

ECOLOGY

Biosphere 2 Turned Over to Columbia

Biosphere 2, the 12,750-square-meter enclosed ecological laboratory in the Arizona desert, is taking what managers hope will be the final step toward becoming a serious research enterprise. The facility's inauguration in 1991 was followed by two troubled years, marked by criticism from the scientific community, technical stumbling blocks, and management conflicts. But after 18 months of oversight by a group of outside scientific advisers, Biosphere 2's managers have decided that outside control is the right medicine, and they're now taking a stronger dose: turning the entire facility over to Columbia University.

In a 5-year agreement announced on 13 November, Columbia's Lamont-Doherty Earth Observatory will gain control over the facility's scientific and educational initiatives and its profit-making visitor's center. The partnership, says Biosphere 2's research director, biogeochemist Bruno Marino, is "the last step in the scientific metamorphosis we've been trying to produce." Researchers who hope to work in the facility will be applying to funding agencies for grants to expand the existing programs of research on ecology, biogeochemical cycles, and global change.

Columbia's involvement with Biosphere 2 dates to August 1994, when it and other universities, research institutes, and national



Columbia west. Biosphere 2, in Oracle, Arizona.

laboratories formed a consortium to develop a research plan for the floundering facility (*Science*, 19 August 1994 p. 1027). At the time, Biosphere was under fire for its emphasis on what many scientists considered a New Age stunt: sealing human "Biosphereans" into the facility to grow their own food and recycle their own wastes. The research plan called for scientists to study the normal workings of the ecosystem to establish a baseline (*Science*, 13 January, p. 169).

Marino says that work has been completed over the last year. Now, says John Mutter, director of Lamont-Doherty, the owner, Texas billionaire Ed Bass, and the scientists involved have agreed that "to use the facility to its fullest extent, the management should lie with an academic institution

that has experience managing research."

Lamont-Doherty geochemist Wallace Broecker will direct the research agenda from Columbia, while Marino will stay on as the on-site research director. Together the two hope to exploit Biosphere 2's size, engineering sophistication, and the diversity of plants it houses to study how different ecosystems respond to changes in climate and carbon dioxide levels. "This system could be used to look into the future of the vegetation of the planet," says Marino.

He and his colleagues hope funding agencies will agree. Most support for research at Biosphere once came from Bass and the company formed to run Biosphere, Space Biospheres Ventures. Now, Marino says, researchers will "concentrate very heavily on external funding, just like any other intense, vigorous research enterprise." Mutter says that while Bass will provide operating expenses for the 5-year period, the facility will gradually move toward sustaining itself, through external research funding and profits from educational and visitor programs.

Those programs, too, are in for some changes. Mutter says the new management may convert the part of the facility where the Biosphereans lived into a "hands-on" science center devoted to how the Earth works as a system. The education program may also be expanded to offer seminars and "semesters abroad." Columbia may have gained not only a new laboratory, but a campus as well.

—Lori Wolfgang

ESPIONAGE

American Spied for East Germany

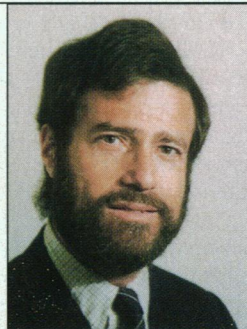
BERLIN—Last week, a Stuttgart court convicted an American systems analyst, Jeffrey Schevitz, of spying for the former East Germany. Schevitz admitted to passing information about West Germany's nuclear policies to the Stasi intelligence agency in the East between 1977 and 1990. But the five-judge panel—probably influenced by Schevitz's plea for mercy and by the intelligence information's limited importance—suspended the 18-month sentence, allowing Schevitz to go free on 3 years' probation.

After the verdict, 55-year-old Schevitz told *Science* he was relieved to avoid a prison term, although judges ordered him to pay court costs and a \$10,000 fine to a charity. Related charges against Schevitz's wife, Beatrice Altman, were dropped earlier after she agreed to pay a \$7000 fine.

Schevitz had access to inside information about German nuclear and nonproliferation policies through contacts with government and other officials when he taught at Berlin's Free University during the late 1970s, and in his later job as a systems analyst

at the government's Nuclear Research Center in Karlsruhe from 1980 to 1994 (*Science*, 30 September 1994, p. 2002). German prosecutors presented evidence that Schevitz—under the code name "Robert"—had handed over information in meetings with Stasi operatives and by depositing notes in a "dead-letter drop" on the express train from Basel to Berlin, where Stasi agents collected the papers. While prosecutors said the information was of little importance, they said Schevitz had received \$23,000 from Stasi sources.

The Stuttgart panel's chief judge, Helmut Holzappel, described Schevitz as "an agent for idealistic reasons. In Schevitz's favor was the fact that he admitted at least part of his guilt." During the trial, Schevitz conceded that he had passed along some low-grade information to the Stasi, but he claimed he had actually been working as a double agent for the U.S. Central Intelligence Agency (CIA), in an operation designed to reveal



Convicted. Schevitz says he was a double agent.

Stasi methods. The CIA denied that assertion, and a German expert testified that he saw "no indications" that Schevitz had spied for the CIA. "Despite the verdict, I was impressed by the objectivity and fairness of the German judges," Schevitz said this week.

In a tearful plea for leniency near the trial's end, Schevitz told the court that his goal had been to try to help defuse potential conflicts between East

and West Germany during the tense 1970s and '80s. Earlier in his academic career, Schevitz had been an anti-Vietnam War activist while he held teaching positions at Washington University in St. Louis and the University of California, Berkeley. Now Schevitz says he is collecting unemployment compensation and looking for a job in Germany. "When you have values, you have to do something about them," he said. "I don't regret what I did."

—Robert Koenig

Robert Koenig is a writer in Berlin.