Army Clears Redfield—But Fails to Resolve Controversy

After 8 months of looking into allegations that Lt. Col. Robert Redfield "overstated" results from the trial of a therapeutic AIDS vaccine, the United States Army has concluded that the evidence "does not support the allegations of scientific misconduct" and that there "is no requirement for adverse action." But the conclusion of the investigation is unlikely to end the controversy dogging Redfield, the Army's leading AIDS researcher. One reason is that several of Redfield's colleagues claim the investigation failed to resolve some of the issues that triggered the inquiry. Some of the same researchers argue that the Army cannot investigate its own top scientists objectively. "The Army had the fox in the hen house for this one," says one Redfield collaborator who insisted on not being quoted by name. "I'd like to see another formal investigation done by the Navy, Air Force, and Army together."

> **"I had updated information on all 26 patients before [Redfield] went to Amsterdam."**
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> **—Maryanne Vahey**

Dissatisfaction with the report among some Redfield colleagues isn't the only reason the subject is likely to remain in the spotlight. The Redfield investigation has attracted congressional attention because it has become entangled in the story of a controversial $20 million appropriation passed last October for large-scale testing of a therapeutic AIDS vaccine made by Connecticut's MicroGeneSys (see ScienceScope, p. 819). This vaccine, known as gp160, is the one Redfield has been testing, and he is widely viewed as the main scientific proponent of the product. Representative Henry Waxman (D–CA) on 16 July asked Health and Human Services Secretary Donna Shalala for a briefing about the $20 million appropriation and its aftermath. And a spokesman for Rep. Gerry Studds (D–MA) says he is "looking into" the Redfield investigation itself.

While the Army's investigation exonerates Redfield on the scientific misconduct charge, it slaps him and his colleagues at the Walter Reed Army Institute of Research (WRAIR) on the wrist for having a "close relationship" with a nonprofit group, Americans for a Sound AIDS/HIV Policy (ASAP), which the investigation found has received scientific information from WRAIR "to a degree that is inappropriate."

The main conclusions of the investigation were announced to WRAIR staff last month, but no final report was made public. *Science*, however, obtained more than 200 pages of the final investigatory report and related documents through a Freedom of Information Act (FOIA) request. Those documents provide the first look at the Army's procedures in the Redfield investigation. Because many portions of the documents were deleted (the Army claimed it deleted only material that invaded privacy or "would have a chilling effect on open agency communications"), they do not provide detailed explanations of how the Army reached some of its conclusions.

The trigger for the investigation was a presentation Redfield made on 21 July 1992 at the international AIDS conference in Amsterdam—the huge annual conference that brings together thousands of AIDS researchers and journalists (*Science*, 6 November 1992, p. 883). According to Redfield's presentation, a preliminary analysis of patients who received the gp160 vaccine showed that the amount of HIV in their blood—their "viral load"—stabilized or decreased. In comparison, a study of untreated patients who were part of a "natural history" study of disease progression showed that during the same period their viral loads had, on average, increased. Many researchers believe changes in HIV load will have clinical significance for infected people, but the correlation has yet to be proved, and Redfield made no claims in Amsterdam about the efficacy of the vaccine in preventing AIDS symptoms. Nevertheless, he did claim that the difference in viral load between the two groups was statistically "significant," news that was greeted with enthusiasm by many AIDS researchers.

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> **—Robert Redfield**

Among some of Redfield's colleagues, however, his Amsterdam presentation was met with skepticism. A key concern was that Redfield had presented viral load data from only 15 of 26 patients who had been treated with gp160. Among the allegations the Army investigation considered is whether Redfield selected specific patients to make the results of the treatment appear more impressive.

Redfield's side of the story, as told to Army investigators, was that his colleagues had not supplied him with all the data for the 26 patients in time for him to present that information in Amsterdam. In a statement to Army investigator Col. Harry Dangerfield, Redfield asserts that as late as 15 July, he needed more data. "I became angry because I knew there were more data and because there were only 3 days before I left for Amsterdam," Redfield states. According to Redfield's statement, he decided to use the first 15 patients who entered the study and who had been studied for a minimum of 18 months. There "was no selection of data," the statement says.

That account, however, seems inconsistent with one given to Army investigators by WRAIR's Maryanne Vahey, who was running the quantitative polymerase chain reaction (PCR) assay that measured viral load in the study patients. In Vahey's statement to Dangerfield, she states that by 19 May—more than 2 months before Redfield's Amsterdam presentation—she had provided him with PCR data from all 26 patients. "I had updated information on all 26 patients before he went to Amsterdam," Vahey's statement to Army investigators says. She adds, however, that "having the data and making sense out of the data are two different things" and that Redfield may have had "clinical reasons" to separate some patients from the others.

The documents provided by the Army in response to *Science*'s FOIA request make it clear that investigator Dangerfield chose to accept Redfield's account of why he had presented data on only 15 patients in Amsterdam. "The data on the entire Phase I gp-160 vaccine cohort (n-26) were available after 24 July 1992 (after the presentation by [Lt. Col.] Redfield in Amsterdam)," reads Dangerfield's final report.

But the FOIA documents do not make clear why the Army chose to accept Redfield's account over Vahey's. None of the documents specifically address the point, and when *Science* asked why the investigation concluded that Redfield had not had the data on all 26 patients until 24 July, Army spokesman Chuck Dasey simply referred to the conclusion in the FOIA documents. Dasey also said Redfield and Vahey have been "advised" by the Army not to speak with the press.

The question of how Redfield had chosen

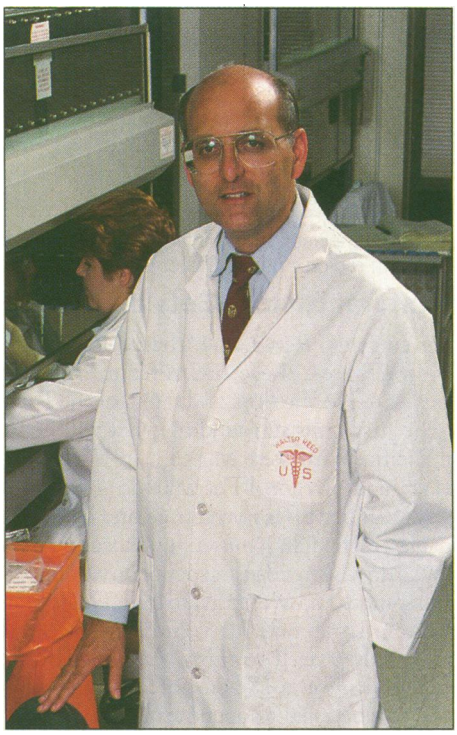
his 15 patients for analysis came up again in August 1992, after the Amsterdam meeting, when researchers at WRAIR and the Henry M. Jackson Foundation for the Advancement of Military Medicine—a private lab that has a multimillion-dollar contract to assist the military's AIDS research program—analyzed data from all 26 patients and found no statistically significant effect on viral load. Indeed, at an AIDS vaccine meeting sponsored by the National Institute of Allergy and Infectious Diseases from 31 August-3 September in Chantilly, Virginia, Redfield and Vahey both made presentations about the full data set of 26 patients; both presentations showed that the viral load data from all 26 patients indicated no statistically significant change with gp160 treatment. In addition, viral load data from the first 15 patients "were similar to those of the entire 26 patients," Col. Donald Burke, Redfield's boss, explained to Army investigators.

How had Redfield found statistical significance where there apparently was none? That question was first addressed by Burke in an informal inquiry. According to Burke's statement to Army investigators, he held a meeting with key Redfield collaborators on 28 August—just before Chantilly—and the attendees "all agreed that the data analysis [for Amsterdam] was done in haste, which resulted in some arbitrary criteria and methodologic errors." Burke concluded there had been no scientific misconduct, only scientific error. In his statement to the Army investigators, Burke said that after the Chantilly presentations, "I was satisfied that the data were presented openly and accurately and that the conundrum regarding the Amsterdam presentation had been put to rest and the case was closed."

The case was not closed. On 20 October, two Air Force AIDS researchers filed a formal complaint against Redfield that became the basis for the investigation. At the end of that process, Army investigator Dangerfield found that no misconduct had occurred and that any errors in Redfield's presentation were due to haste. Dangerfield's report cites Burke's 28 August meeting as one explanation for that conclusion. The meeting, wrote Dangerfield in his final report, "concluded that the disparities between the analyses of [Lt. Col.] Redfield at Amsterdam and that of others arose by presenting preliminary data from less than the full study...and data analysis done in haste."

That interpretation isn't likely to satisfy some of Redfield's colleagues. Three of them told *Science* they don't believe haste was the reason Redfield's analysis went awry. "I don't think it was a silly, sophomoric mistake because someone was rushed," contends statistician William McCarthy, who until 15 July was the chief of biostatistics at the Jackson Foundation—and has resigned in frustration because of what he calls "a lack of candor" about the gp160 data. "The way the data were presented [in Amsterdam] was not legitimate, and it made the data look better than it would have looked had there been an appropriate analysis," says McCarthy.

Two Redfield collaborators, who insist on not being quoted by name, also reject the notion that the Amsterdam presentation contained errors made in haste. Says one investigator: "I don't think it was a presentation made by a researcher in a hurry. The presentation was sloppy and irresponsible. You go out and make a statement as an authority, as a world-class scientist, and you're not super sure? Come on." Another collaborator says Redfield's presentation "was very well thought out."



HANK MORGAN

Military clearance. AIDS researcher Robert Redfield has just been cleared of scientific misconduct after an Army investigation.

The FOIA documents, however, also reveal that Redfield has supporters among his colleagues. One of the strongest statements of support came from Lt. Col. John Brundage, WRAIR's chief epidemiologist. Brundage, who helped Redfield with his statistical analysis prior to Amsterdam, told Dangerfield he had attended the presentation and "did not feel it was inappropriate." Brundage's statement also said he thought Redfield had benefited from Brundage's statistical "tutoring several days previously."

Although the Army's investigation of the Amsterdam presentation may not have satisfied all those close to these events, by 20 February of this year that phase of the investigation was closed. But because of concerns about WRAIR's relationship with Americans for a Sound AIDS/HIV Policy, the Army launched a second probe—of that organization and its ties to Army researchers.

ASAP, which educates religious groups and aims to speed development of treatments, became snared in the Redfield investigation because of concerns that Redfield supporter W. Shepherd Smith Jr., the group's president, was improperly contacting WRAIR researchers to discuss unreleased gp160 data. Like Redfield, Smith has been a strong supporter of gp160 therapy, testifying before Congress and even staging an investment seminar in Los Angeles for potential MicroGeneSys investors. Redfield is chairman of ASAP's advisory board, which his chief collaborator, Deborah Birx, also serves on.

Specifically taken up in the Army probe was a phone call ASAP's Smith made to Vahey on 24 August, in which they discussed the gp160 study and interpretations of the early results. Vahey was concerned enough about "the command of the data that Mr. Smith exhibited" and his opinions about how the gp160 data should be presented that she wrote a memo for the record, which the Army supplied to *Science*.

Smith told *Science* any implication he was trying to influence the analysis of gp160 data was "absolutely false," stressing that his reason for calling had "nothing to do with the Amsterdam presentation." Smith said he believes ASAP was brought into the Army's investigation because "nothing was found in the first report and that wasn't satisfactory to people who had staked their careers on finding something wrong with Bob Redfield."

The Army investigation concluded that WRAIR provided ASAP with "scientific information that was not widely disseminated" and recommended that ties between the two groups "be severed so there is not an appearance of endorsement or favoritism."

Severing the tie between ASAP and Army researchers, however, won't end the questions still swirling around Robert Redfield, the gp160 vaccine, and MicroGeneSys. Although Redfield's supporters are pleased with the outcome of the investigation, many of Redfield's colleagues and others close to the investigation are not fully satisfied. A new investigation could be launched by a joint Army-Navy-Air Force team. Congress might also hold hearings on the issue.

On the scientific front, gp160 will also come up again soon, since the military is staging a trial of the MicroGeneSys vaccine in more than 600 infected people. The trial will compare treated patients to a randomized control group receiving a placebo. A first look at the blinded data is scheduled for the fall. But, like every other new piece of information about gp160, those preliminary results are far more likely to start debate than to end it.

–Jon Cohen