

► in place by 1 January 2014.

"Europe is now ahead of the United States in this area," says Lisa Bero, a pharmacologist at the University of California, San Francisco, who studies bias in scientific publication. "We're all waiting", she adds, to see what will unfold. "This is all very new."

Bero says that the move towards more transparency is a victory. But "there's going to be a lot more battles" over how information should be released, how detailed it should be, who should control its release and who should have access to data that might reveal identities of trial participants.

Campaigners such as All Trials, an international group launched in January to put pressure on governments and regulators, have demanded that public registration not be limited to trials used in drug-approval applications and should include full methods and results of past and current trials.

Many medical researchers would be satisfied if summary results were made public, ideally as peer-reviewed papers. But some want full release of the detailed clinical study reports that drug companies submit to regulatory agencies. Researchers who conduct meta-analyses by pooling data from multiple trials also want access to anonymized data on individual participants.

In 2010, the European Ombudsman ruled that detailed data should not be seen as commercially confidential. That helped to drive development of the EMA's policy, which will increase access to such information. But patient-level data are unlikely to be placed wholesale into the public domain, and companies, researchers, trial funders and patient groups disagree on who should decide which researchers can access them.

Groups also wrestle over who will enforce the rules. The UK Health Research Authority, which oversees standards and regulations in medical research, is assessing the practicalities of assigning the job to the same ethics committees that approve clinical trials.

Kay Dickersin, director of the Center for Clinical Trials at Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland, says that serious legal clout is needed when wrongdoing is exposed by transparency. If people have misrepresented studies, fines are not enough, she adds: for serious infringements, "someone has to go to jail". ■



The R/V *Falkor* can deploy remotely operated submersibles.

#### OCEANOGRAPHY

# Private research ship makes waves

Falkor plots a fresh course for ocean studies with Google cash.

BY ALEXANDRA WITZE

**L**ife onboard the R/V *Falkor* is a far cry from the spartan existence endured by most academic oceanographers on research trips. The privately run research vessel features a sauna, a glassed-in lounge and a helicopter pad to be kept clear at all times for VIP guests.

All of which isn't too surprising, as two of the VIPs are the *Falkor*'s benefactors: Google board chair Eric Schmidt and his wife Wendy. The 83-metre former fishery-protection vessel was retrofitted by the Schmidt Ocean Institute of Palo Alto, California, at a cost of

US\$60 million. Supporters say that it adds a new capability to US oceanography's fraying infrastructure: an ability to take on riskier projects more quickly than federal agencies can.

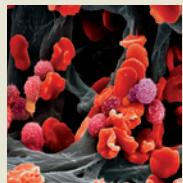
"Our hope is to accelerate the pace of research," says Wendy Schmidt. "It's not science as usual." The ship's first full-length science cruise ends on 29 March when it returns to port in St Petersburg, Florida, after a three-week trip.

For some oceanographers, the arrival of the *Falkor* — named after a lucky dragon in the film *The NeverEnding Story* — is a stroke of luck. The US research fleet is ageing and shrinking: down from 26 ships in the University-National Oceanographic Laboratory System in 1995 to

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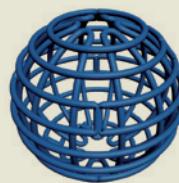


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19 today. Federal funds for ship time are dwindling as well. For the first time in 15 years, for example, microbiologist Julie Huber of the Marine Biological Laboratory in Woods Hole, Massachusetts, is relying entirely on private money for her studies. A slot on the *Falkor* in September will allow her to test a microbial sampler on the sea floor — technology development that she says would have progressed more slowly with incremental federal grants.

There is a long history of millionaires dabbling in oceanography without doing much publicly available science. Hollywood director James Cameron has a small group of researchers advising him on his deep-sea dives, such as his record-breaking trip last year to the Mariana Trench. He is donating the submersible used on that dive to the Woods Hole Oceanographic Institution (WHOI) in Massachusetts, although he is holding back the discoveries from that plunge for use in a feature film.

The Schmidt Ocean Institute, established in 2009, aims to reach a wider array of scientists. A parallel set-up, the Marine Science and Technology Foundation, also headed by Eric Schmidt, supports the development of oceanography tools, such as a video recorder for plankton and a surface-water analyser powered by wind and solar energy. "They

are accelerating change in a field which was already changing gradually," says Kim Juniper, an oceanographer at the University of Victoria in Canada, who will lead a *Falkor* cruise around Vancouver Island in August to study waters with low oxygen levels.

The *Falkor* can also carry equipment from other organizations. In 2014, for instance, it will take the WHOI's deep-diving Nereus robot to the Mariana Trench.

Given the ship's Internet ties, it is no surprise that managers favour projects emphasizing open data. Charles Paull, a marine geologist at the Monterey Bay Aquarium Research Institute in Moss Landing, California, is leading the current cruise in the Gulf of Mexico, where his team is mapping an underwater limestone cliff that bears marks from the meteorite impact 65 million years ago that is thought to have killed the dinosaurs off. Paull plans to post his maps on Google Earth within two months — not the two years that most oceanographic data take to trickle out.

Data sharing is not a requirement for research proposals, says Victor Zykov, Schmidt Ocean's director of research, but those that include an open-data component are ranked higher than those of equal scientific value that do not.

*Falkor* cruises are scheduled after the

proposals have been peer reviewed by independent scientists. For the round of cruises beginning in 2014, the 48 applications made were whittled down to seven projects. Sixty-one applications have arrived for the cruises beginning in 2015, with a final selection of seven or so expected late this summer, says Zykov. "It's hard to deny that interest is growing," he says. Wendy Schmidt adds that if the cruises turn out good science, the institute may consider adding a second ship in the future.

One catch is that although ship time is provided for free, researchers must find a way to fund their salaries and any post-cruise science. For some this isn't too much of a problem. Chris German at the WHOI, for instance, used leftover NASA money from an earlier cruise to pay for his portion of a *Falkor* trip this summer to the Caribbean, where he will use Nereus to hunt for new hydrothermal vents.

Just about the only other US ship allowed such unfettered exploration is the US National Oceanic and Atmospheric Administration's *Okeanos Explorer*, German says. But the *Falkor*, with fewer education and outreach obligations, can operate with more focus. "It's a new way of doing business," he says. "The model is theoretically good, but how it's going to work out remains to be seen." ■ SEE EDITORIAL P.410

## PUBLISHING

# Sham journals scam authors

*Con artists are stealing the identities of real journals to cheat scientists out of publishing fees.*

BY DECLAN BUTLER

**S**cientific publishing, meet cybercrime. Two reputable European science journals have fallen prey to identity theft by criminals who have created counterfeit journal websites. These online doppelgängers have duped hundreds of researchers into paying author fees, with the ill-won gains being funnelled to Armenia.

Editors of the victim journals first learned of the scam last year, but their attempts to put a stop to it have so far come to nothing. The crooked websites are masquerading as *Archives des Sciences*, a multidisciplinary journal founded in 1791 and published by the Society of Physics and Natural History of Geneva (SPHN) in Switzerland; and *Wulfenia*, a botany journal published by the Regional Museum of Carinthia in Klagenfurt, Austria.

The scammers attend to the closest of details, displaying on multiple websites not only the titles of the authentic journals, but also their impact factors, postal addresses and

international standard serial numbers — the unique codes used to identify journals.

Editors of the authentic publications fear that the ruse has tainted the reputations of their journals.

"Victims are regularly contacting me to ask about the status of their papers: they transfer money and don't see their papers published," says Roland Eberwein, editor-in-chief of the authentic *Wulfenia* and head of the Botanic Center at the Carinthia museum, which includes a herbarium of more than 200,000 specimens.

"We are currently wasting our time trying to fight these people," says Robert Degli Agosti, editor-in-chief of *Archives des Sciences* and a plant biologist and electrophysiologist at the University of Geneva.

Neither of the authentic journals has its own dedicated website, making them easy prey for

imposters. In response to the scam, however, the SPHN and the Carinthia museum have put warning notices on their home pages, and *Wulfenia* has started publishing its back issues online.

The forged sites look so convincing that they initially misled Thomson Reuters, a metrics company based in New York that produces the Scientific Citation Index and compiles journal impact factors.

But by May last year, the company had become suspicious, writing to the SPHN for an explanation of the "huge discrepancy" between the content of articles in print issues of *Archives des Sciences* — which Thomson Reuters indexes — and on the website. It noted, too, a discrepancy in publishing frequency: "We receive and index 2 issues of each volume for each year, while the website is now listing 12 issues per volume, one each month," it wrote to the society.

One of the imposters had even persuaded Thomson Reuters to include a link to the false journal in its list of indexed publications; the company moved swiftly to ►

