considerable favor from employers and was being used in 40 states on about 8% of applicants.

The NAS panel members generally affirmed the whole program. They confirmed that the GATB is a valid predictor of job performance, although they concluded that Hunter and Schmidt's estimated correlation of 0.5 between test scores and job performance was too high. Citing additional, more recent, studies, they adjusted it down to the neighborhood of 0.3. Although many critics of ability testing believe a 0.3 correlation represents an improvement over random choice so small as to be meaningless, panel leader Hartigan said at a Labor Department briefing that the critics have misinterpreted the effectiveness data, and that use of the tests actually improves the ability to predict a worker's productivity by 30%. And he reaffirmed the panel's agreement with Hunter and Schmidt that the GATB is more reliable than any other single selection criterion, including interviews, educational background, skills, and job experience. Said Hartigan, "we probably cannot afford not to use" the GATB.

The most crucial aspects of the report have to do with questions of whether blacks and Hispanics are unfairly dealt with, and what to do about the fact that their scores are significantly lower than those of whites. With regard to whether the GATB is racially biased, the NAS endorsed findings from a vast body of research on the subject showing that it is not—that is, the tests predict equally well for blacks and whites. The NAS confirmed that, if anything, the test slightly favors blacks by "overpredicting" their job performance.

Many test critics, including Richard T. Seymour of the Lawyers Committee for Civil Rights, have claimed that the test is racially biased because more potentially able black workers are rejected by the test, and more poor white workers get passing scores. In scientific terms, more blacks than whites fall in the category of "false negative," and more whites are "false positives."

The NAS panel said, however, that this disproportion has nothing to do with race per se but arises from the fact that it is the marginal scorers who are most likely to fall in the false negative category (see graph). This can be demonstrated by performing the same analysis using one racial group.

As the academy panel pointed out, the problem of false negatives is an inevitable result of the limited predictive capability of the test. But the panel has put itself in a somewhat awkward position. Study director Alexandra Wigdor emphasized that "this correction is not for racial underprediction, it is underprediction for low scorers." But the report presents race norming as a way to "ensure that able black and white workers have the same chances of referral"—thus implying that the test is biased.

What the academy has done is to take a remedy adopted by the employment service on purely pragmatic grounds and present it as one that is scientifically justified—even though, according to James Sharf, an industrial psychologist at the Office of Personnel Management, the vast bulk of research shows that pure rank-ordering of scores "is the only scientifically justified position." Sharf, a member of the committee's liaison group, quotes Hartigan as saying, at a meeting 2 years ago, that "this committee is not about to put a scientific fig leaf on a naked political argument." Sharf says the feeling at OPM is that the committee has done just that. Hartigan could not be reached for comment.

The widespread adoption of race norming could open up a Pandora's Box of new questions and litigation. Nonetheless, overt and systematic policies of racial preferment may be better than informal arrangements that are often neither efficient nor fair. As Wigdor observed, employers are in a "tremendous bind" because they risk adverse impact suits when they use objective selection procedures, and reverse discrimination suits when they set up programs favoring minorities. As a result, "a lot have turned to quiet, unobtrusive quota systems that can't be recognized in court."

■ CONSTANCE HOLDEN

Consorting on Superconductors

They may be the most powerful corporate rivals in U.S. research, but IBM and AT&T have decided to join forces—along with the Massachusetts Institute of Technology and Lincoln Labs—to ensure American primacy in superconductivity in the 21st century. The venture, to be known as the Consortium for Superconducting Electronics, will attempt to transform what has been largely an interesting laboratory phenomenon into real-world applications. If it appears to be working, it could become something of a model for corporate rivals in other fields to work together with universities on long-term applied research programs.

The initial focus of the consortium will be applications in the world of microelectronics, such as high-speed signals processing circuits and junctions between electronic devices, that are expected to constitute the first uses of the new superconductors.

This may prove particularly wise because superconducting electronic devices are expected to be less affected than many other putative applications by the recently reported (*Science*, 26 May, p. 914) phenomenon known as "flux creep" that can destroy the superconducting properties of the new materials when they are exposed to magnetic fields. Still, the most promising electronics applications are, as yet, uncertain. Says William Brinkman, director of physics research at AT&T's Bell Laboratories, the consortium should "find an answer to the question of whether there are technical opportunities open to us."

Indeed, the fact that the big players in high-temperature superconductivity have decided to join forces is being viewed by some as an indication that they are looking for a way to share some of the costs while they explore the formidable barriers that lie before them. Says Dean Eastman, a vice president of IBM's research division: "We believe that it's going to take considerable time to achieve applications, so we need to look at this over the long haul, not just when it's in vogue among scientists."

A novel feature of the consortium that sets it apart from other university-industry research arrangements is that it is built around a detailed plan, complete with technical milestones, and it will be managed by a central group to be located at MIT. "It is not a consortium in which IBM, AT&T, Lincoln Labs, and MIT are each following their own programs and sharing results; they will be following a single technical plan," says MIT provost John Deutch. Adds Eastman of IBM, "the consortium will act like a small company."

Not so small, though, when ranked against other superconductivity start-ups. Indeed, the new entity will command an annual budget of $12 million to $15 million a year. A grant of $4 million to $6 million is being sought from the Defense Advanced Research Projects Agency to finance work at MIT; the rest will be kicked in by each industrial partner. Each institution will have the equivalent of five or six full-time researchers working for the consortium.

Deutch says he will be spending some time over the next year seeking additional members for the consortium from industry, the national laboratories, and other universities. Similar consortia could follow, Deutch predicts. "We have it in mind as being a model for how universities, industry, and the national labs can work together on things that are in the national interest."

■ COLIN NORMAN