

## Auto project has veered off track, says academy panel

[WASHINGTON] A joint initiative between the US government and the car industry to develop more economical cars is putting too much effort into 'hybrid' vehicles that will be costly to build and maintain. That is the conclusion of a panel of the National Research Council (NRC), part of the National Academy of Sciences complex.

The Partnership for a New Generation of Vehicles (PNGV) programme decided earlier this year to pursue hybrid vehicles as the most promising route to developing a prototype passenger car that will do 80 miles per gallon (m.p.g.) by the year 2004.

PNGV is a flagship of the Clinton administration's technology policy, and involves government laboratories working in collaboration with researchers at Ford, General Motors and Chrysler. It chose hybrid electric vehicles, which can switch between a diesel engine and a battery depending on conditions, because more sophisticated technologies, such as fuel cells, will not be ready by 2004.

But the hybrid approach may never be economical, says the NRC panel in its fourth annual assessment of the project. This is because of the extra costs of building and maintaining a car with two power systems. Despite the better fuel economy of a hybrid vehicle, the panel says, "the difference is probably not enough to offset the higher cost" of building and maintaining it.

The panel was chaired by Trevor Jones of Echlin, a car component supplier based in Cleveland, Ohio. It says that PNGV partners should put more effort into technologies with greater long-term potential for big improvements in fuel economy, such as fuel cells. It adds that, while awaiting such breakthroughs, the partners should try to develop a non-hybrid vehicle with a more realizable fuel economy target of 60 m.p.g.

The panel suggests that some of the project's effort should be directed to increasing the fuel economy of light trucks and sport-utility vehicles, which together now account for half of the car market in the United States. The project is currently focused on increasing the economy of a standard four-door family car, such as the Ford Taurus.

William Daley, the commerce secretary, and Federico Peña, the energy secretary, issued statements that welcomed the NRC report but failed to address the issues it raises. But Eric Clark, a spokesman for the Department of Commerce, said that PNGV was only four years into a ten-year project, and that it would now start to focus more on questions of cost. "The affordability issue is now at the forefront of our work," he said.

C.M.

## US universities under fire for 'antiquated' teaching

[WASHINGTON] Research universities in the United States consistently ignore the needs of their undergraduate students, failing to let them do research or even to find out what it involves, says a report released this week.

A commission set up by the Carnegie Foundation for the Advancement of Teaching to investigate undergraduate education also finds that the leading universities provide undergraduates with few of the communication or other skills needed in a job.

The commission finds that the research universities — which award about half of all undergraduate degrees in science and engineering in the United States — continue to teach science using methods borrowed from liberal art schools a century ago and clumsily adapted to the massed ranks of undergraduates now accepted each year.

It finds that the undergraduates, as well as being badly taught, are largely excluded from the intellectual life of the universities. They are, in the commission's words, "second-class citizens who are allowed to pay taxes but barred from voting, the guests at the banquet who pay their share of the tab but are given leftovers". It blames incentive schemes that encourage faculty members to value research above teaching, as well as general resistance to change in university departments.

The commission started its work under the tutelage of Ernest Boyer, former president of the Carnegie Foundation, and continued after his death under the leadership of Shirley Kenny, president of the State University of New York at Stony Brook.

Its criticisms of the universities, which resonate with growing resentment in the United States over the fees they charge

undergraduates, received intense media coverage when they were released.

But the commission's recommendations for change promise little relief for the bank balances of students. Top of the list of ten changes that it says the universities should make is the replacement of lecturing of massed ranks of first-year students with enquiry-based methods, including personal attention through seminars. "The focal point of the first year should be a small seminar taught by experienced faculty," the commission says.



Alberts: changes are already under way.

This personal attention should continue through mentoring throughout the degree course, it suggests. Departmental boundaries should be breached to encourage interdisciplinary work, which "must reflect students' needs rather than departmental interests". Communication skills should be integrated into teaching, the commission says, noting that "the failure of research universities seems most serious in conferring degrees upon inarticulate students".

Bruce Alberts, president of the National Academy of Sciences and a member of the commission, says progress is under way to address many of its findings. At Stanford University in California, he says, first-year students take at least one enquiry-based course, and staff promotion is considered by a committee with a member who assesses teaching performance.

Colin Macilwain

## UK biotech flagship meets stormy waters

[LONDON] British Biotech, one of the leading UK biotechnology companies, last week sacked its director of clinical research for allegedly passing confidential information to two of the company's investors.

Andrew Millar was dismissed for allegedly disclosing doubts about the company's commercial strategy and the status of trials of its flagship drugs, zacutic for pancreatitis, and marimastat for cancer.

But the sacking did little to reassure analysts that the troubled company was about to turn the corner. The company's stock market value has plummeted from £1.9 billion (US\$3.2 billion) last year to £372 million last week following a series of internal controversies, including a delay in reporting interim results of drugs trials.

British Biotech is also being investigated by the US Securities and Exchange Commission over the accuracy of press statements about marimastat. Optimistic assessments of this drug led to large increases in the company's share price.

It has also emerged that two of the company's senior officials sold shares for a profit of around £1.2 million before the announcement of problems with batimastat, its previous lead cancer drug that was abandoned in 1995.

A senior fund manager at Perpetual, which holds 8 per cent of British Biotech shares, is reported to have said that Millar was concerned that "the status of the trials was completely at odds with the [company's] grand strategy".

Ehsan Masood