TEACHING STATEMENT

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During the last five years I have been very active in teaching, first as a teaching assistant at Bar-Ilan University and then as a lecturer at Michigan State University.

I have deliberately chosen to teach as many different courses as possible, which ranged from Abstract Algebra to Introduction to Statistics and Ordinary Differential Equations, for I believe it is important for a mathematician to teach courses which are outside his or her field of expertise and to keep his or her knowledge as broad as possible. It is also good from a scientific point of view, for quite often problems in one area are eventually solved by applying techniques from other areas.

It is important to be able to explain mathematics to students who are not particularly strong in math. I had a positive experience helping a student in economics who had failed the mathematics course several times, and after six intense meetings he attended the exam and passed with a grade of 95 out of 100. I also had a good experience teaching math for biologists, and once volunteering to help a student at Holon Institute of Technology who spent a considerable part of the semester as a reservist in the army and needed some help to catch up with the material of the Linear Algebra course.

During my time at Bar-Ilan, I was active in helping Erez Sheiner construct and maintain the (Hebrew) website http://www.math-wiki.com/ which is still serving today as a platform for lecturers and teaching assistants to upload learning material, home-work sets and announcements and for students to ask questions about the material (which anybody - a lecturer or a student - can answer). My lecture notes (in Hebrew) for the Linear Algebra recitations that I uploaded are still being used by teaching assistants at Bar-Ilan University and are available online.

Since my arrival in the United States, I have noticed certain differences between teaching here and teaching in Israel. Of course, in both countries they emphasize the positive attitude and accessibility
to students, preparedness in class and high level of teaching. The main
difference is in the schedule. In Israel it is common to have one two-
and-a-half-hours lecture a week whereas in the US it is more common
to have three meetings of fifty minutes each. The difference is a result
of different teaching philosophies. In Israel they value the continuity of
the logical arguments, and therefore they prefer to have long talks that
cover a lot of material and usually end with big theorems. In the US
they value most highly the students’ ability to follow the class, and by
having more shorter talks they minimize the chance the students lose
attention or get lost during class. I have yet to decide which approach
is better. I wish we could merge the two systems, to have shorter talks
in the beginning when new ideas and basic concepts are introduced,
and have longer talks later on when we reach the big theorems.

I do value the continuity of teaching. In order to achieve that, despite
having only 50 minutes in a talk, I recall the basic notions and results
needed in order to understand the class, and at the end of the class
state the main things we are going to discuss the following meeting.

In terms of teaching style, it is inevitable that in mathematics the
lecturer gets to talk most of the time and the students have to sit
and listen. However, I do try to get the students involved, by asking
them questions. It is quite effective. It also helps them build up their
confidence - there were several students who at first were afraid to ask
questions or to answer mine, and after a few classes that they saw no
harm is done by giving a wrong answer to my question, they started
taking an active part in the discussion, and their performance in the
home-work assignments and in the exams improved as well.

As a lecturer I believe in the coherency of the course as a whole.
Therefore I keep in touch with my teaching assistants. I update them
on a weekly basis what I covered in class and what I expect them
to do. I also write the quizzes and make sure that there is uniform
grading in all the sections I teach. In the course Abstract Algebra I
did not have teaching assistants. I could ask for a grader, but since
it was a small class of twenty-three students, I preferred to grade the
home assignments myself so that I keep track with the progress of the
different students. It enabled me to get to know the difficulties different
students were facing and made it easier for me to explain things to them
later on. I have always been available to my students, both in my office
(anytime I am there, not only during office hours) and by email.
I do think it is useful to get acquainted with your students to some extent if you can, especially if it is a small class. For instance, calling them by their names is something which builds trust and makes them feel you are more approachable, and that they can feel free to turn to you with questions without embarrassing themselves. I also ask them explicitly to call me by my given name. In class, I might address a certain question to a certain student, if I think that student needs this kind of encouragement. I would not do that though to a student who might not react well.

I believe teaching is an integral part of being a scientist. I hope to have the opportunity to continue teaching in the future.