



Bruce Alberts is Editor-in-Chief of *Science*.

Designing Scientific Meetings

THIS ISSUE OF *SCIENCE* CONTAINS ANNOUNCEMENTS FOR MORE THAN 100 DIFFERENT GORDON Research Conferences, on topics that range from atomic physics to developmental biology. The brainchild of Neil Gordon of Johns Hopkins University, these week-long meetings are designed to promote intimate, informal discussions of frontier science. Often confined to fewer than 125 attendees, they have traditionally been held in remote places with minimal distractions. Beginning in the early 1960s, I attended the summer Nucleic Acids Gordon Conference in rural New Hampshire, sharing austere dorm facilities in a private boys' school with randomly assigned roommates. As a beginning scientist, I found the question period after each talk especially fascinating, providing valuable insights into the personalities and ways of thinking of many senior scientists whom I had not encountered previously. Back then, there were no cellphones and no Internet, and all of the speakers seemed to stay for the entire week. During the long, session-free afternoons, graduate students mingled freely with professors. Many lifelong friendships were begun, and—as Gordon intended—new scientific collaborations began. Leap forward to today, and every scientist can gain immediate access to a vast store of scientific thought and to millions of other scientists via the Internet. Why, nevertheless, do in-person scientific meetings remain so valuable for a life in science?

Part of the answer is that science works best when there is a deep mutual trust and understanding between the collaborators, which is hard to develop from a distance. But most important is the critical role that face-to-face scientific meetings play in stimulating a random collision of ideas and approaches. The best new science occurs when someone combines the knowledge gained by other scientists in non-obvious ways to create a new understanding of how the world works. A successful scientist needs to deeply believe, whatever the problem being tackled, that there is always a better way to approach that problem than the path currently being taken. The scientist is then constantly on the alert for new paths to take in his or her work, which is essential for making breakthroughs. Thus, as much as possible, scientific meetings should be designed to expose the attendees to ways of thinking and techniques that are different from the ones that they already know.

There is a danger of scientific meetings becoming overly specialized as the amount of scientific knowledge expands. There is no longer a Gordon Conference called Nucleic Acids; understandably, it was replaced long ago by a whole set of meetings on related subspecialties. But I would argue that one should try to avoid producing a scientific meeting where all of the attendees use the same approaches and read the same scientific literature. In fact, the most stimulating scientific meetings that I have attended have taken the extreme opposite approach, intentionally mixing scientists with very different backgrounds and interests, convening them to produce a set of new ideas for attacking a challenging scientific puzzle.

One example of such a meeting was an intensive 2-day 1995 workshop on schizophrenia that involved 18 carefully selected scientists, most of whom knew almost nothing about the disease. The meeting began with a few invited experts presenting what was known about schizophrenia to the non-experts, answering their many questions in informal discussions around a large square table. All of the remaining time was spent in brainstorming about possible new approaches to understanding the cellular basis for the disease and discovering better treatments. In the process, we all learned a great deal of new science, and we produced a report with valuable new ideas.* This simply could not have happened via e-mail or Skype. A second, larger example is the Keck Futures Initiative, convened annually by the U.S. National Academies.† Could more meetings of this type play a powerful role in accelerating the scientific innovation needed to address the world's many new challenges?

— Bruce Alberts

10.1126/science.1236324

*S. H. Barondes et al., *Proc. Natl. Acad. Sci. U.S.A.* **94**, 1612 (1997). †See www.keckfutures.org/about/index.html.



ERRATUM

Post date 15 March 2013

Editorial: “Designing scientific meetings” by B. Alberts (15 February, p. 737). The first paragraph states that Gordon Research Conferences are often confined to fewer than 125 attendees. The conferences are limited to 200 attendees. The statement “There is no longer a Gordon Conference called Nucleic Acids” is incorrect. The Nucleic Acid Gordon Research Conference is ongoing and scheduled to take place 2 to 7 June 2013 at the University of New England in Biddeford, Maine.