

# Notices

of the American Mathematical Society

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## ABOUT THE COVER

The color photograph shows the repelling set for an expanding map  $F$  from the euclidean plane into itself.  $F$  is defined by dividing the plane into two components by means of a straight line and specifying that  $F$  is a certain affine map on one component and a second affine map on the other component. (continued on page 536)

## The Way Things Ought to Be

This essay is about how mathematicians see themselves and about how others see us. And it is about the difference between these two perceptions. At the end, I will remark about some consequences that these differing world views may have.

A significant part of the academic/scientific world is controlled by chemists. This is so because, in order to survive in "big science", a chemist must be an organization person. If he cannot direct a lab and work with a group of twenty or more people, then he will probably not be a successful chemist. Thus chemists have ample qualifications to become deans, and often they do. What are some of the implications of this observation?

When the dean wants to speak to one of his best chemists, he knows where to look. A hard-working chemist shows up at her lab at 8:00 a.m. and does not leave until 6:00 p.m.—except for frequent breaks to go to the business office and work on grant proposals. The dean *will* find her, and in the expected place. When the dean wants to speak to one of his best mathematicians, he might analogously expect that mathematician to be sitting at her desk or programming her computer. But there's the rub! In point of fact, the mathematician is likely as not taking a walk in the woods, or riding her in-line skates or chewing the rag in the coffee room or playing a game of Go. The dean does not understand this. It looks as though the mathematician is playing.

Now let us segue to a slightly larger picture. The mayor of Gotham City is looking for the butcher. Where will he look? Most likely, a hard-working butcher is found in his shop—cutting meat or cleaning his butcher block or sharpening his knives. Just the same if the mayor is looking for the baker or the candlestick maker. But what if the mayor wants to find the professor of English? The mayor probably thinks of a professor as a teacher and will look in the classroom. More fool he. The professor only has six hours per week of classroom duties! Measured by time spent, this professor is more likely to be taking a run or having lunch with a publisher or debating metaphysical epistemology with a colleague or participating in an e-mail discussion group. In other words, it looks as though the professor is playing.

When Jean Jacques Rousseau developed his Social Contract, he was not thinking about modern tenured professors. He was thinking about farmers and clerks and merchants. Yet that Social Contract is still a yardstick by which the government and the public judge the way that the world works. Professors are not easily measured by that norm, and mathematicians are even more bohemian than the average professor. I usually work 80 hours per week, and everyone in my acquaintance knows it, yet those outside of academics simply cannot understand what it is that I do with my time. I am sure that most of us suffer the same social isolation.

Like it or not, this is the life we chose for ourselves, and we all must endeavor to grow and flourish where we are planted. But it is the 1990s, and many universities are downsizing, realigning, and reinventing themselves. In the process, the world to which we have become accustomed is being rattled. As an example, the administration at the University of Rochester has proposed to close the graduate program in mathematics. The university administrator who made the decision is an attorney who specializes in bankruptcy law. He is *not* an expert in Gelfand-Fuks cohomology. Think about the points made in the preceding paragraphs as you consider how this administrator may have come to his decision—and whom he was consulting as he implemented the decision.

It behooves us to become aware of how we are perceived and how we are judged by those who are outside our ranks. In a world where hard decisions are being made, we are often the ones acted upon rather than the prime movers. Generally speaking, we are not organization people; instead, we are, by training, the misfits. We can best help ourselves by learning to communicate and by learning to fulfill our roles as educators and as the keepers of the collective learning of mankind. *Let me enunciate my position plainly:* We should by no means abandon or diminish that which we do so well (mathematics). But we must learn to help others understand what it is and why it must be done.

—Steven Krantz