Whose Responsibility?
(Preparation for College Teaching)[1]

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Mathematicians packing before departure for their first regular faculty job may need to select from among their own capabilities in quite different proportions, depending on the destination. They will be able to fill the right luggage if, well in advance of the departure date, each acquires a balance of capabilities and understandings related to the tripartite faculty role.

How can this be assured? Who has the obligation to see that a person has the right components to pack for a specific new job? In the earliest recommendations of the Committee on Preparation for College Teaching, we placed this responsibility on doctoral departments. (See the ***First Report*** in Chapter 1, *You're the Professor, What Next? Ideas and Resources for Preparing College Teachers.*[1]) After three years' working with the experiments of this project, I would say nothing to diminish the necessity and urgency for doctoral department efforts. In addition, it is now clear that there is enough responsibility to spread around: doctoral students themselves must begin habits of self-evaluation and professional development; and hiring departments, in both postdoctoral and tenure-track cases, should provide caring mentors and possibly formal activities. The early acceptance of this personal responsibility will serve mathematicians well through the changes of a career in academia. Hiring departments will be better served when their departmental and college priorities and needs are understood and hence may be met. Junior faculty members who have had the opportunity in their doctoral or postdoctoral programs for a structured introduction to a broad range of information about pedagogy and faculty obligations are able to adjust more easily to serve their new students.

But joint responsibility is sometimes perceived as belonging to no one. If you have come this far reading or browsing in this book, and if you find yourself saying "Well, yes, someone should..." then please consider this anecdote: When new to departmental administrative work, I asked the university police for advice about an incident. After the threat of a more serious problem had abated, the officer in charge thanked me for calling; I replied that I was not sure when to call. He said "If you ask yourself 'Should I call?' then do it!" If now you find yourself saying "Should I do something about this?", the answer is "yes." I hope you will find in this book many things to help you properly acquit your perceived responsibility.

What can and should a doctoral department do to help its graduate students or postdoctoral fellows? To use an analogy with the upbringing of our natural children, a department should assume responsibility to assure at least two types of nurturing.

- ◇ The parent role: Individual mentoring in research (where the thesis director is often referred to as the mathematical parent) and perhaps also in teaching;

◇ The school role: An organized activity led by senior mathematicians which anticipates future responsibilities with a broad view. (See in particular Steve Rodi's essay in this chapter, and information about the Professional Seminar in Chapters 4-14.)

The organized activity to meet this responsibility may share some techniques with the orientation of teaching assistants but differs in that its focus is on the lifelong careers of the graduate students.

There is bad news and good news about the support, financial and personal, needed for success. The bad news is that money probably cannot make a program successful unless it is considered valuable by a reasonable number of the department's faculty and doctoral students. The good news is that a small core of faculty who believe it will be valuable can make a difference by their enthusiasm. The financial costs are not great, but faculty time must be allocated; it will not endure long if it is an "off load" activity for either the professor or the doctoral students.

What might developing mathematicians do to help themselves? Some helpful activities, in or outside a formal program, are perhaps obvious but are important enough for quick mention: Read (the essays, reprints and references of this book are a strong start); go to professional meetings; learn about areas of mathematics other than your research interest; talk with other graduate students and faculty about teaching methods and controversies; ask to observe classes of professors or graduate students who are trying new methods or are considered especially effective; try new ideas in your own classroom if you are teaching; develop your interaction and communication skills with peers and students; develop contacts who can help you learn more; and think a lot about all of this.

At this writing the Young Mathematicians Network (loosely patterned after the more established Young Scientists Network) offers valuable shared information through an e-mail newsletter and encourages collegiality and a broad view of the profession through informal communications.

If you are a doctoral student or postdoc who is given the opportunity to participate in an organized activity of the type of the professional seminars described in this book, then you are fortunate. It is very practical (and perhaps is open to cynical abuse) to note that this activity is for the future job seeker what a prime-time photo op is to a politician. It lends seriousness and legitimacy to your claims of interest in teaching, and the teaching portfolio which can then be assembled gives substance to those claims. If you do not have the benefit of an organized program, you may arrange for yourself the benefits of some of these activities. Especially in that case, you may want a teaching mentor in addition to your research director; with some thought you will be able to identify a faculty member who is known to be a good teacher and who you think will want to help you.

What must wait until after hiring? What are the responsibilities of hiring departments? "Preparation" for college teaching is really a lifelong activity; it must continue past the award of the doctorate at least to the point of tenure consideration. Hiring departments, especially those who hire new PhDs as assistant professors or postdoctoral fellows, sometimes treat them as though they are being tested. Unfortunately, unwritten rules sometimes exist, and should be taken into account. The novice faculty member must, therefore, do everything within reason to discover what is expected, both explicated and not. Well-meaning senior faculty sometimes feel strongly that junior persons' freedom is abused if they are advised in certain choices they might make. The shortsightedness of this "sink or swim" policy is apparent when you consider the negative effects on students and the expense of recruiting, replacement, and other administrative implications.

The hiring department may be very different from the departments (undergraduate and graduate) of the new PhD's experience. The newly appointed person may not know just what is expected, and it may be that, even if former mentors from the doctoral department are consulted about a problem, they cannot help. The only answer seems to be that hiring departments should assure that each new faculty member has a mentor regarding each type of new responsibility. Some interesting ethical questions arise as to the role of this mentor (or mentors) at decision junctions such as retention and tenure. How much obligation is there to be an advocate, or to remain neutral? How much of the mentoring relationship is confidential? Though there was a lively discussion among ten of us at a recent meeting of mathematical sciences department chairs, definitive answers were not reached. All agreed that mentoring was essential and that these and other practical and ethical considerations must be kept in mind.

What can individual senior faculty members do to help? The most effective mentors to work with advanced doctoral students or new PhDs who are thinking about their future academic roles are professors who in their careers have shown accomplishment and interest in effective teaching, productive scholarship, and unselfish service activities. If the numbers of developing mathematicians in the department justifies, senior faculty can encourage setting up suitable programs, possibly including both advanced graduate students and newly appointed faculty. In either situation, senior faculty members have a responsibility to inform themselves about the resources available for help. This book and the sources it lists are a good foundation; it is important to stay abreast of current situations that affect developing mathematicians. (The information through the Young Mathematicians Network is also useful for senior faculty acting as mentors.)

The doctoral or hiring departments can and should build a bridge for mathematicians in transition toward the professoriate. Individuals must give close attention to their preparations if there is to be a safe crossing.

[1] *You're the Professor, What Next? Ideas and Resources for Preparing College Teachers.* A project of the Committee of Preparation for College Teaching, AMS-MAA-SIAM, The Mathematical Association of America/Notes Number 35, Bettye Anne Case, Editor, 1994. ISBN 0-88385-091-5.]