marine ecology of Monterey Bay and Japan's Sagami Bay. "We really are learning more by being able to look at two systems," he says.

The OD21 program would mark a new level of international cooperation. Although Japan plans to shoulder most of the estimated $500 million cost of building the ship, it is seeking contributions for equipment, instrumentation, and the $100 million in annual operating expenses. So far, those would-be partners say they are impressed. "[JAMSTEC] has shown an incredible understanding of what it takes to make an international program work," says Michael Purdy, head of the U.S. National Science Foundation's division of ocean sciences.

In a model now under review, Japan's OD21 ship and a second ocean drill ship, intended for shallower holes and supplied by the United States, would operate under the direction of international scientific committees. The program would be similar to the current Ocean Drilling Program, which expires in 2003. The shallower drill ship would be particularly useful for extracting records of climate change, while the deeper drill ship would be more important for geological studies. The key question is whether the international community can support two ships.

Another form of cooperation involves welcoming more foreign scientists to JAMSTEC. One likely recruit is James Hunt, now at JAMSTEC on an STA fellowship. After studying midwater biology at MBARI, Hunt came to JAMSTEC for comparative studies of Monterey and Sagami bays and says he would like to join the JAMSTEC staff when his fellowship ends this fall. "I feel like I'm getting in on the ground floor with midwater research at JAMSTEC," he says. "To me, that's a great opportunity."

Most scientists agree that JAMSTEC is well positioned to make significant contributions to marine science. Woods Hole marine geologist Henry Dick, who is involved in planning a joint 1998 cruise, predicts the center will soon become a "first-rate research organization." For JAMSTEC officials, keeping up with their first-class fleet will be good enough.

–Dennis Normile

SCIENTIFIC MISCONDUCT

Allegations Prompt Debate in Germany

BERLIN—When a scandal involving allegations of falsified data in biomedical research broke this spring, Germany's scientific establishment was caught off guard: The revelations exposed possible flaws in the mechanisms for monitoring research and investigating claims of fraud. Now, Germany's main granting agency—the Deutsche Forschungsgemeinschaft (DFG)—has decided to establish an international commission of scientific experts to discuss research standards and the procedures for scientific oversight in Germany and internationally.

"The complexity and the growing international competitive pressure in many scientific fields may be increasing the temptation to use deception and falsification" in research, said the DFG's president, Wolfgang Frühwald. He will ask the panel of seven to 10 prominent scientists to discuss safeguards against research fraud, as well as wider issues such as controls on co-authorship of papers. Many leading German scientists, however, have already spoken out against creating a national oversight body like the U.S. Office of Research Integrity (ORI).

The DFG commission is the latest in a series of panels formed in the wake of allegations that at least one researcher manipulated data while working at Berlin's Max Delbrück Center for Molecular Medicine in the mid-1990s, and possibly at other laboratories before and afterward. The alleged falsifications include data in an autoradiogram that was part of a 1995 paper, published in *The Journal of Experimental Medicine*, about transcription factors induced by tumor necrosis factor in human fibroblasts.

Marion Brach, a former group leader in a Max Delbrück research team under the general supervision of Friedhelm Herrmann—a hematologist and a leading genetic therapy researcher—has said she manipulated data in at least two research papers with Herrmann's knowledge. But Herrmann denies knowing of any data falsification until the matter was brought to his attention earlier this year. He describes himself as "primarily a clinician" who mainly set the direction for the research groups in his Max Delbrück team. Pending the outcome of the investigations, Herrmann has been suspended from his current position as a professor at Ulm University. Brach recently resigned as a professor at Lübeck University, and research grants to both scientists' laboratories have been frozen.

> **"If science does not [come up with solutions], then politicians must."**
>
> **—Klaus von Trotha**

Guido Adler, dean of Ulm's medical school and chair of the university's investigatory panel, says three other "witnesses" have also come forward in the case. The Ulm group is one of several panels—including those at Max Delbrück, Lübeck, and Freiburg University (where both Herrmann and Brach had worked before moving to Berlin in 1992)—that are reporting their findings to a national investigatory commission, headed by Wolfgang Gerok, a professor of internal medicine at Freiburg. Gerok, whose commission will present its own report this month, told *Science* that the current scandal is "clearly the most serious such case in Germany" in many years.

Meanwhile, the DFG's international panel, whose members are expected to be named soon, will be asked to discuss why the peer-review system did not detect the alleged data manipulation earlier; why supervising scientists who have limited knowledge of the research are sometimes listed as co-authors of papers; whether cooperating groups are under sufficient supervision; and whether fast-moving developments in certain fields are making it difficult for reviewers to verify the quality of new publications.

The panel is expected to issue its report by next spring, and its findings and recommendations are likely to intensify the ongoing debate about research oversight. Both Frühwald and Hubert Markl, president of the Max Planck Society—Germany's premier scientific research organization—argue that Germany should avoid setting up a government agency to monitor research integrity. "We have to bite the bullet" and squarely face the potential problem of manipulated research data, said Markl. "But it would be a bad idea to try to imitate [ORI]"—partly because its centralized powers would clash with the German system, in which individual states have jurisdiction over universities. Markl said Max Planck is developing new guidelines and procedures for detecting, assessing, and punishing research fraud. Its plans are to be presented this fall to Max Planck's board.

"It is important that we rethink the system," said Detlev Ganten, director of the Max Delbrück Center and a member of the national investigative panel. But while scientists including Adler believe that "peer review remains the most effective instrument" for evaluating research, some officials are concerned that science may not be effectively policing itself. Says Klaus von Trotha, science minister for the German state that includes Ulm: "I have appealed to science to make a systematic inquiry and come up with solutions. If science does not do so, then politicians must."

–Robert Koenig

Robert Koenig is a writer in Berlin.