US plans to rescue materials research

■ Government-wide effort to boost funding
■ Would resemble supercomputer initiative

Cincinnati, Ohio

THE White House Office of Science and Technology Policy (OSTP) is planning a major initiative in materials research, to rescue a hot field threatened by an ice bath of inadequate funding.

The initiative is expected to include "hundreds of millions in new and reprogrammed dollars" for materials research, said David Huber, executive director of the OSTP-affiliated White House National Materials Council, speaking at the American Physical Society's annual meeting in Cincinnati late last month. The proposal is scheduled to be included in the 1993 White House budget request to Congress.

Huber's announcement brought applause from the researchers in the audience, many of whom have seen their funding opportunities wane even as their discoveries in high-temperature superconductivity, semiconductor physics and other areas of materials science have drawn praise for both their scientific and commercial value. Although the number of researchers in the field has doubled in the past decade, funding has remained essentially level, rising only as fast as inflation. Academic scientists have been forced to turn almost exclusively to their own departments to fund new laboratories, and young investigators now actually have a better chance of winning a special prize or fellowship than a regular grant from the National Science Foundation (NSF).

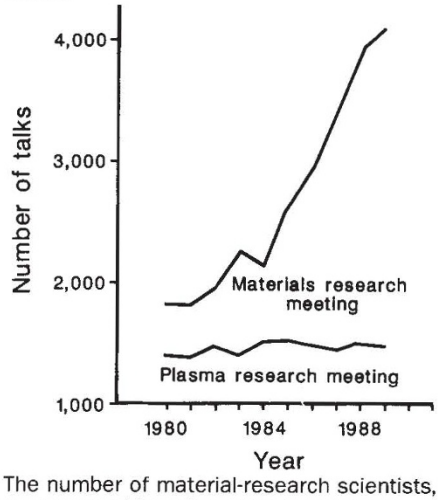
The fact that twice as many scientists could scrimp and save to survive on the same amount of money, "proves that physicists are very compressible, but it doesn't bode well for the future", says Michael Schluter, an AT&T Bell Laboratories physicist who headed a recent study[1] on the subject by the American Physical Society.

Describing the field as "seriously threatened", the report finds that support for individual investigators has been especially hard hit. For example, NSF, the chief supporter of university research, is spending some $100 million less than it was ten years ago.

"The times are dramatically out of joint for Condensed Matter Physics," the report warned. "In an era where this field has become one of the very most active and relevant of the sciences, its future is in jeopardy."

Earlier this year, materials researchers released another report[2] calling for $1,250 million a year of new funding from industry and government (an increase of about a third over current spending) to remain competitive with the rest of the world. Huber told the physicists that OSTP is "paying a good deal of attention" to that report and would hammer out the details of the new effort with input from the community.

OSTP intends to organize the initiative much like the new high-performance computing and education initiatives the White House announced in February, and a global warming research initiative created the year before. Like those, the materials initiative will be spread across all the US agencies that currently do some materials research, coordinated by an inter-agency body known as the Federal Coordinating Council on Science, Engineering and Technology (FCCSET, pronounced "fix-it"), which is headed by D. Allan Bromley, director of OSTP.



The number of material-research scientists, as measured by talks at the American Physical Society's March meeting on condensed-matter physics, has more than doubled in the last decade, while those in other disciplines (plasma physics, for example) showed little change.

Warning that "for a more complete story, you'll have to wait for the 1993 budget", Huber nevertheless described a planning process that is already well under way. OSTP is now taking an inventory of the $1,600 million the federal government is already sponsoring in materials research, in order to identify overlaps or opportunities for collaboration. Rough plans for the initiative will be completed by mid-June, Huber said, and will then be circulated to the relevant agencies for comment. Final approval will be up to the powerful Office of Management and Budget (OMB), which will set the actual dollar request. **Christopher Anderson**

1. *Opportunities, Resources, and Problems in the Field of Condensed Matter Physics*, American Physical Society, 1990;
2. *A National Agenda in Materials Science and Engineering*, Materials Research Society, February 1991.

SCIENTIFIC MISCONDUCT

UK medical guidelines proposed

London

BRITISH research funding agencies should consider denying grants for medical research to institutions that have no mechanism in place to investigate allegations of scientific misconduct, according to a Royal College of Physicians (RCP) working party. The working party's report, published this month in the RCP's official journal, is the first attempt by the British medical research community to tackle scientific misconduct, and suggests a strict procedure for research institutions to follow when allegations arise.

The RCP working party was set up in January 1989, largely on the initiative of Stephen Lock, the now-retiring editor of the *British Medical Journal*. In 1988, Lock conducted a confidential survey of prominent British medical researchers and journal editors. He found that only three of the 29 research institutions canvassed had any formal mechanism in place to investigate allegations of misconduct. And more than half of the 79 individuals who responded knew of an instance of misconduct — suggesting that the problem in Britain is much wider than the half-dozen documented cases of fraud, plagiarism or piracy of ideas.

The RCP recommendations borrow heavily from the 1989 guidelines laid down by the US Institute of Medicine. Students should be introduced to a code of practice for research, young investigators' raw data should be scrutinized frequently by their supervisors, and all data should be retained for ten years, the working party says.

The RCP suggests a blueprint for research institutions to follow in handling fraud, modelled on the 1988 guidelines of the Association of American Universities. But the RCP recommendations fall short of calling for a central body to investigate allegations of misconduct, along the lines of the US National Institutes of Health's Office of Scientific Integrity. With no central body to apply pressure from above, research institutions may be inclined not to investigate allegations against their researchers, to avoid attracting negative publicity. But Tawfique Daneshmend, from the Royal Devon and Exeter Hospital, and a member of the RCP working party, says that the recommendations should be seen as the "first word" on misconduct from the medical research community — the question of a central investigating authority is not closed.

Although most of the RCP recommendations are uncontroversial, the suggestion that funding bodies should award grants only to institutions that have a mechanism to investigate misconduct seems likely to divide the research community.

Peter Aldhous