about 4 days of added survival per woman, says Berry, a longtime skeptic. "We found a lack of credibility" in many of the studies that claimed to find such benefits for women under age 50, Berry added.

The panel's concerns were written up in *The New York Times*, raising the volume on a debate that has raged for at least 5 years, ever since a "consensus conference" in 1997 sponsored by the National Institutes of Health ruled that the evidence did not support routine mammography for younger women. That ruling brought down the wrath of the U.S. Senate, which issued a resolution favoring mammography by a vote of 98 to 0. Observers say that Thompson's very public endorsement of mammography, including the release of the task force's report on an accelerated scale, was intended to blunt this latest attack.

Larry Norton, current president of the American Society of Clinical Oncology and a researcher at Memorial Sloan-Kettering Cancer Center in New York City, rejects the Gøtzsche-Olsen analysis, dismissing it as a scholarly debate about "30-year-old studies and 30-year-old therapies." But he agrees that the controversy is far from over. Norton says that patients are getting far better diagnosis and treatment now and that mammography can produce a 25% to 30% reduction in mortality. The whole topic, he says, deserves yet another, more impartial, review.

–ELIOT MARSHALL

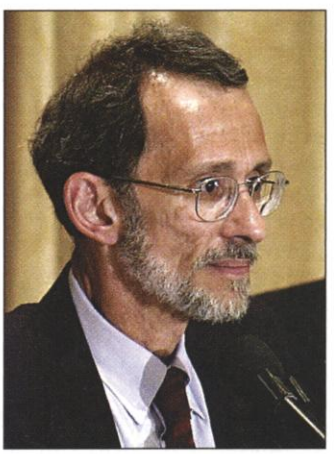
DATA SHARING

Clear-Cut Publication Rules Prove Elusive

A select group of scientists and journal editors met last week at the National Academy of Sciences in Washington, D.C., to chisel out some commandments for their peers on the ethics of publishing. Organizers hoped that the 25 February session would produce clear and simple rules compelling scientists to share data. But the participants clashed on what it means to insist that an author make "freely available" the data backing a published claim—reviving an argument that wracked the human genome community a year ago. After drafting a few broad "thou shalt" phrases, participants failed to agree on how these rules should be enforced. The leader of the session—Thomas Cech, president of the Howard Hughes Medical Institute in Chevy Chase, Maryland—promised that an academy panel will fill in the details later.

Prepping the audience, Eric Lander of the Whitehead Genome Center at the Massachusetts Institute of Technology began the day with a talk on historical context. The rules being considered by this meeting, he said, were established by the Royal Society in London in 1665 when it began publishing its scientific proceedings. The society offered a simple bargain, according to Lander: Anyone claiming to be an inventor could get the society's imprimatur—as long as the claimant published a detailed description of the discovery. Before this, scientists had often protected their work through concealment, Lander said; but, thanks to the society's bargain, they could achieve honor through disclosure. Lander proposed an updated set of rules, a "uniform policy on access to data and materials" (UPADAM), which he pronounced "up 'n' at 'em." The basic idea is that if you choose to publish a claim, you must release all the "integral data" supporting it, as determined by editors and peer reviewers.

Lander acknowledged a personal stake in this cause. As the principal author of the draft version of the human genome sequence published in *Nature* last year, he strongly disapproves of the way a commercial group—Celera Genomics Inc. in Rockville, Maryland—was allowed to publish a rival paper at the same time in *Science* (16 February 2001, p. 1304). Unlike Lander's group, Celera did not release supporting data through a government-funded repository, GenBank. Instead, Celera allowed readers to view data at a Web site the company controls. Lander said *Science* made "a mistake" and did "a disservice" in agreeing to this form of data release. He asked the academy group to reject what he called "partial data release." Some academic researchers, including Marc Kirschner, cell biology chair at Harvard Medical School in Boston, endorsed this view.



One code? Lander (*right*) proposed a uniform policy; Patrinos (*above*) argued for flexibility.

But several others disagreed. The most outspoken dissenter was Ari Patrinos, director of biological and environmental research at the Department of Energy. DOE pioneered the Human Genome Project, although the bulk of support has come from the U.S. National Human Genome Research Institute (NHGRI) and the Wellcome Trust, a British charity. Patrinos, describing himself as "normally an optimist," said, "I am extremely pessimistic about the outcome of this discussion." It would be "a mistake," he argued, to adopt a simple rule forcing authors to choose between releasing control of all their data at publication or not publishing. He thinks that enforcing such a rule would silence some would-be authors in the private sector.

Patrinos urged people to "recognize the importance of the emerging biotechnology industry" and avoid adopting a set of "feel-good" data-release policies that suit mainly academics. This could cut the academic world off from some of the most exciting research being done now, he said. Patrinos argued instead for a "trench-by-trench" campaign, accommodating the rules of publishing to the circumstances of the author. Noting that private investment in research is increasing, Patrinos also warned that agencies such as DOE and NHGRI may have less clout than before: "Our hands may be more tied than in the past," making it difficult "to enforce the rules you would like us to enforce."

Francis Collins, director of NHGRI, found these comments "puzzling." He said that recently there has been "a blurring" of the rules on data release. "It is hard for me to see how we can step away from" an effort to "nail down" the basic principles and decide how they should be enforced, Collins said. And he argued that Patrinos's trench-by-trench approach would lead to a series of exceptions.

Although the working session did not reach a consensus on who should be the primary enforcer of standards, Cech summed up a few principles he hoped all could agree on. The draft summary states that authors have a responsibility to "undertake reasonable efforts to make data and materials integral to a publication available in a manner that enables replication and further science." Specifically, if authors claim to have created a large database, "the entire database must be available," and in every case, they must make available "enough [data] to support the paper's conclusion."

Cech said he and his panel aim to wrap up a report on this project within "a few months." Meanwhile, he said, the National Institutes of Health is planning to release its own updated set of data release guidelines—along with new grant support to help defray the cost of sharing materials—possibly as soon as next week.

–ELIOT MARSHALL

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