Biotechnology's Movie Debut Worries Industry

Ever since Twentieth Century Fox leaked word several months ago that it was making a thriller depicting a biotechnology experiment gone awry, the biotechnology industry has been bracing itself. Cetus Corporation, in fact, agreed to serve as an anonymous consultant to the filmmakers in exchange for a sneak preview.

A preview of the film, called *Warning Sign*, was held in Washington on 12 August, and the reception looked like the social hour at a biotechnology conference. A couple of Monsanto representatives were chatting with people from the Environmental Protection Agency. A number of science journalists were milling about. A few researchers from the military's Fort Detrick laboratories were inconspicuous in civilan clothes. Activist Jeremy Rifkin was there to see the film a second time. ("The film will generate considerable discussion," he said.)

If anyone gets a black eye from the film, however, it may be the military, not the industry. In the opening sequence, a crop duster sweeps down over the Utah countryside. ("That's not our product," whispered one of the Monsanto people.) The film then goes on to show the military conducting secret biological weapons research in a small Utah town, using an agribiotechnology company as a cover. A test tube accidently breaks and a dangerous virus escapes. The building is sealed off. Despite elaborate safety precautions, human error leads to a mass infection of laboratory workers, who go berserk. There's a lot of blood and gore and broken reagent bottles. Sam Waterston plays the town sheriff trying to save his wife, played by Anna Quinlan, who is locked inside. The movie's last line is meant to evoke outrage. "I'm a scientist," insists one of the main characters. "I know what I'm doing."

In view of the recent controversy about the military's desire to build a new laboratory for biological warfare research at Dugway Proving Ground, Utah, it is hard to say what the impact of the film might be. The Army scientists looked rather glum after the film. "We don't use glass test tubes in P4 containment. We use unbreakable test tubes," said one of them. The plot of the movie is driven by several breaches of safety protocol which he consider's implausible, including a scene in which a scientist in a P4 lab becomes infected by lifting the faceplate on his protective helmet. "That's impossible with the kinds of suits we use," the army scientist said. "They're all one piece." His colleague added, "We do defensive research only."

Director Hal Barwood noted in an interview that the film had been shot before the debate over Dugway began. The idea for the film grew out of his interest in Legionnaires' disease, medical mysteries in general, and people's behavior under stress. Surprisingly, he says, "I'm an enthusiast about genetic engineering. I'm not like Jeremy Rifkin." He pitches the film as *China Syndrome* meets *Night of the Living Dead*.

Michael Goldberg, an executive at Cetus, said, "I'm glad it wasn't a good film cinematically. I think its impact will be minimal." Monsanto isn't taking anything for granted. For the past year, the company has been developing a public relations campaign on biotechnology. In mid-July it began a test of it in Columbus, Ohio, and Columbia, South Carolina. Monsanto denies any connection with the release of the movie. "We want to see if we can raise the level of awareness and increase knowledge and positive attitudes about biotechnology," said a Monsanto representative.

—MARJORIE SUN

Academy's Fusion Study Causes a Stir

There is a flap in Washington over a review by the National Academy of Sciences of the Department of Energy's inertial confinement fusion program. Stephen O. Dean, president of Fusion Power Associates, the industry lobbying arm, suggests in his organization's August newsletter that the panel is under pressure from the Reagan Administration to "tone down" findings of an unpublished interim report prepared in June.

William Happer, professor of physics at Princeton University who heads the Academy panel, says Dean is "misinformed" and "has blown this thing out of proportion." Contrary to assertions made by Dean, Happer contends that the panel has not agreed to soften language arguing that research on inertial confinement fusion is overclassified to the point of impeding scientific progress. DOE's division of classification, Happer says, did object to the finding but the panel has not altered its statement.

Likewise, Lee M. Hunt, the Academy's staff officer for the review, denies that there is any skulduggery afoot. He says there has been no pressure from the President's Office of Science and Technology Policy (OSTP) to remold the interim report to " . . . fit the executive branch's preconceived opinions of the program . . . ," as Dean asserts. OSTP sent the review panel a letter containing criticisms of aspects of the report. The Academy panel took up the letter at a scheduled meeting held 5–9 August in San Diego. But a reply has not been sent to the White House.

While Happer and Hunt flatly deny any wrongdoing, so far they have refused to release the tightly held interim report. The Academy is not making it public, Hunt says, because it was prepared under contract for the White House. President Reagan was ordered by Congress in 1984 to conduct a review of the inertial confinement program. He appointed OSTP director George A. Keyworth, II, and Alvin W. Trivelpiece, director of DOE's Office of Energy Research to oversee the task. They then contracted with the Academy to perform the review.

Dean, who has not seen the interim report, wants the Administration to release it promptly. He says the fusion science community was led to believe that it would be made public this summer. At least some DOE and national laboratory officials were expecting the Academy to make the document public. But Happer says it was not clear at the outset of the panel's work whether the interim report was to be made public. The panel, he adds, "did go to some effort to make it unclassified."

Supporters of inertial fusion have been anxious to see the interim report—in part because of the Administration's assault on the program's budget. The House and Senate appropriations committees have rejected paring back the budget to $70 million and have funded it at $155 million for 1986. Had the Administra-

tion's budget request not been overturned, major aspects of inertial fusion research would have been curtailed, DOE officials say. According to one program official, the newly completed Nova laser at Lawrence Livermore National Laboratory alone requires a budget in excess of $50 million annually to operate productively.

Congressional action for the coming fiscal year, which begins 1 October, combined with a positive Academy report, could discourage the Administration from seeking a massive cut in the 1987 program budget. The Academy expects to complete a final report on the inertial confinement fusion program this fall. The Administration must submit it to Congress by January.—**Mark Crawford**

British Scientists Urge Supercomputer Program

British scientists are asking the government to support the creation of a national center for advanced computing, equipped with one of the latest American supercomputers. They are also demanding that a special committee be established to devise a long-term national strategy for the use of advanced computers, and that significant new funds be allocated to upgrading Britain's existing interuniversity computer network.

The recommendations have been made in a report prepared by a group of university and industry scientists at the joint request of the three bodies concerned with the use of computers in research.* Its main conclusion is that Britain is currently in danger of falling behind other Western nations, particularly the United States and Japan, in many fields of advanced research—both in fundamental science and its industrial applications—because of the lack of adequate advanced computing facilities.

There are, for example, only two supercomputers currently available to university researchers, both now outdated and heavily oversubscribed, compared to five in West Germany. Government civilian research laboratories in Britain only have access to one such machine, while similar institutions in the United States have 20 at their disposal.

In order to stop Britain falling further behind, the committee, which was chaired by Alex Forty of the University of Warwick, argues that the government should spend an extra $66.5 million over the 5 years 1986–1990, a figure broadly comparable—in terms of computing power per scientist—to that which has recently been committed by the National Science Foundation in the United States.

Of this sum, $21 million would be used to purchase a Cray X-MP multiprocessor system to be installed at the Science and Engineering Council's Rutherford Appleton Laboratory, for use by both academic and industrial research workers. In addition, $11.2 million would be spent over the 5 years to introduce high-speed trunk lines between major research centers and to install fast local area networks and faster switches.

The commitee suggests that a second stage, involving the installation of a second supercomputer in 1990, should be considered in 1988, designed to take advantage of new developments in supercomputers such as the Cray 2 and 3, CDC's ETA 10, and their competitors from Japan. This second stage would cost an extra $28 million.

Members of the committee emphasized last week that the provision of adequate advanced computing facilities was vitally important for all fields of research, and it was for this reason that additional funds were being sought from the government, rather than asking the separate research councils to provide the money.

"We should look upon supercomputers as a general enabling technology, rather than a tool with specific applications," said Alistair Macfarlane, professor of engineering at Cambridge University.

The report does not mention any difficulties that could arise if the U.S. government decides to apply restrictions on those who are allowed to use American-built state of the art machines. In terms of ad hoc use by foreign individuals or groups, the report states that "the principle of free access according to merit . . . is something that we would wish to safeguard." Research proposals would be referred to a peer-review body and "assessed strictly on merit in competition with other applications."

A spokesman for the Department of Education and Science, the government agency that would be responsible for the operation of a national advanced computer center, described the suggestion that the United States might insist on restrictions being applied to those who were allowed access to such a machine as "far-fetched."—**David Dickson**

*"Future Facilities for Advanced Research Computing," published by the Science and Engineering Research Council, Polaris House, North Star Avenue, Swindon SN2 1ET.

Ohio State's Telescope Granted 10-year Reprieve

Ohio State University's radio telescope, which has been under threat of demolition for more than 2 years to make way for a golf course, has been granted at least a 10-year reprieve from the bulldozers. The future of the instrument, popularly known as Big-ear, has been uncertain ever since the land on which it sits was abruptly sold to the Delaware Country Club by Ohio State's neighboring seat of higher learning, Ohio Wesleyan University (*Science*, 18 February 1983, p. 821).

The club, which bought a large tract of land from Ohio Wesleyan for residential and recreational development, wanted the telescope removed so that it could expand a nine-hole golf course to 18 holes. The resulting publicity sparked a rescue effort by a committee consisting mostly of local businessmen, which culminated in the signing on 9 August of a 10-year lease with an option to renew for another 10 years.

But the instrument's future is still somewhat uncertain. According to John Kraus, an emeritus professor who is director of the observatory, no money has yet been set aside to pay for the lease ($6000 a year for the next 5 years and $9000 a year for the 5 years after that) or to reconnect the water and telephone services, which have been cut off. As for operating expenses, Kraus says that he hopes soon to apply for some grants. He has plans to use the telescope to monitor radio frequencies from comet Halley's hydroxyl radical clouds and to conduct a complete sky survey. The signing of the lease, he says, "is certainly a turn for the better,"—**Colin Norman**