Nescio

Editor's Note: Graduate students, early career faculty, and other mathematicians may have professional questions that they are reluctant to pose to colleagues, junior or senior. The *Notices* advice column, "Ask Professor Nescio", is a place to address such queries. Nomen Nescio is the pseudonym of a distinguished mathematician with wide experience in mathematics teaching, research, and service. Letters to Professor Nescio are redacted to eliminate any details that might identify the questioner. They are also edited, in some cases, to recast questions to be of more general interest and so that all questions are first person. Some letters may be edited composites of several submitted questions. Query letters should be sent to notices@math.ou.edu with the phrase "A question for Professor Nescio" in the subject line.

—Andy Magid

Dear Professor Nescio,

I got my Ph.D. as a good graduate student at a respectable university. Yet I find 80–90% of the articles and reviews in the *Bulletin* that the AMS sends me to be simply incomprehensible; within a page or two, sometimes already from the first sentence on, it might as well be Slovenian. I don't know what those words mean. Am I an idiot? Do other people have the same trouble? What can or should I do to increase my comprehension?

—Sincerely
R. H.

Dear R. H.,

If I am doing the mathematics correctly, this means you understand 10–20% of the items in the *Bulletin*. Congratulations! You are better educated than Professor Nescio.

I try to read many abstracts from areas close to my research interests and often even that proves daunting. The plain fact is that mathematics is highly specialized. That's something you probably already knew, but what you are finding out is that it is even more specialized than you had previously thought. Be assured this lack of comprehension is not your fault. It is not the "fault" of mathematics either. It is just a fact of life. We can lament the specialization of mathematics and wish that things were different, but that is nonsense. The specialization is just part of the nature of the subject and a requirement for its development.

The late Paul Halmos advised colloquium speakers to make the first 15 minutes of their talks accessible to the entire audience. Do you know how difficult that is? Surely if you have attended many colloquia (and as someone who tries to read *Bulletin* articles, I am assuming you wish to be widely informed of mathematics and are therefore a faithful attendee at your department's colloquia), you have seen how miserably most speakers fail to do this. Many, for whatever reason, do not try;

but even those who heed this sage advice often fail because the task is so challenging.

With time you will probably discover that you comprehend more, provided the term "comprehend" is suitably understood. If you seek complete mastery, forget it; things will never get better. If you seek, however, to place the subject matter in some context, to get a general idea what is happening in the given specialty, to see where some area is headed, then you will get some satisfaction. Trying to increase the breadth of your view of mathematics is a worthy undertaking. It is also fun. So many of my colleagues narrow their view so that it barely escapes their immediate research. Professor Nescio frequently bemoans this lack of peripheral vision. So I salute your desire and wish you well.

—Respectfully,
Professor Nescio

Dear Professor Nescio,

I have published a joint paper with another author, and the reviewer of *Math Reviews* wrote in her review in MathSciNet that we had to mention her book in the paper. Since her book has no connection at all with our paper (and with the field in which our paper belongs), there is no other explanation than that she wrote her review in that way just to increase her citation index in MathSciNet or to sell her book or both. As soon as I saw that review in MathSciNet I wrote to her and to *Math Reviews* as well but the problem has not been solved yet. That review should not remain in MathSciNet as it is. Could you please help me to solve that problem? Thanking you for your time,

—Sincerely yours,
Professor N. K.

Dear Professor N. K.,

This is a rather irritating situation. I am afraid, however, that Professor Nescio's powers are quite limited. I certainly have no influence over MathSciNet. I do have some appreciation of the fact that the MR editors have no desire or inclination to act

as a referee in such matters as deciding whether you or the reviewer has the most legitimate case. For one thing they have only enough staff to do their normal work. (And perhaps you will not object if I say at this juncture that MathSciNet is one of the greatest applications of computers and human intelligence to help us in our work.) To enter into a dispute like this would consume enormous amounts of their time since, as I am sure you can appreciate, they cannot merely accept your word that the reference is irrelevant.

Professor Nescio's interest in human nature is as great as his interest in mathematics, but unlike in mathematics he often sees things that are so disheartening. Why someone, presumably an established mathematician who is asked to write reviews, would want such a small aggrandizement and be willing to pay the coinage of public intellectual dishonesty is perplexing. Could it be that some egos are so great that they actually believe such statements? Perhaps such a question is exactly what is so fascinating about the study of people.

Unfortunately the incident that personally affects you is not the first such example that Professor Nescio has heard about. You might take a bit of satisfaction that the aficionados in your area will recognize the irrelevance of her comment and reach the same critical judgment that you did.

—*Respectfully,*
Professor Nescio

Dear Professor Nescio,

I've been asking several mathematicians and other non-math academic friends what their perception is of the concept of "postdoc".

What is the purpose of a postdoc? Why would a recent Ph.D. (or soon-to-be-graduating Ph.D.) want to take a postdoc? Does completing a postdoc improve one's chances for a "better job"? What's the role of the host institution—are they providing some sort of benefit to the postdoc that a person taking a tenure-track position would not normally get? How does a postdoc position differ from a "Visiting Assistant Professor" position? Thanks.

—*Confused about academic paths for mathematicians*

Dear Confused,

I love this question. It will give Professor Nescio a chance to discuss a topic that he frequently and usually enjoys but that also occasionally reveals abuse of language, young mathematicians, and the profession.

Here is what I think a postdoc means (or should mean) and is associated with the term by most professional mathematicians: a temporary position for new or almost new Ph.D.'s that lasts two or three years and carries a reduced teaching load of two or three courses per academic year. The idea is that the postdoc has a chance to work with more

senior faculty on research and ripen their talents. The benefit for the host is that there is a constant infusion of "young blood" into the intellectual life of the department.

The time spent in graduate school is not sufficient to fully launch a robust research career. The intellectual growth of a postdoc can be enormous. After two or more years under the supervision of a thesis adviser, it helps to be exposed to a new viewpoint and a different current to propel you into that vast open sea of mathematical research. This is also a good reason for attending conferences and speaking about your research, but there is more intensity in the postdoctoral experience and it lasts for a longer time. With a reduced teaching load and, presumably, less service activity on committees, there is also ample time to pursue research and benefit from this intensity. This type of benefit also accrues to the more senior host; we all benefit from discussion and input about our ideas.

I think you can see that if this is what happens, what the position is called is of little importance. Whether you are called an instructor, lecturer, or assistant professor has no relevance. Below I'll talk a bit more about the title when I discuss abuse.

If you have a successful postdoc experience, this will help you obtain a position at a research department. In fact, few such departments hire tenure-track faculty straight from graduate school. If you are on a search committee and examine a batch of applications for an assistant professorship, when you place the folder of a fresh Ph.D. next to that of someone in the third year of a postdoc, the difference is enormous. The postdoc has more achievements, and there are fewer questions about their personal contribution to their research. The letters of recommendation are usually stronger, with heavier discussions about accomplishment rather than promise. If your ambition is to teach at a four-year institution, however, taking a postdoc has less merit. It can still benefit you but I suspect in most cases it will not make you a more attractive candidate.

You said you consulted academics outside mathematics. Be aware that postdoc positions in the physical and biological sciences have been around longer than in mathematics and there are far more of them. There are some enormous differences: In these sciences, postdocs last much longer and there are usually no teaching duties. The experimental sciences depend on postdocs and graduate students to staff laboratories.

Now for the abuse, which can take many forms but usually occurs when the institution wants cheap, temporary teaching power or when the "postdoc" lasts only a year. Some institutions at least have the decency to give these positions a different name such as Visiting Assistant Professor or Teaching Postdoc. In my opinion this is not a good way for a young person to launch a career.

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I have seen such positions with a teaching load of three courses per semester. What sort of extra training and education you are supposed to get from teaching a lot of courses escapes me. Where is the valued-added? If the appointment is for only a year, you will begin applying for another position almost as soon as you enter the campus. If a postdoc is never allowed to teach an advanced course, that's abuse. If he/she teaches a large class with no grading or GTA assistance, that's abuse. The purpose of a postdoc is not to make life easier for faculty at the host department. (Professor Nescio must approach this topic gingerly; he is getting very upset.) Accept such a job only if you must. When you leave such a position after a few years, you are no longer a new Ph.D. and for the extra time you will have little to add to your CV. You may look less attractive to employers.

What is the role of the host institution? Let's first ask what it should be, which is to help you launch your career. This means providing you with some travel money, allowing you to teach some advanced courses, ideally including a seminar in your area, and mentoring you into the next phase of your career. Should you ever interview for such a position, ask about the teaching. Can you teach a seminar? (There is nothing like teaching a graduate seminar to give you perspective and discover research problems.) Will you have a paper grader for the elementary courses, especially the larger classes? Will they give you the option of doing more teaching one semester for less the next?

What should you do while a postdoc? Of course you should pour yourself into your research. Go to conferences, talk about your research whenever you can, make as many contacts as possible. Take your teaching seriously. Professor Nescio would be most disappointed to hear that a postdoc did otherwise as this would abuse the students, abuse the profession, and reflect badly on you when you enter the job market. You might also search for a tenure-track job in a highly selective way. From the start, keep your eye open for very attractive positions and apply for them. Discuss this with your host before doing it (and I am not talking about sending out a hundred applications or even a dozen). But if a very appealing position becomes available, you should try for it. It is unlikely to be available when your postdoc ends; and you can enter the search without the pressure of having to find a job but actually looking for an opportunity.

Several things were unclear from your letter, for example whether you are a student, whether you are personally trying to decide whether to apply for a postdoc, etc. I hope that whatever the case, Professor Nescio has provided some information you will find useful. Whatever your status, he wishes you the best of good fortune.

—Respectfully,
Professor Nescio

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