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What's in a Name?

FROM THE SIAM PRESIDENT

By Nick Trefethen

When I was a kid, my father used to tell me he had been one of the founders of the National Science Foundation. I wish I had paid more attention.

NSF is facing challenges these days, as are its counterparts in other countries. Governments know we have benefitted greatly from science and technology, but it is a time of economic upheaval, and cuts must be made. Do we really need all those physicists? As I write, the headlines are asking "Was Einstein wrong?" Physicists are excited about puzzles in the science of neutrinos, and they are equally excited about what this might do for their field. If Einstein turns out to be wrong, what a boost that will bring!

And what about all those mathematicians? Yes, of course, half of our technological world is ultimately built on mathematics, but savings must be found somewhere. Couldn't we make do with a little less mathematical research for a few years, while the economy turns around?

My own life touches both sides of the Atlantic, both the USA, the land of my up-bringing and early career, and the UK, where I moved in 1997. The funding agencies in both countries are going through discussions that are upsetting people. In the UK, the Engineering and Physical Sciences Research Council announced last summer that it would award no fellowships at all in mathematics except in the fields of statistics and applied probability. EPSRC calls this "Shaping Capability" as part of its "Delivery Plan," but quite a few mathematicians call it by other names. My own feeling is that it is odd that mathematics funding in EPSRC is run not by mathematicians but by people from other fields, such as chemistry, on the theory that this brings greater objectivity. When we try to protest something like this cancellation of fellowships, we have a strange sense that there is nobody to talk to. In fact, 25 of us recently sent a letter of protest to the prime minister.

Back in the USA, the Division of Math-ematical Sciences at NSF relies on mathematical scientists in its decision-making, a policy I applaud. But a question on the table this autumn is, should the name of the division be changed? The current head of DMS, an eminent statistician, favors the idea of changing the name to DMSS, the Division of Mathematical and Statistical Sciences.

Just names, right? Well, as you can imagine, some people have opinions on this. As for SIAM, we have healthy ties to statistics, biology, physics, engineering, computer science, and many other areas. We applaud inclusivity, we thrive on it, and have long celebrated the breadth and diversity of the mathematical sciences. So we are nervous about the implications of the proposed name change.

It was 1951, and NSF had just been founded in the wake of the successes of American science and engineering in the war. As its first director, President Truman appointed Alan Waterman, who had been running the Office of Naval Research. My father was Waterman's personal assistant at ONR, and when Waterman moved to the new foundation, he brought my father with him. For its first year of operation, my father was executive secretary to the National Science Board and took the minutes of its meetings. I have his handwritten notes in a box somewhere. NSF's budget for that first year was $225,000, so I figure my father took home as salary in fiscal year 1951 around 3% of the entire NSF budget.

My father often talked of how the new organization grew and changed in those early years. What was the purpose of an NSF grant? Why, to enable somebody to do something, of course, to build an apparatus and run an experiment! Money would be granted in response to clear and present needs. There was none of this notion that everybody must try to find two months of summer salary support, or that you need a lot of funding on your resume to keep your career on track. That came later. My father was an idealist, and he never liked it.

We were flexible in those early days, he told me, trying to handle each proposal intelligently on its merits. But you know, he said, some special case would lead to a slight irregularity, and in response, we would introduce a new rule to tighten up procedures. Then another special case, and another new rule. Each rule made sense on its own, but for my father, after a couple of years, NSF was becoming a bureaucracy and a big business, and the magic was gone. Today the U.S. runs the greatest science and engineering research enterprise the world has ever known, and the NSF budget is $7 billion.