After 20 years, prospects remain bleak for minorities in US science

Atlanta. The American Association for the Advancement of Science (AAAS) chose "Unity in Diversity" as the theme for its 161st annual meeting, which took place over last weekend in the home city of Martin Luther King and his still-elusive version of the American Dream.

But Atlanta is still not united, and US science is not yet diverse. Thirty years after Dr King's speech, blacks have political control of the city's shattered core. But the whites — and most of the wealth — have moved to the suburbs; and the overwhelmingly white gathering of over 5,000 AAAS members reflects 20 years of faltering efforts to make science "look more like America".

Wyche: fears for the future of diversity

Figures recently published by the National Research Council show that in 1993 black Americans were awarded 4.2 per cent of all doctorates in the United States — a figure virtually unchanged since 1978. But the bulk of those doctorates were in education and social science: blacks received just over 2 per cent of life sciences doctorates in 1993, and just 41 physical sciences doctorates out of a total of 3,500. Hispanics have slightly improved their position. But both groups remain underrepresented in the outflow of science PhDs in the United States by a factor of about ten.

"The statistics are very depressing," concedes Francisco Ayala, the president of the AAAS and himself a Spanish immigrant to the US. "Despite all the efforts that have been made, representation remains very low". Although the AAAS board meeting in Atlanta was briefed on the issue, Ayala says, "the fact is we don't know the answers. Perhaps attempts have been made to patch the problem up, when systematic problems need to be approached systematically."

But the vultures are now circling over such efforts as have been made to draw blacks and Hispanics into US science. Programmes to help minority students that exclude whites have been declared illegal (although the ruling has not been enforced). A pending referendum in California could nullify the state's affirmative action programmes, and Senator Phil Gramm (Republican, Texas), a leading contender to be the next US president, has promised to do the same at the federal level — on his first day in office.

Politicians are not the only people promoting such policies. At a recent science policy seminar at the Massachusetts Institute of Technology, James Vincent, chief executive of the biotechnology company Biogen, said that efforts to boost diversity in science are a waste of time. We should, he said, "return to a merit-based system".

James Wyche of Brown University, Rhode Island, who organized a session on racial diversity in the sciences at the AAAS meeting, said that these events were not all bad. "There's been a change in the political and social environment in the United States, and this question is being revisited," he says. "That is not necessarily a bad thing." Some programmes, says Wyche, have been created without an adequate assessment of their effectiveness.

At the session itself, speakers argued that diversity programmes should emphasize excellence, rather than remediation. "I rarely hear of kids from remedial classes doing a PhD," said Freeman Hrabowski, president of the University of Maryland at Baltimore County, whose $6 million Meyerhoff Scholars' programme, aimed at attracting the best minority students into science and steering them into PhDs, has been widely acclaimed.

But it is at graduate school that the problem intensifies, according to data reported by Clifton Poodry of the National Institutes of Health (NIH). He found that, while 33 per cent of white graduate students complete their PhD, only 14 per cent of minority students do so — a far wider disparity than at any other stage of education.

Poodry says he does not know how much this is due to the relative economic insecurity of minorities. But Hrabowski denies the suggestion that it may be irresponsible to send black students down such a rocky road. "Remember that there are thousands of economically advantaged black people in America, and there are thousands of disadvantaged minorities who are doing well in science," he points out.

The session also acknowledged the crucial requirement of leadership from prominent individuals. Only very recently has such leadership been forthcoming in science. Harold Varmus, the director of NIH, has taken a strong interest in the issue inside the institutes, and was described by Hrabowski as the "godfather" of the Meyerhoff programme.

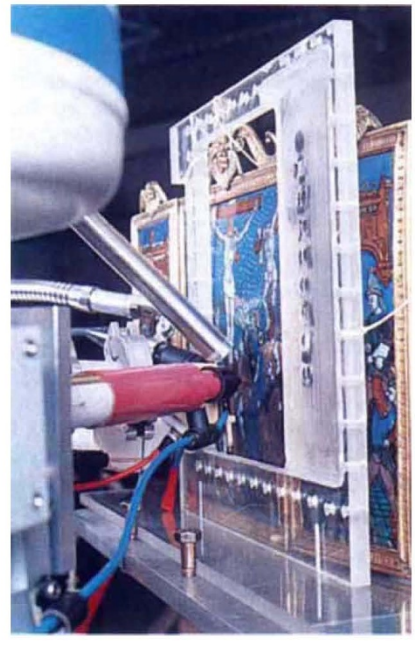
Dan Goldin, administrator of the National Aeronautical and Space Administration ▶

Art meets science underneath the Louvre

Paris. **The worlds of science and art collided last week with the opening of the new buildings of the Laboratoire de recherche des musées de France, in the grounds of the Louvre in Paris. Created in 1931, the laboratory has become a centre of excellence for the scientific study of collections, and the restoration of works of art — over 1,000 objects and 430 paintings pass through the laboratory every year.**

The new building is likely to become recognized as a work of art itself. Built at a cost of FF155 million (US$30 million), the Parisian daylight saturates its 5,000 m^2 of underground floors — arranged on three levels around a vast central shaft — through a massive glass slab supported by solid glass beams, themselves an architectural first.

Besides the X-ray, infrared and ultraviolet radiation techniques used to unravel the history behind the surface of objects, the centre's 60 researchers are also equipped with a 2 MV electrostatic particle accelerator 'AGLAE'. Its three neutron beams allow the non-destructive chemical analysis



of objects, for example the study of the colours of glass used in the triptyque of "The Crucifixion" (see above), made of enamel on copper in Limoges around AD 1500. Declan Butler

(NASA) and originally a Republican nominee, has appointed minorities in key positions in NASA for the first time. Addressing the Atlanta meeting, he pledged to involve more "capable women and quality minority scientists" in the work of the notoriously white and male agency.

Yet President Bill Clinton's attempts to appoint a more diverse administration have attracted much derision in the United States, and were almost certainly a factor in last November's elections, when Republicans won almost two-thirds of the white male vote.

Ayala maintains that this derision does not permeate the scientific community. "There is a backlash among the general population, but not among people who practice science," he says. He cites election results to the 11-strong board of the AAAS — which has four women, two blacks, and the Spanish-born Ayala as president — as evidence of members' desire for diversity.

Wyche does not see a backlash on the campuses either. But he fears for the future of racial diversity in science in the United States if the federal government decides to stop pushing for it.

"We have slowly built up support for what we are doing among the majority [white] faculty over the past 20 years. They have supported us because of the protection of the federal government." Without that protection, he fears, that "fragile base of support" will fade away. **Colin Macilwain**

Scientists urged to protest against new 'book burners'

Atlanta. Branding the new leadership of Congress as "book burners", Bruce Babbitt, the Secretary of the Interior, last week called on scientists to rally in defence of three science agencies in his department — the US Geological Survey (USGS), the Bureau of Mines and the National Biological Survey (NBS) — all of which, he predicted, Congress would try to close down before the end of this year.

In a combative address to the AAAS meeting in Atlanta which marked a further hardening of the administration's opposition to Republican plans to cut the budget, Babbitt said that the elimination of the three agencies threatened to "eliminate root-and-branch every trace of science" from his department.

"The proposed destruction of these agencies is the [natural] resource equivalent of book burning," said Babbitt. He also compared proposals to close the USGS in the wake of last year's earthquake in California to "the burning of a few more heretics at the stake" after an earthquake in seventeenth-century Portugal.

But he described the threat to the agencies as "genuine and immediate", predicting that, in the autumn, President Bill Clinton might be unable to veto a budget bill that would close them down. Furthermore, if Clinton does indeed veto the budget bills, Republicans in Congress have pledged to withdraw all approval for federal spending — even if this means that parts of the government have to close down.

The proposal to close all three agencies is included in a list of cuts prepared by Republican members of the House Budget Committee last April. The list is referred to in the *Contract with America*, the Republican election manifesto, as an example of how savings could be made. But Republicans deny that the specific cuts form part of the *Contract*.

[Robert Walker (Republican, Pennsylvania), chairman of the House Science Committee and vice-chair of the Budget Committee, told a closed meeting of senior scientists in Washington last week that elimination of the USGS was 'off the list' of Republican cuts.

At the time of going to press, no-one in Walker's office was available to confirm his comments. Bonnie McGregor, deputy director of the survey, said she was unaware of them, and warned against complacency in the run-up to appropriations hearings due to start next week.]

Of the three science agencies at the Interior Department, the most seriously threatened is the NBS, recently and defensively renamed the National Biological Service. But some officials say that Babbitt himself took a risk by setting up the NBS in 1993 as a politically contentious consolidation of several previously obscure research divisions within his department.

The threat to the survival of the NBS has left natural resource sciences such as conservation biology and ecology in disarray. Researchers had been expecting that, after the foundation of the survey, Babbitt would start to provide it with money to fund the collection of badly needed data; officials now concede that this will not happen.

Instead, they expect Congress to attempt to rescind part of the $167 million already appropriated to NBS for the current year, before moving on to more drastic measures. "I'm just a simple university professor suddenly thrown into the world of Washington," protests H. Ronald Pulliam, the director of the NBS, who happily held a tenured post at the University of Georgia until last summer.

Pulliam says that good science at NBS need not necessarily lead to a new outbreak of regulation that Republicans claim to fear. "The more we know about natural systems, the more chance there is that we can have the economic progress we want, without losing the biological diversity we need," says Pulliam. **Colin Macilwain**

R&D funding 'heading for 25% cut'

Atlanta. **Spending by the US government on research and development (R&D) is likely to fall by a quarter over the next five years, according to George Brown, former chairman and now senior Democrat on the newly-named House of Representatives Science Committee.**

The veteran California congressman told a AAAS session on the future of the physical sciences that the impact of Republican spending plans on science is hard to gauge. But he added: "my own prediction is for a 25 per cent cut in total R&D spending over the next five years, with some areas suffering even more."

Brown conceded that he had been among those who had encouraged scientists to link their work to "national goals" which had now changed with the Republican takeover of Congress. This, he said, had left the scientific community in "the worst situation"; it was now under fiscal attack, but without the benefit of goals and performance standards, and being judged by "inappropriate measures".

As a result, Brown predicted, basic research with now be worse off than before, isolated by the impending decline in applied research while being subject to new political demands. "Putting on my partisan hat, it is naive to think that research, [whether] basic or applied, will not be linked to the conservative Republican social and political agenda."

Brown called for new thinking about the scale and scope of the US university system, which he feels may not be sustainable at its current size. "We can no longer deny the excess capacity, or more correctly unfocused capacity, in our higher education system," he said.

He also said that, regardless of recent political changes, the physical sciences are likely to prosper in post-Cold War America only if they addressed the nation's social and need.

"More concretely, if the scientific community cannot reconnect with basic social values, you will find yourselves in a role as central to policy making as a Democrat in Washington — a status I wouldn't wish on anyone," said Brown.

*** A week earlier, speaking in Washington, Brown had pointed out that the budget proposals put forward by the administration would take total spending on civilian and defence research and development below one per cent of the gross national product for the first time since 1958. "I am very concerned, but I'm afraid that the situation will only get worse after the new Congress gets through with it," he said. C. M.**