

## Harvard scientists split on curriculum reform

THE faculty of Harvard University has been split almost along C. P. Snow's classic "two-cultures" lines over proposals to introduce a core curriculum to be taken by all undergraduates.

Under the new proposals, on which the full faculty is expected to vote at a meeting on 11 April, students would be required to take at least two half courses from each of five areas: literature and the arts, history, social and philosophical analysis, science and mathematics, and foreign languages and culture. There would be additional requirements in expository writing, mathematics and foreign languages.

In aggregate terms, opinion within the faculty on the proposed curriculum seems evenly balanced between those in favour and those against; few are prepared to predict the outcome of the vote. However enthusiastic support from faculty members in the social sciences and humanities has been faced with scepticism from many in the natural sciences.

An informal poll conducted by the *Harvard Crimson*—the university's undergraduate newspaper—revealed that among the former, 55% were in favour of the proposals in their present form, 28% against and 11% undecided, while among natural scientists the situation was the reverse, with almost two-thirds (64%) against the proposals and 22% in favour.

One point of dissent is whether a strict set of requirements is appropriate for Harvard undergraduates. Some students resent the compulsory nature of the proposed core, while staff argue that it could put off the best applicants.

Equally controversial, however, is whether it is educationally possible to provide a significant insight to a non-scientist into the nature of modern science in two courses that may take up only one-sixteenth of an undergraduate's university career and whether this provides an adequate reflection of the role of science in the

modern world.

The core curriculum is the outcome of lengthy discussions that have taken place since the early 1970s under the stimulus of the Dean of Harvard, Dr Henry Rosovsky. In contrast to the general education courses which students have been required to take for the past 30 years, and which aim at developing a broad appreciation of cultural and intellectual issues, the core curriculum as presently proposed attempts to articulate a more structured educational philosophy, its goal being "to have students acquire basic literacy in major forms of intellectual discourse".

A major innovation is that all students would be required to demonstrate an ability in mathematics. A test emphasising algebraic manipulation and quantitative reasoning would be taken at the beginning of their first year, and those who failed would be required to take one of a range of specially-designed courses. Although the compulsory mathematics requirement has raised several objections—some, for example, feel that it could be made part of the entrance requirement—these have been relatively muted. More hotly debated, however, have been the broader aims of the curriculum with respect to the natural sciences.

According to the task force which prepared an outline curriculum submitted to the faculty last month, the aim would be "to convey a general understanding of science as a way of looking at Man and the world". Rather than seeking the breadth of coverage appropriate to departmental introductory courses, the task force suggests that students should "investigate in depth a relatively small number of topics which demonstrate important concepts and methods".

Is teaching science to non-scientists in this way a viable educational goal, given existing constraints on time and resources? Here the science faculties

are split, some claiming it is, while others see it as wishful thinking on the part of non-scientific colleagues.

"How do you offer adequate courses in the physical sciences if people lack sufficient facility with algebra?" asks Professor Frederick H. Abernathy, McKay Professor of Mechanical Engineering. "Perhaps it can be done in isolated cases such as cosmology, but I am afraid that students will end up taking a course that presents physics and chemistry at no more than a rudimentary high-school level".

Others are more optimistic. "If you ask whether it is possible to teach science to non-scientists in this way, my answer is yes; it is not only possible but necessary," says Dr David Dressler of the department of biology. "If we don't do it then the chasm between the scientists and the non-scientists will become even wider than it is now. And until one seriously tries to put such an approach into practice, it is wrong to say that it can't and shouldn't be done".

The core curriculum is being enthusiastically backed by the university administration, and in particular by Dean Rosovsky, who has promised substantial resources to put the plan into effect if the faculty passes enabling legislation for him to do so.

But the opposition remains substantial. A straw poll taken three weeks ago at a meeting of faculty professors of the division of applied sciences voted 23 to 3 against approving the proposal, many because they felt its requirements were too rigid; and the physics department is also described as "predominantly opposed" to it.

So next week's debate promises to be a lively one. And even if the new plan is accepted, the success of the core curriculum will depend on the enthusiasm and commitment of those charged with constructing and teaching the courses. As one chemist puts it: "the best taught courses are those which someone is eager to teach". And no-one is disputing that.

David Dickson



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## President Carter gives Sun Day official blessing

PRESIDENT Carter, under increasing criticism for his apparent pro-nuclear policies, has given his official support to the designation of May 3 as Sun Day, an idea that originated within a group of environmentalist organisations in Washington, and now promises to involve groups in at least 18 countries throughout the world.

In a presidential proclamation issued last week, the president said that he called upon "the American people to observe that day with appropriate activities and ceremonies that will demonstrate the potential of solar

energy". And he directed all appropriate federal agencies to support such national observance, although adding that success of the federal government's solar energy plans would depend on "an informed and involved public".

According to the Washington-based co-ordinators of Sun Day, requests for information have been received from individuals in more than 60 countries. Specific activities—ranging from academic sessions attended by government ministers in Belgium to a possible ceremony at Stonehenge in Britain—are being scheduled for 1–13 May. □