OCEAN SCIENCE

Panel to Prepare Plan for Underwater Network

SAN JUAN, PUERTO RICO—After a decade spent standing at the dock, U.S. marine scientists are getting ready to launch a network of ocean observatories. Drawing on 5 days of talks at a meeting here attended by more than 300 scientists and engineers, an independent panel will assemble a detailed plan for a $200 million project. If all goes well, the National Science Foundation (NSF) hopes that the plan can sail through Congress in time for funding to begin in 2006. "We have a bakery full of ideas [that] we have to get down to a breadbox," says Larry Clark, an administrator in NSF's ocean sciences division.

Researchers have long craved an escape from the confines of ship-based expeditions that record mere snapshots of long-term ocean changes. Now improved technologies, including buoys that can bounce data off satellites and sensors that can pump vast streams of information through sea-floor cables, may sate their hunger. Three years ago, NSF endorsed the concept of building a trio of new facilities that would continuously pump marine data directly to researchers over the Internet. One observatory would consist of a set of movable buoys moored deep in the open ocean. Another would expand a nascent network of near-shore sensors. The third, and most expensive, element would be a regional observatory that would spread cable-linked sensors and automated submersibles over thousands of kilometers of sea floor.

Scientific seascapes. Researchers are refining plans for ocean observatories, such as this cabled network.

However, some scientists—including biologists and physical oceanographers—have been lukewarm to the idea. They fret that it might not work and fear that it could drain funds from existing projects. "Chunks of the ocean science community are still figuring out where they fit in," says oceanographer Kenneth Brink of the Woods Hole Oceanographic Institution (WHOI) in Massachusetts.

Last week's meeting* was an opportunity to share ideas, said organizers Meg Tivey of WHOI and Oscar Schofield of Rutgers University in New Brunswick, New Jersey. The concepts came in many sizes and shapes. One popular one is to use sea-floor sensors to monitor colliding crustal plates or to dispatch robotic submersibles to check on an erupting underwater volcano. "You could capture events that are rare but important," says Brink. Other scientists offered ideas for studying extremophile bacteria living within the crust. A few pushed for installing coastal sensors first, because they might produce a quick payoff for policymakers concerned about pollution or fisheries. "We got an incredible amount of advice," says Schofield.

The next step is to produce a detailed plan that sets priorities—and totes up what it will all cost. A new NSF-funded planning group ▶

* ORION Workshop, 4 to 8 January (www.orionprogram.org).

INDIA

Book Triggers Attack on Research Institute

NEW DELHI—To the scholar, the pen may be mightier than the sword. But last week a Hindu mob in western India inflicted serious damage on more than a millennium of scholarship by ransacking the Bhandarkar Oriental Research Institute in Pune. In addition to the loss of rare and valuable manuscripts and other artifacts, the unprecedented attack on a prominent research facility is being mourned as the latest example of the country's growing religious intolerance.

At a loss. Staff of the Bhandarkar Oriental Research Institute survey mob damage.

The rioters belonged to Sambhaji Brigade, a right-wing Hindu nationalist organization. According to local police, the attack was carried out in response to "disparaging" remarks about the lineage of a legendary Hindu king, Chhatrapati Shivaji, contained in a 2003 book by James Laine, a professor of religious studies at Macalester College in St. Paul, Minnesota. The book analyzes Hindu-Muslim relations through a look at Shivaji's attempts to reduce the influence of Islam in 17th century India. The mob appears to have targeted the institute because Laine's book thanks senior manager Shrikant Bahulkar and other institute researchers for their help. Laine declined comment.

On the morning of 5 January, according to witnesses, about 150 people barged into the institute, snapped the telephone lines, ransacked the cupboards, tore thousands of books, and damaged the writings on palm leaves, rare artifacts, and old photographs in the library. The mob also grabbed several rare books, say police, who have charged 72 persons with trespass, rioting, and arson.

The independent institute, founded in 1917 and with a staff of 50 scholars, has a collection of 120,000 books covering Indian culture, Indus Valley civilization, Sanskrit texts, and writings on the Ayurveda, the ancient Indian system of medicine. The damage to the building and equipment is estimated at $250,000, according to trustee M. K. Dhavalkar, but much of the collection is in disarray and may be difficult or impossible to repair. The government has provided $30,000 in relief, and local citizens have already raised $6000.

In November Laine's publisher, Oxford University Press (OUP), apologized for the book and pulled it off the shelves. "It was creating some problems," says OUP's Susan Froud, "so we decided to withdraw it from the Indian market. It's a rather sensitive matter." The book remains available on the publisher's Web site.

—PALLAVA BAGLA

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led by Brink hopes by the end of the year to have nailed down a half-dozen compelling science goals. That would be followed in late 2005 by a polished blueprint for surmounting a host of technical and logistical challenges, from developing sensors and information systems to finding enough ship time. "We know how to build ships and launch satellites, but nobody's ever put together an integrated ocean-observing network," says Clark.

By then, NSF hopes to have secured funding for the first observatories. Ultimately, researchers hope to link the pioneering U.S. sites to similar facilities elsewhere, creating a truly global ocean-observing system.

In the meantime, there is work to do. "Even if you could put all that infrastructure out there now," notes Tivey, "we wouldn't have the instruments to hang on it."

–DAVID MALAKOFF

EARTH SCIENCE

Panel Urges Shakeup of NOAA Research

Under assault from Congress, U.S. oceanic and atmospheric science programs appear headed for a significant shakeup. An advisory panel last week recommended that the National Oceanic and Atmospheric Administration (NOAA) strengthen its sprawling research effort by consolidating some laboratories, appointing a new high-level research czar, and crafting a new long-term science plan.

With a research budget of $650 million, NOAA is one of the world's largest funders of marine and atmospheric science, ranging from efforts to predict the weather to projects that tally fish populations. Recently, however, critics have stepped up complaints that some NOAA science programs are lackluster and disjointed. Last year, Congress asked the agency to examine ways to streamline—or even eliminate—one of its major research arms, the $350 million Office of Oceanic and Atmospheric Research (OAR), which administers roughly half the agency's R&D funds, operates a dozen laboratories, and employs about 900 people. To conduct the review, NOAA Administrator Conrad Lautenbacher last October created a five-member team of three outside experts and two senior agency officials; the panel presented its preliminary findings on 6 January in Washington, D.C.

In an often bluntly worded report,* the panel concluded that NOAA sponsors a lot of important science but has failed miserably in explaining itself to Congress and the public. "There is no clear rationale for where some research programs are located … or how they fit into the big picture," said climate scientist Berrien Moore III of the University of New Hampshire, Durham, the lead author of the draft report. The panel urges the agency to quickly write a comprehensive strategic plan for the next 20 years. And although the panel rejected the idea of dismantling OAR and giving its programs and labs to other offices, it urged NOAA to appoint a high-ranking "science czar" able to set research priorities and move money among programs. The agency also needs to consolidate some of its 40-plus laboratories, the panel said, focusing first on OAR's dozen facilities, six of which are in Boulder, Colorado. The panel stopped short of laying out specific mergers or program shifts, however, saying it will provide more detail in a final report due in May that will form the basis for NOAA's response to Congress.

The advice is drawing generally positive reviews, although some observers predict that several recommendations—such as merging labs and appointing a science czar—are likely to get bogged down in bureaucratic and political wrangling. Still, Lautenbacher says, "most folks would look at the principles outlined in the report and find them pretty reasonable." And new OAR head Richard Rosen, who was on the panel, predicts that some change "is inevitable."

–DAVID MALAKOFF

OAR's Laboratories

Lab	HQ
Great Lakes Environmental Research	Ann Arbor, MI
Aeronomy	Boulder, CO
Climate Diagnostics Center	Boulder, CO
Climate Monitoring and Diagnostics	Boulder, CO
Environmental Technology	Boulder, CO
Forecast Systems	Boulder, CO
Space Environmental Center	Boulder, CO
Atlantic Oceanographic and Meteorological	Miami, FL
National Severe Storms	Norman, OK
Geophysical Fluid Dynamics	Princeton, NJ
Pacific Marine Environmental	Seattle, WA
Air Resources	Silver Spring, MD

* *Report of the NOAA Research Review Team* (review.oar.noaa.gov/Docs/Reports/revised12-18report_for_web.pdf)

CREDIT: (TOP) PAVALLA BAGLA

ScienceScope

Activists Ask Indian Court to Stop GM Crop Trials

NEW DELHI—A private citizens' group has asked India's Supreme Court to stop all field trials and commercialization of genetically modified (GM) crops until the government improves its regulatory and monitoring systems.

Geneticist Suman Sahai, who heads Gene Campaign, says that none of the data relating to the country's first-ever commercial Bt cotton crop in 2002 has been made public. "Our biggest concern is the lack of technical competence and the shocking absence of transparency" in the government's decision-making process, she says. But a Department of Biotechnology official says that the data "cannot be released, as it may infringe upon the intellectual property rights of the companies."

The Supreme Court has given no indication of when or how it will rule on Gene Campaign's request, which was filed 7 January. If it accepts the case, data from the trial are likely to become public as part of the hearing.

–PALLAVA BAGLA

Researchers Issue Ultimatum

PARIS—At least 6000 French scientists are threatening to resign en masse unless the government makes good on promises to bolster science budgets. The researchers have signed an Internet petition launched last week by top scientists including geneticist Axel Kahn, head of the Cochin Institute of Molecular Genetics in Paris, that demands that the government quickly restore subsidies to research agencies, increase recruiting of young scientists, and hold a summit on the future of French research. The signers have given the government 2 months to "give a strong signal through action, not words, that research is a priority," Kahn says.

The government is taking the threat seriously. Research minister Claudie Haigneré initially criticized the protest, but she later promised to meet soon with petition leaders. Meanwhile, Bernard Larrouturou, the new director of CNRS, France's major research agency, conceded that research budgets would be tight this year. But it would be worse, he noted, if the government hadn't recently agreed to pay the agency nearly $220 million it has been owed since 2002 by the end of next year.

–BARBARA CASSASUS

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