# FOCUS on Students: The Job Talk

*By Michael A. Jones and Karen Saxe*

It's that time again — the academic job-market season. For those on the academic market for the first time, those reentering the market, and those serving on a college or university search committee, the job talk is crucial. It provides the best opportunity for a job candidate to showcase their mathematical knowledge and to demonstrate their teaching promise.

We have gained valuable experience interviewing for jobs, serving on search committees, and attending job talks. Because our institutions place high value on teaching, require regular research contributions, and expect faculty members to work with students outside of the classroom, the job talk is used to evaluate research potential and compatibility as well as teaching ability. As such, the job talk is more of a colloquium, in which one's own research is highlighted.

In this article, we give advice on how to give a job talk that features your research and also demonstrates your teaching skills. Not only can job candidates benefit from this advice, but members of search committees can too. Indeed, our advice may help search committee members to communicate their expectations for job talks to their candidates and to develop a rubric for evaluating talks. Some of our advice can be transferred to job talks at other types of institutions. If you find yourself on the job market or on a search committee again in the future, realize that these expectations evolve over time.

**Basics**

If nothing else, you should know the expected length of your talk, when during your visit it will be given, and the size of the room in which it will take place. You should also find out if that room has a whiteboard or blackboard, an overhead transparency projector, and a projector to use with your laptop. (Asking about this helps the search committee make sure the right equipment is available)

The golden rule is to make sure that you do not go over the time allocated for your talk. Try to leave a few minutes for questions. Further, have the appropriate number of slides for your talk. Skipping slides or rushing through slides to finish in a timely manner is almost as bad as not finishing on time. Remember to use fonts that are easy to read and big enough. Avoid using too many words on a slide. Practice your talk in front of peers, and solicit feedback, to ensure that these basic requirements are met. Once on campus, visit the room and make sure your laptop works with their projector or try out your overhead slides.

**Audience and Content**

At some schools, you will have a room with half a dozen faculty members and one or two of them may be in your subfield of mathematics. At other schools, you may be talking to thirty or forty eager undergraduates (plus the half dozen faculty members) whose only shared mathematics is linear algebra, or even calculus. In this latter scenario, the search committee may want a talk targeted at the students, or not. Find out! Think about how you might interact with your audience.

Because of the potentially diverse audience, presenting extensive details of proofs is not a productive use of time. It is better to stress the elegance and importance of the results and to sketch more complicated proofs. Remember to include examples and/or figures to motivate and to demonstrate your theoretical results. Feel free to spend the last few minutes of your talk on a more complicated aspect of your research. Of course, this should still be accessible to some faculty.

If you are hired at a predominantly teaching institution, you will have to teach a wide variety of courses. Use your job talk to demonstrate your range by touching on more than one area of mathematics (if possible) and pointing to a variety of results. If your research can be applied, then explain how. Because the job talk is used to gauge the potential for future research, indicate where the area or field is going and how you plan to contribute. If a portion of your future work lends itself to student involvement, then mention it because the search committee could be looking for your ideas about class projects and undergraduate research topics.

**Media and Style**

Although the current technology standard for delivering a job talk is computer-projected slides, including LaTeX's Beamer or Microsoft's PowerPoint, use media with which you are comfortable. If you use such slides, do not get too fancy — the amusing slide transition becomes old quickly. Bring a back-up copy of your slides and email a copy to yourself. Keep in mind that overly busy slides are difficult to decipher. Consider writing some content on a board to demonstrate your in-class teaching ability. Interacting in this way, as well as writing on overhead slides, engages the audience in your talk and provides a natural way to address questions and comments.

Finding your own talk style is delicate. Only by practicing and by giving many talks will you hone your style. Above all, it is best to be yourself. Since you are also trying to give an impression of what you will be like as a classroom

This is the third in a series of short articles for students. This article is a follow-up to the article that appeared in the October 2007 issue, which is also aimed at graduate students looking for jobs. The overall title for the series will be **FOCUS on Students**. Some of these articles will be for undergraduates, others for graduate students, and many for all students. These articles will also be posted in the Student section of the MAA web site.

teacher, give a realistic impression. Try to interact with the audience — especially with the students — before, during, and after your talk. Many speakers start with an anecdote about themselves or with a joke; a brief personal story or infusion of humor can be very effective but don't overdo it and only do it if you feel comfortable.

At the beginning of your talk, consider acknowledging a campus event as a way to connect to your audience. This can be done by studying the college or university's web pages, reading the school newspaper, or reading bulletin boards in the department. If possible, mention related contributions made by people at the institution. This demonstrates that you are aware of your potential colleagues' work. Plus, it is flattering!

In general, do not be self-absorbed — show the audience that you are interested in being one of their colleagues and that you care about the students. Interviewing for a job is also about determining if the institution is a good match for you. Doing your homework helps.

**Other places to look**

Regularly you will see articles published on how to give a job talk. We recommend that you read several, take in all of the advice, and decide what will work best for you. Remember that ideas about what makes a good talk, as well as the technology available to present your talk, change over time.

Professional organizations often have relevant information on their websites. In mathematics, the organizations to look at include the Mathematical Association of America, the American Mathematical Society, the Young Mathematician's Network, and the Society for Industrial and Applied Mathematics. You should also look at the *Chronicle for Higher Education* and do an Internet search since several mathematicians have posted advice on their personal web pages.

The job talk is the centerpiece of your campus visit. Think about the content, as well as how you deliver the content and how this reflects on you as a potential teacher and colleague. If you are unsure about the expectations for your talk, or any aspect of your visit, ask. Job-market season is an exciting and stressful time. We hope that our advice will help eliminate some of the stress associated with the job talk.

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## What Not to Do

By pulling strings, I arranged for Richard to be invited to give a talk to an undergraduate mathematics group in Dublin. Actually, I had to pull only one string, suggesting the possibility to someone that I knew. Societies that present talks are always grateful to have speakers, especially those that cost very little. I knew that I had succeeded when Richard called.

"Owen," he said, "My fame has spread at least as far as Dublin. I've been invited to speak there. You'll want to come and listen, won't you? It would be helpful if you could provide transportation. You won't mind if Michelle comes along, will you?"

"Of course not," I said. "What will you talk about?"

"Oh, this and that," he answered. "It's an undergraduate group, so it can't be anything very deep. Undergraduates have short attention spans, so they won't notice if the talk doesn't hang together. And they'll be so happy to have a decent speaker that I could talk about anything."

"You're sure that you'll be more decent than what they usually get?" I asked.

"Owen, you haven't gone to enough mathematics talks. All you have to do to stand out as a terrific speaker is to avoid obvious blunders. Not too long ago I was at a talk where the speaker never looked at the audience because he was looking at the projections of his transparencies. They were in type too small to be seen, so he was reading them to us, word for word, symbol by symbol. Since he wasn't using the microphone, he could hardly be heard, though his shadow could be seen when he stood in the way of the light from the projector. He also went ten minutes past his allotted time. Not only wasn't he hooted from the platform, when he finally finished he got an undeserved patter of applause. I will be splendid in comparison."

The lecture room was about two-thirds full when we arrived, with more empty seats towards the front than in the back. Richard had been prepared for this. Undergraduates, he told us on the way there, have a highly developed fear of fire and always want to be close to the exits, just in case.

From chapter 14 of *The Magic Numbers of the Professor*, by Owen O'Shea and Underwood Dudley (MAA, 2007).