Experiences of AMS-AAAS Media Fellows

Liz Veomett and Ben Stein

Since 1975 the American Association for the Advancement of Science has sponsored the Mass Media Science and Engineering Fellows Program, which places science and engineering students in summer media internships. Last year was the first time the AMS participated, and two mathematics students had internships: Liz Veomett, a first-year student at Oregon State University, and Ben Stein, a third-year student at the University of Massachusetts–Amherst spent their summers working at *Business Week* and National Geographic Television respectively. Science and engineeering students, including undergraduate majors, graduate students, and postdocs, are eligible for the program. The application deadline is January 15, 1998.

Those interested in informally discussing the program can contact Samuel M. Rankin III, at the AMS Washington office, 202-588-1100, `smr@ams.org`.

Interested students may get more information by calling 202-326-6760, using the e-mail address `aking@aaas.org`, consulting the Web address `http://www.nextwave.org/ehr/3_4_0.html`, or contacting the Mass Media Science and Engineering Fellows Program, AAAS, 1200 New York Avenue, NW, Washington, DC 20005.

—*Susan Landau*

Liz Veomett

This summer I became a science journalist. I spent ten weeks writing science articles for *Business Week*. I wrote numerous short news pieces and two substantial ones. I covered topics ranging from intravascular ultrasound to the use of image algebra for interpreting pictures. I interviewed scientists both from academia and from industry. By the end of the summer, public relations professionals were calling me up, asking me to write about their clients. And my work was being published in a prominent magazine.

At first I was surprised that a national publication would be interested in the writing of a math graduate student. I worried about being deluged with tasks such as setting up interviews while someone more qualified wrote the stories. But from the start I was allowed to take charge of my own articles, from suggesting the topics to approving the editing. Editors and producers recognize that the quality of a person's work is more important than the number of journalism classes she has taken. Scientists must be good at gathering, interpreting, and organizing information. And journalists use these same skills daily.

When my undergraduate advisor suggested that I apply for the AAAS fellowship, I had never given much thought to science journalism. I assumed *Business Week* science consisted of such subjects as a thorough analysis of the management strategies at Lucent Technologies or frequent updates on the speed of the latest Pentium processor, but not hard science. I did not think business professionals would care about the details of scientific advancement. Why would it be included in their magazine?

Of course science is as vibrant and important in the magazine as in the rest of this world. I had lectured freshman precalculus students about the value and variety of mathematics in our world. However, when it came to recognizing math in the media, I was as ignorant as they were.

Although journalists frequently cover scientific topics, many journalism majors avoided science and math as students. As a result, they have little practice thinking scientifically, are unfamiliar with scientific jargon, and have little background knowledge to draw upon. So it can be difficult for them to spot errors in their articles. Scientists, particularly mathematicians, are very concerned with getting the details right. Though I was not an expert in the subjects about which I wrote, I knew when and how to ask questions. I was not intimidated by technicalities and had experience from which to approach the stories. Scientists insist that information be presented accurately; several times over the summer I made sure that superlatives like "never" or "best possible" were taken out of edited versions of my stories. Furthermore, scientists can sniff out stories that other journalists may overlook. I received the same packet of press releases as the rest of the science staff at *Business Week*, but often I suggested stories that the staff had overlooked. The resulting articles would not have been written without my input.

Now why would a mathematics graduate student want to spend her summer writing science articles for a business magazine? Wouldn't she benefit more from teaching or working on research? I had the opportunity to rediscover the wonder of science and learn about research I never realized existed. (Did you know sound waves can actually be used for refrigeration? And pellets of yeast and sugar may ward off corn rootworm as effectively as toxic pesticides?) Focusing on narrow research topics had caused me to lose sight of the big picture. I returned to grad school with a better perspective.

I became a better teacher. Science writing for the general public is not so different from teaching the typical college freshman (or any student). I had to organize information, make analogies, and ensure that I was conveying both the correct idea and its importance.

I also learned the value of good public relations. The same schools and research institutions were mentioned in the magazine time and again throughout the summer. These places were not the only ones doing good science, but they had a public relations staff that wrote effective press releases that were distributed widely and frequently. Their researchers made time to talk to the press. Their reputations, and that of their institutions, improved in the eyes of the public.

The mathematical community benefits from supporting science writing programs such as the one I participated in. I think every mathematician has at some point read a newspaper article that presented wrong or misleading mathematical principles. Sending people with a good understanding of science to work with journalists results in better stories. Because of a perception that the general public does not like math, journalists hide it under words like "technology" or "better method". The People don't realize that new mathematical principles are actually discovered and applied today. Inclusion of scientists in the media chain can change this—for the benefit of both science and society. I've gained a new role in the media and feel very privileged that I held an AAAS Media Fellowship last summer.

Ben Stein

I'm a graduate student in mathematical statistics at the University of Massachusetts–Amherst. Last spring I was cloistered in my office at UMass preparing for comprehensive exams, but only days later I was interning in the Natural History Unit of National Geographic Television on an AAAS Science and Engineering Mass Media Fellowship.

My job was to bridge the gap between science and the science that is portrayed in the media. But the types of documentaries being produced were a far cry from those fields in which I had any expertise—the focus was on seals and insects, not point estimates and hypothesis tests. To contribute I had to open my mind and take on some projects about which I knew very little at first.

Oddly enough, one of my earliest duties was to address a mathematical question: if we have video of an animal swimming underwater, can we figure out its speed? And if so, can we do it if the camera is attached to the animal's back? This question was in reference to the so-called Crittercam, which my mentor was using to get up-close images of marine animals without the disturbances of a human photographer. As it turned out, all the theory I needed came from trigonometry and elementary optics. While the model might have been simplistic, it still gave reasonable estimates on the velocities, so I was satisfied with my first dabble into the world of mathematical modelling.

This effort wasn't entirely what I came to National Geographic TV for. One project immediately caught my eye. My mentor was saddled with the makings of a documentary on wolves in the U.S. I found the project a mess. There were hours of footage of varying quality. My job was to write a 1,000-word treatment that told an interesting, cohesive story; my constraint was to use only the footage that already existed.

The most compelling footage was the most disturbing. Hunting Alaskan wolves is legal, and several hundred are killed each year. One Alaskan wolf researcher wants to curtail trapping, which can lead to a long and lingering death and is the way most wolves are hunted. This researcher sent hours of his own footage to National Geographic.

I was quite moved by his films. But I realized that I couldn't let this footage control my understanding of the issue. Since the wolf population has remained stable from year to year, most established and well-respected wolf biologists see no danger in the Alaskan hunting policies. What could have been a "how-sad-it-is-that-hunters-are-killing-wolves" documentary turned into a multifaceted story that featured two wolf researchers: a maverick Alaskan who wants us to rethink wolf control policy and a well-respected wolf biologist who does not see Alaskan wolf control as a concern.

While not conscious of it at the time, my approach to the material was the same as any good scientist's. As mathematicians, we are trained to think analytically and not to accept statements without proof. I applied the same methodology and ended up with an interesting story about wolves.

As I looked more deeply into the arguments of my two featured researchers, I found that the disagreement became a statistical one. The more conservative argument hinged on the fact that wolf populations have remained stable, thus providing quantitative evidence that wolf hunting is doing no harm. But my iconoclast questioned this, asking if we should look past the numbers and, look instead, at the long-term changes in behavior and genetics that hunting could bring about. After all, wolves have been around for millions of years as a dominant species in the food chain. Now that they are hunted like any other prey, how will they be impacted? This question is more qualitative and raises the issue of whether a basic statistical analysis is even relevant.

Since this project needed so much work, it took up most of my ten weeks; nevertheless, my product seemed small in comparison to my effort. I put the story together, but the documentary still needed a writer and an editor to finish production. How frustrating it was for me to leave the documentary in midstream!

These main projects were challenging, and there were many other interesting problems during the summer. Sometimes my abilities were challenged at unexpected times. Working with nonmathematicians, I found it very difficult to answer a question as simple as "What do you do at UMass?" I have just started my research in imaging, and I've never had to explain it to an educated mathematical novice before. Some of the people who asked me about it were supervising my work; if I could articulate what I studied, I would give them a better idea of what I could do.

This ability to communicate will be of prime importance to me as I get older. Mathematicians need to know how to explain the importance of research to a lawmaker, university president, or industry leader. But I know that my skills will be constantly challenged as my research becomes more and more complex. I think that those who allow themselves to leave the comforts of graduate school and enter into this mysterious world of the media will benefit from the change in environment. While the summer was frustrating at times, I always found the work fascinating and applied my skills with satisfying results.