board—to revise the grant award. The board called for a two-phase approach: NIH and Maryland first will study the feasibility of running a successful conference on biology, behavior, and crime. Then, within 90 days, they must concur on a plan for a conference. The Center for Human Genome Research retains the right of veto.

As this feasibility study gets started, NIH is preparing to hear from another panel examining NIH-funded violence research. This one—requested by former NIH director Bernadine Healy—had two major assignments: to determine whether any projects in NIH's portfolio were so risky or questionable that they should be dropped, and to make recommendations for future research. The panel met once in June (*Science*, 11 June, p. 1584) and again on 22-24 September.

The second session, cochaired by Sandy Chamblee of the NIH director's office and Thomas Murray, director of the Center for Biomedical Ethics at the Case Western Reserve University School of Medicine, essentially gave the current NIH portfolio on violence research a clean bill of health. The 29-member committee held a closed meeting on 23 September to examine NIH's current projects. Members were instructed not to comment on particulars, but panel member Kenneth Tardiff, professor of psychiatry at the Cornell University Medical College, announced in open session that everything he'd seen was "well within the scientific bounds" of acceptable practice. The "only basis" for challenge, Tardiff said, would be to question the "entire basis of modern medicine and mental health research"—which he did not intend to do. Nor did any other panel member.

At this writing, according to an NIH official who did not wish to speak for attribution, only a few clinical studies of violence and aggression (out of 284) remain in limbo as investigators check for possible violations of the ethics code. But most of the projects have already passed muster.

Committee members also proposed ambitious goals for future research at NIH:

- Create a new, high-level monitoring group to ensure that violence research does not harm individuals or sensitive communities, especially minority communities.
- Seek at least a doubling of funds for research on violence, particularly for "preventive intervention" studies and projects that assist victims.
- Broaden NIH's portfolio to include more social research and studies that examine behavior over an entire life span.
- Increase training programs on violence research, especially those designed to encourage minority scientists.

These proposals will be incorporated into a draft text that will go out for review by the full committee next year.

–Eliot Marshall

AMERICAN PHYSICAL SOCIETY

Young Scientists' Network Shakes Up the Establishment

DARROW MONTGOMERY

Networker. Young Scientists' Network founder and APS board member-elect Kevin Aylesworth.

Members of the Young Scientists' Network (YSN) are used to being outsiders. This loose confederation of 2600 or so graduate and postdoctoral students who communicate via the Internet computer network has been taking the U.S. physics community to task for squeezing many of them out of jobs. The physics establishment, they say, is to blame for training record numbers of Ph.D.s, just when the job market for physicists is drying up. But now the YSN is about to join the establishment. *Science* has learned that in an election for four of the 15 at-large seats on the governing board of the American Physical Society (APS), the leading voice of U.S. physicists, two YSN candidates who clawed their way onto the ballot through an electronic mail-based petition drive managed to win, defeating candidates the APS itself had nominated.

The APS had planned to announce the results in November, after they have been ratified by an elections committee. But already the organization's brass is interpreting the upset as a strong signal about the depth of unhappiness among young physicists. "This election certainly sends a message to the council," says Burton Richter, director of the Stanford Linear Accelerator Center and president-elect of the APS. "It's an indication that a big part of the membership wants more emphasis on the employment problem." Now that two of their representatives will be sitting on the council, YSN members—who have mostly vented their steam over electronic bulletin boards—will be in a position to demand action to reduce the number of graduate students in physics.

Successful campaigner. Zachary Levine.

The two YSN winners, who say they are somewhat surprised at their success, make no bones about being one-issue candidates. "We're concerned that there seem to be no jobs for young scientists, and there hasn't been much recognition of this fact in high places," says Zachary Levine, who launched the YSN campaign. Or, as YSN founder and fellow winner Kevin Aylesworth ingenuously puts it: "We must have been judged pretty much only on the employment question, because we haven't demonstrated knowledge about any other issues." Their knowledge of the job shortage problem, though, is intimate: Aylesworth, who got his Ph.D. in 1989 from the University of Nebraska, supports himself doing legal research and working on a book, while continuing to send out resumes for physics research jobs. Levine, a 1983 University of Pennsylvania Ph.D., spent 4 years at AT&T developing electronic test equipment before landing a non-tenure-track physics "research specialist" position at Ohio State University.

The 44,000-member APS can't be accused of ignoring the young physicists' plight entirely. It has undertaken surveys of graduating physics students to document the scope of the problem and sponsored university job-finding workshops that emphasize opportunities outside the traditional markets of academia and government and industry laboratories. "The APS as a whole is very sympathetic with the job problem for young Ph.D.s," says Brian Schwartz, a Brooklyn College physics professor and associate executive secretary of the APS. "We can't do much about the market, but we have to at least take some responsibility for the supply side."

Still, not all APS leaders are convinced there is a glut of physics Ph.D.s to begin with. "We need more Ph.D.s in the physical sciences, not fewer, because it's technological prowess that's going to keep this country afloat," says Fermilab's Michael Turner, whose 4-year term on the APS council ends

in December. "We tend to overreact in this country, and try to turn off the spigot as soon as there's a problem." And even those who agree that there is an oversupply may doubt that the APS can—or should—do anything about it. "That there is a problem isn't challenged by anybody," says Donald Langenberg, APS president and chancellor of the University of Maryland system. "But that there is something the APS can do to solve the problem isn't clear."

That's where the election results could strike some sparks. YSN members have been demanding action, and the group's new voices in the APS hierarchy may try to push the idea of shrinking the physics graduate student pool further than most of the rest of the APS leadership is willing to go. For example, many YSN members have loudly complained about the number of physics Ph.D.s going to foreign citizens, which has grown from 200 to 600 over the past decade, while the number of physics Ph.D.s awarded to U.S. citizens and foreign students holding permanent visas has held steady at about 800. The YSN recently lobbied the Department of Labor to drop proposed plans to relax the restrictions against hiring foreign Ph.D.s. "Granting Ph.D.s to foreign students is fine," says Aylesworth. "But most of the students who come here have promised to return home after their degrees, and it doesn't always happen that way."

YSN members have also advocated supplying prospective graduate students with information packets detailing the gloomy job prospects, and pressuring funding agencies to divert resources away from graduate students and towards postdoctoral researchers looking for a job. "It doesn't cost much to train a physicist," says Levine. "Supporting a working physicist takes a lot more money."

But many other physicists are leery of the idea of squeezing funds, or of any other attempts to actively discourage students or force universities to reduce the number of physics graduate students. "It doesn't make sense for graduate departments to constrict the number of students," says Fermilab's Leon Lederman. "If the student knows the situation, it's caveat emptor." Warns David Balamuth, chairman of physics at the University of Pennsylvania and an APS fellow: "Putting more money into postdocs and less into graduate students could drive things the wrong way, and we might end up with a shortage in 15 years." As for the foreign student issue, even physicists who agree it's a problem shy away from the notion of placing new limits on foreigners' access to degrees or jobs. "I can't seriously imagine that's good public policy, or even morally defensible," says Langenberg.

Aylesworth and Levine tend to dismiss such criticism. "Our ideas are annoying to those people in the power structure whose job it is to produce more Ph.D.s," insists Levine. But he and Aylesworth also say they recognize there may be limits to what they can reasonably expect the APS to do; both are now downplaying the need for action on foreign students, for example, and they say that over the past year, the APS has responded to many of their complaints. "I could be the first elected official who kept his campaign promises before taking office," says Aylesworth.

For now, at least, the YSN firebrands seem prepared to take office at the end of the year in a spirit of compromise. And the APS leadership appears ready to welcome the new faces. "We need a few rabble-rousers in the APS," says Turner.

–David H. Freedman

David H. Freedman is a free-lance science writer in Brookline, Massachusetts.

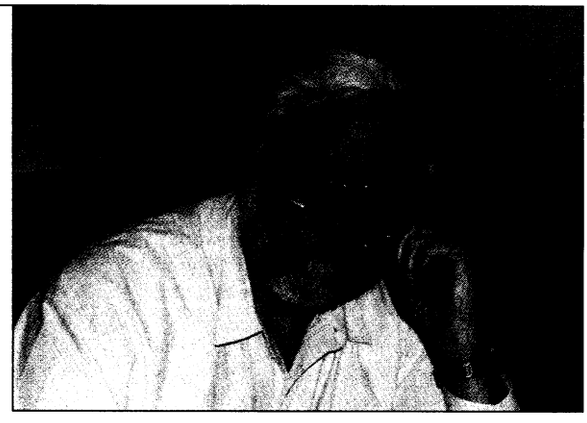
MEETING BRIEFS

Peer Review Goes Under The Microscope

Drummond Rennie, West Coast editor of the *Journal of the American Medical Association* (JAMA), says that his epiphany came in 1985: It struck him that as a scientific editor he was devoting most of his life to the peer-review system, and yet virtually no research had ever been conducted to test it. The result was the First International Congress on Peer Review in Biomedical Publications, organized by Rennie in 1989. Fifty abstracts arrived almost at the last moment, covering issues ranging from how much time reviewers spend on reviews to whether blinding the reviewer to the author of the paper helps to suppress bias. "They seemed to come out of nowhere," says Rennie. His relief faded, however, when he read the abstracts and realized that "a great deal of them were poor at best."

Now, 4 years later, comes the sequel, the Second International Congress, or Peer Review II, held in Chicago from 9 to 11 September. This time, the conference attracted some 270 researchers, most of them journal editors, and 110 scientific abstracts. Rennie says he still would not boast about the standard of the science of peer review, but it was "higher than last time."

Less satisfied was Marcia Angell, executive editor of the *New England Journal of Medicine*, who likened the study of peer review to the study of art, where quality is more easily recognized than quantified. "Most of the things you can measure aren't interesting," Angell suggested, "and most of what's interesting you can't measure." But Angell's dictum isn't absolute, as the following results go to show. Caveat emptor: These studies have not been peer reviewed.



Peer-review reviewer. Drummond Rennie.

Significant Statistics

As any medical researcher knows, one of the best ways to evaluate the efficacy and safety of a particular drug or treatment is a randomized, double-blind trial. The therapy is given to subjects at random, with everyone else in the trial getting another treatment or a placebo, and nobody involved—neither the physician, nor the technician giving the treatment, nor the patient—knowing which treatment is which. "Randomization is the only reliable way of avoiding selection biases," says Iain Chalmers, director of the United Kingdom's Cochrane Centre, which is part of an international collaboration that studies health care. "If it is not done properly, biases won't be avoided" and the studies will become meaningless.

You would expect journals to be especially vigilant in ensuring that they publish clinical results only from properly randomized, double-blind trials. But, as Chalmers and several other speakers told the meeting, that's not always the case.

Chalmers and his colleagues analyzed 206 studies of drugs and procedures published in four leading obstetrics and gynecology journals in 1990 and 1991, looking at the adequacy of the randomization and double-blind procedures. The results were sobering, said Chalmers.

Only a third of the studies reported hav-