

within 3 years after publication, and were presumably making little impact on the development of science. "Thus the basic question emerges," conclude the Coles, as to "whether the same rate of advance in physics could be maintained if the number of active research physicists were to be sharply reduced. . . . We suggest that it may not be necessary to have 80 percent of the scientific community producing 15 or 20 percent of the work that is used

in significant scientific discoveries, if perhaps only half their number could produce the same work."

The impact of citation analysis on the scientific community cannot yet be assessed because all that has really been demonstrated so far is promise, not practicability. The NSF and NIH have political reasons for pressing ahead with the technique, although their interest, it should be noted, predated the present bout of congressional hostility.

On the other hand, both the agencies and most sociologists of science are afraid that the technique, having taken so long to reach the threshold of acceptability, could be set back disastrously by a few premature uses. Citation analysis is therefore likely to be introduced rather cautiously. Nevertheless, for those who wish to influence the way the technique is applied to the practice of science, the time is probably now.—NICHOLAS WADE

## Stanford Campus Debates Fate of Student Program

The Stanford University campus has been aroused by protests lately, not over the familiar issues of war in Southeast Asia or military research sponsorship, but over the proposed merger of a popular independent study program with the regular academic departments.

On 14 January, James L. Gibbs, Jr., dean of undergraduate studies, announced he would recommend to the administration that SWOPSI (Stanford Workshops on Social and Political Issues), merge with the rest of the university after June 1976 as a cost-saving measure. Since then, students have demonstrated with a mock funeral mourning the "death of underground education," inveighed against the merger in the columns of the *Stanford Daily*, the campus newspaper, and participated in a raft of faculty-student committees that are reviewing Gibbs' recommendation.

"The students have come out for this thing in the way they haven't come out for anything in years," comments one observer.

Gibbs' recommendation and the controversy it has aroused are part of a national trend in universities to cut back on para-academic activities in the interest of saving money. Stanford, like many other universities, agreed to the establishment of such programs in the late 1960's as constructive channels for then-rampant student political activities. But now, faced with growing budget deficits, universities must decide which of these "relevance" activities are most peripheral to their primary purposes, and hence which can be eliminated or consolidated to reduce costs.

Like other prominent universities (*Science*, 14 March 1975), Stanford is engaged in a major belt-tightening effort to trim \$10 million from its \$70 million yearly central operating budget over the next 3 years.

The SWOPSI program, which will enroll 700 undergraduates for course credit in the current academic year at a cost of \$26,231 in university funds, is perhaps the best known of such "relevance" programs. It received national publicity for a hard-hitting 1971 study of Pentagon-sponsored research on the Stanford campus (*Science*, 25 February 1972 and 22 November 1974); and it is known locally for a series of workshop reports that investigated a local air pollution control board, the impact of a proposed rapid transit plan, and destructive logging practices in the San Francisco Bay region.

The program operates with a full-time staff director. Students suggest workshop ideas; a faculty-student policy board approves them; then the student, with SWOPSI's aid, finds both a regular faculty member who will sponsor the workshop as well as a workshop leader—usually not on the faculty—who will contribute his or her time. The goal of each workshop is a report that is published independently of the university. Workshop leaders and students, after completing the studies, have sometimes been invited to serve on decision-making boards or to testify on subjects which they have researched. Some of the reports have become popular reading; one, on transportation, titled *Ride On!*, still sells in area bookstores.

Gibbs maintains that the SWOPSI workshops can be picked up individually by the academic departments without losing their character because the program, labeled an experiment, has been so successful. He stresses that he has never recommended the termination of SWOPSI, although he has recommended that two other experimental programs under his purview be ended to save money.

Defenders of an independent SWOPSI claim that if the ideas for workshops and the non-faculty workshop leaders had to pass muster according to departmental standards, the workshops would lose their current character and appeal. Charles Drekmeier, a political science professor, says, "The idea of SWOPSI is that there are a lot of experts running around who do not have Ph.D.'s and students should have the benefit of their expertise." Dan A. Lewis, a former director of SWOPSI, believes that the program will be transformed beyond recognition if Gibbs' plan goes through.

The current SWOPSI director, Andrew Parnes, also objects to the recommendation. In a letter to the *Stanford Daily* he estimated that instead of saving \$25,000 the move to the departments could cost Stanford \$300,000 yearly.

Some SWOPSI studies have offended members of the Stanford faculty and one claim is that Gibbs' recommendation is a form of political retaliation. (One SWOPSI report on faculty-student relations, for example, criticized the performance of Gibbs' office.

"It's not political retaliation," counters Gibbs. "It's simply a matter that the university is in a difficult financial situation."—DEBORAH SHAPLEY