NIMH Finds a Case of "Serious Misconduct"

Psychologist Stephen Breuning is said to have led an extensive career of fraudulent research on the use of psychoactive drugs with the mentally retarded

STEPHEN E. Breuning, a prominent investigator into the uses of psychoactive drugs with the mentally retarded, is the perpetrator of a surprisingly long-running, flagrant and deliberate case of scientific fraud according to a draft report of an investigation conducted for the National Institute of Mental Health (NIMH).

The panel, headed by psychiatrist Arnold J. Friedhoff of the New York University School of Medicine, was unanimous in finding that Breuning, a former NIMH grantee, had "knowingly, willfully, and repeatedly engaged in misleading and deceptive practices in reporting results of research . . . that he did not carry out the described research; and that only a few of the experimental subjects described in publications and progress reports were ever studied; and that the complex designs and rigorous methodologies reported were not employed." The panel concluded that Breuning "has engaged in serious scientific misconduct."

Breuning is currently reviewing the draft. He has steadfastly denied any wrongdoing beyond some minor errors. He told *Science* that he had not had the opportunity to respond to many of the allegations in the report and that he has had no communication with the panel since a 4-hour meeting with the members 2 years ago. He said he is preparing "a detailed response that I think will dramatically change" the final form of the report.

NIMH has taken more than 3 years to come up with preliminary findings from its first major investigation of alleged fraud. Questions about the validity of Breuning's work were first raised in December 1983 by Robert Sprague of the University of Illinois, who had taken Breuning on as an investigator for an NIMH project assessing the effects of neuroleptic drugs on the retarded. Sprague's detailed allegations were substantially confirmed by the panel's investigation.

The report, a copy of which was obtained by *Science*, outlines what appears to have been a chronic career of doctored research results and reports of research that was not conducted at all, dating from the mid-1970s in Chicago to April 1984 when Breuning resigned from the University of Pittsburgh during the course of an investigation by that institution (*Science*, 19 December 1986, p. 1488).

Breuning, 34, gained considerable prominence in his thinly peopled research field with studies indicating that antipsychotic drugs are overused and that stimulant drugs are more effective in the treatment of hyperactive retarded children.

". . . few of the experimental subjects described in publications and progress reports were ever studied," says the report.

He was employed at the Oakdale (Illinois) Regional Center for Developmental Disabilities for a year after he got his doctorate from the Illinois Institute of Technology. He transferred to the Coldwater (Michigan) Regional Center in 1978, and moved on to the University of Pittsburgh in 1981.

The NIMH review panel was able to authenticate little of the research he claimed to have conducted at any of these institutions. Although he claimed many of the subjects in his publications were studied while he was at Oakdale, investigators could find no evidence, either in Oakdale's records or from questioning colleagues there, that he had done any research with human subjects while at Oakdale.

Similarly, no raw data could be found for some studies Breuning allegedly conducted at Coldwater, and "no evidence could be found that deliberate drug manipulation according to a protocol, or administration of a placebo as described, was ever carried out there." Breuning said some of the data were actually developed at Oakdale, and other information collected by a nurse at Coldwater whom he declined to identify. The panel concluded that "none of the described studies of psychopharmacologic treatment had been carried out."

When at Pittsburgh, Breuning got his own NIMH grant to study the effects of stimulant drugs on mentally retarded children. Breuning submitted two progress reports to NIMH; in the second, he reported 6 completed studies and 11 publications published or in preparation. However, the investigation revealed that appropriate subjects were not available at the psychiatric unit in Pittsburgh where Breuning worked at the time. Breuning, on being questioned by the panel, acknowledged that none of the subjects came from Pittsburgh and said the data were from Chicago schools he studied in the mid-1970s. Breuning also told the panel that an unrevised progress report had been mistakenly typed up by his secretary, but the secretary "categorically" denied this. The panel decided Breuning's account was "entirely lacking in credibility" and concluded that his "preparation of two grossly distorted, but polished and detailed, progress reports could only have been a deliberate and intentional effort to mislead and deceive the Federal funding agency."

The panel also cast doubt on a review chapter in a widely used book, *Drugs and Mental Retardation*, which Breuning coedited with Alan Poling in 1982. The chapter reported the results of a questionnaire completed by 3496 subjects. The NIMH review panel observed that this obviously required extensive work by many people, but Breuning, on questioning, "was able to provide the name of only one person who was said to have participated in the project, and that person told Panel staff that he had no knowledge of the study." The computer center he said he used also had no record of such use. Neither of Breuning's coauthors had seen any raw data. The panel concluded: "the study described in this chapter was not carried out."

As has been the case in other instances of alleged fraud, the NIMH panel saw "a pattern in which Dr. Breuning induced others, who sometimes had little or no involvement, into coauthorship." It said that major coauthors had not examined primary data, and peoples' names were sometimes put on manuscripts without their knowledge.

The panel winds up with the observation that Breuning's work has had a "significant impact" on his field, not only on the knowledge base but on social policies concerning the care of the mentally retarded, particularly since his contributions came "at a time when most clinical practice and administrative policy bearing on drug treatment were based primarily on anecdote and clinical impression." It says "there can be no question that states (e.g., Connecticut) have

amended policies governing treatment practices in an effort to be consistent" with Breuning's research findings.

As for "conclusions regarding others," the panel commends Breuning's former colleague Sprague for bringing the matter to NIMH's attention but questions his judgment in "uncritically" including Breuning's publications in his progress reports, and expressed concern at his "failure to adequately oversee" the subcontract with Pittsburgh.

The report also says the University of Illinois, which conducted an early investigation, "failed to conduct a thorough" one. The University of Pittsburgh, which had to be repeatedly prodded by NIMH to expand the scope of its investigation, finally came up with a thorough one after Breuning left. The panel says "if the initial University of Pittsburgh investigating committees had been given a more comprehensive charge, significant time would have been saved."

The report will not be released and possible sanctions considered until comments have been received and the final version has been reviewed by the director of the Alcohol, Drug Abuse and Mental Health Administration, NIMH's parent agency. ■

CONSTANCE HOLDEN

CERN Panel Backs New Accelerator

Geneva

Following President Ronald Reagan's recent decision to support the construction of the Superconducting Super Collider (SSC), a committee consisting of representatives of 14 member states of the European Laboratory for Particle Physics (CERN) has voiced its support for the construction of a smaller European machine that would carry out experiments in a lower—but still comparable—energy range at a fraction of the cost.

For several years, European physicists have been pointing out that proton-proton collisions at energies slightly below those planned for the SSC could be achieved by the addition of a superconducting proton collider on top of the magnets currently being installed in the 27-kilometer-circumference tunnel that has been built to house the Large Electron-Positron Collider (LEP) (*Science*, 24 May 1985, p. 968).

Meeting in Geneva last month, the committee, known formally as the Committee of Council, agreed that the construction of an additional superconducting ring should be "seriously considered as a next step in the exploration of the microcosmos." The committee added that the resulting hadron collider would be "an essential step forward" since, even though the planned energy range of 7 to 9 TeV per beam was lower than the 20 TeV planned for the SSC, it covered an energy range where interesting new phenomena should occur.

Detailed technical and financial specifications of the new accelerator, which would be able to use many of the existing facilities at CERN, are currently being studied by a committee set up by the council in June 1985 under the chairmanship of Carlo Rubbia to look at the long-term future of the laboratory.

Recent studies have shown that 10-tesla dipole bending magnets could be used to achieve collision energies of 17 TeV with what is described as a "respectable" collision rate, and tentative plans have been discussed for establishing a European magnet development program to work toward this goal.

CERN director Herwig Schopper said last week that the decision by the Committee of Council to endorse a close study of the project represented an important step in a process that is now expected to lead to a definite proposal being put forward to the European member governments. While welcoming President Reagan's decision on the SSC as "a recognition of the importance of the field" he added that "if Europe does not do anything, it is in danger of being left behind."

Schopper said that, from a technical point of view, it would be possible to construct the new superconducting ring at the same time that measures are being taken to upgrade the LEP ring, which it is currently hoped to do in the early 1990s. Making use of existing facilities, in particular the LEP tunnel, could mean that the costs of the collider would be one-third to one-fifth those of the SSC.

Politically, however, much will depend on the report of a separate committee established by the member governments last year to look at the potential consequences of Britain's threatened withdrawal from CERN. Furthermore, signs are beginning to emerge that Britain is not the only major CERN contributor faced with a major spending squeeze on high energy physics.

Cutbacks in France's research budget are reported to be threatening the Atomic Energy Commission's Department of Elementary Particle Physics with having to withdraw from several international experiments—including those planned for the proton-electron collider HERA in Hamburg, for which France has already contracted to finance the superconducting magnets at a cost of $11.5 million. ■ DAVID DICKSON

A $2.5-Billion Acid Rain Plan

The Reagan Administration is proposing that the federal government spend $2.5 billion over the next 5 years to demonstrate technologies for controlling sulfur dioxide and nitrogen oxide emissions from coal-burning power plants. The President's proposal comes in the wake of complaints from the Canadian government that the White House was not living up to its January 1986 pledge to spend $5 billion to clean up pollution that is thought to be the cause of acid rain in Canada.

The aim of the program, says Energy Secretary John Herrington, is to move "the nation toward a new generation of more efficient, economical options" for controlling pollution related to the combustion of coal. The program is not meant to break new ground on the research front, says Herrington, just demonstrate the feasibility of "new" technologies, which officials have yet to identify.

The demonstrations could include advanced methods for treating coal prior to combustion, improved combustion methods, and post-combustion cleanup. The first projects would be selected in April 1988. Utilities and industry sponsors of the selected projects would be required to match federal subsidies.

Under the Administration's plan, $150 million allocated to projects in the department's ongoing "Clean Coal Technology" program would be credited toward this new demonstration initiative. Another $350 million remaining in the Clean Coal Technology Reserve Fund for the second phase of the original program would be diverted to the President's new effort for use next year. The Administration also would ask Congress for an advance appropriation of $500 million in FY 1989 funds. This would enable the Department of Energy (DOE) to make contractual commitments in 1988 for a total of $850 million. The plan assumes that the nation's next President, who takes office in January of 1989, will agree to spend $1.5 billion more on the demonstration program between 1990 and 1992.

In making its decisions, DOE is expected to consider those technologies that produce the largest reductions of sulfur and nitrogen at the lowest cost. At the President's request, Herrington is forming a panel to advise him on the selection of projects. He has promised that it will be a broad-based group that includes representatives from federal agencies, the Canadian government, and the public. ■ MARK CRAWFORD