EDITORIAL

The communities of Science

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My father was a mathematician. When I was a teenager, I talked to him about careers. I love math, even fairly esoteric stuff. He surprised me by saying, "Math is something to pursue only if you cannot imagine doing anything else. You can follow other careers and still do math, but pure math can be very isolating; only a few people in the world are likely to really understand what you are working on." I was surprised that he was discouraging me from his career path. But wait, what? He was also implying that science was a social activity in an essential way.

I took his advice and pursued chemistry, driven in part by my interest in geometry and three-dimensional structures. Over my career, I have moved from chemistry to structural biology and crystallography, to synthetic inorganic chemistry, back to structural biology, to biophysics, to biochemistry, to informatics, to computational biology, and to personalized medicine. Along the way, I also have had great opportunities to lead scientific organizations. I helped build a department of biophysics and directed the most fundamental science-focused institute at the U.S. National Institutes of Health (NIH), with programs spanning the basic biomedical and related sciences, key clinical areas such as anesthesiology, and research training. With regard to the clinical areas, my expertise has been greatly bolstered by "home schooling" in clinical research by my wife, Wendie Berg, an accomplished breast imaging researcher and clinician who has run several major clinical trials.

While at NIH, I had many intense discussions with a colleague about the social science research relevant to developing inclusive training programs. He would frequently challenge me with results that did not fit my intuition. He had the habit of adding aphorisms to his email signature block, and one of my favorites was, "Don't believe everything you think." This directive nicely captures the power of the scientific method. If you have an idea, you can collect data and analyze them to determine whether your observations are consistent with your hypothesis or refute it. I, like most practicing scientists, have had my eyes opened when an attractive hypothesis was demolished by an incisive experiment.

Returning to my father's comment, science is, indeed, a profoundly social activity. Many hypotheses come not from single individuals but from groups with individuals at different career stages and with diverse interests, discussing previous results and ideas. Small or large teams of researchers perform many experiments. Other scientists then review the results, critically examining the experiments, analyses, and interpretation. All of this is conducted in a highly competitive environment where personal satisfaction, funding, recognition, and career stability often depend on being the "first" to make an advance, creating tension with collaborative efforts.

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It is daunting to be added to the list of incredibly impressive individuals who have previously served as editor-in-chief. Most recently, Marcia McNutt has led the *Science* journals admirably over her relatively short tenure. She is leaving only because her accomplishments led to another amazing opportunity, and the scientific community is fortunate to have her as president of the U.S. National Academy of Sciences.

The position of the editor-in-chief of *Science* and the other journals of the *Science* family presents both a tremendous opportunity and an intimidating responsibility. Science is a key tool in addressing the pressing problems facing humankind and our planet. To make progress, scientists must engage with the public, policy-makers, and many other groups. Scientists must communicate their results fairly and listen to the perspectives of others. *Science* serves as a premier journal for presenting the most exciting scientific results from a wide range of disciplines and is a key forum for relevant news and discussions of policy. I look forward to working with the communities of *Science*.

– Jeremy Berg

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