

ONLINE

Opening Science to the Internet

By THOMAS LIN

For centuries, scientific research has been done in private, then submitted to journals to be reviewed by peers and published.

But to many scientists, the system seems hidebound, expensive and elitist. Peer review can take months, journal subscriptions can be prohibitively costly, and a handful of gatekeepers limit the flow of information.

It is an ideal system for sharing knowledge, said the quantum physicist Michael Nielsen, only “if you’re stuck with 17th-century technology.”

Dr. Nielsen and other advocates for “open science” say science can accomplish much more, much faster, in an environment of friction-free collaboration over the Internet. And, despite the skepticism of many scientists, their ideas are catching on.

Open-access archives and journals like arXiv and the Public Library of Science (PLoS) have sprung up in recent years. GalaxyZoo, a citizen-science site, has classified millions of objects in space, discovering characteristics that have led to a raft of scientific papers. And a social networking site called ResearchGate — where scientists can answer one another’s questions, share papers and find collaborators — is rapidly gaining popularity.

Editors of traditional journals say open science sounds good, in theory. In practice, “the scientific community itself is quite conservative,” said Maxine Clarke, executive editor of the commercial journal *Nature*, who added that the traditional published paper is still viewed as “a unit to award grants or assess jobs and tenure.”

Dr. Nielsen, 38, who left a successful science career to write “Reinventing Discovery: The New Era of Networked Science,” agreed that scientists have been “very inhibited and slow to adopt a lot of online tools.” But he added that open science was coalescing into “a bit of a movement.”

Science is moving to a collaborative model, “because it works better in the current ecosystem, in the Web-connected world,” said Bora Zivkovic, a chronobiology blogger who is a founder of the annual ScienceOnline conference.

ResearchGate, the Berlin-based social network for scientists, is the brainchild of Ijad Madisch, 31, a Harvard University-trained vi-

Researchers share online, bypassing peer review.

rologist and computer scientist. “I want to make science more open,” he said.

Started in 2008 with few features, it was reshaped with feedback from scientists. Its membership has mushroomed to more than 1.3 million, Dr. Madisch said, and it has attracted several million dollars in venture capital.

The Web site is a sort of mash-up of Facebook, Twitter and LinkedIn, with profile pages, comments, groups, job listings, and “like” and “follow” buttons, although only scientists are invited to pose and answer questions. It also offers a simple yet effective end run

around restrictive journal access with its “self-archiving repository.”

Since most journals allow scientists to link to their submitted papers on their own Web sites, Dr. Madisch encourages his users to do so on their ResearchGate profiles.

Greg Phelan, chairman of the chemistry department at the State University of New York, Cortland, used the site to find new collaborators, get expert advice and read journal articles not available through his small university.

Changing the status quo — opening data, papers, research ideas and partial solutions to anyone and everyone — is still far more idea than reality. As the established journals argue, they provide a critical service that does not come cheap.

“We have to cover the costs,” said Alan Leshner, executive publisher of the nonprofit journal *Science*.

Those costs hover around \$40 million a year, paying for more than 25 editors and writers, sales and production staff, and offices in North America, Europe and Asia, plus print and distribution expenses.

Peer-reviewed open-access journals, like *Nature Communications* and *PLoS One*, charge their authors publication fees — \$5,000 and \$1,350, respectively — to defray their more modest expenses.

Dr. Madisch acknowledged that he might never reach many of the established scientists for whom social networking can seem like a foreign language or a waste of time. But wait, he said, until younger scientists weaned on social media and open-source



TIMOTHY FADEK FOR THE NEW YORK TIMES

Ijad Madisch, standing, founded ResearchGate, a Facebook-like social network where scientists can submit their work.

collaboration start running their own labs.

“If you said years ago, ‘One day you will be on Facebook sharing all your photos and personal information with people,’ they wouldn’t believe you,” he said. “We’re just

at the beginning. The change is coming.”

Dr. Leshner agrees that things are moving. “Will the model of science magazines be the same 10 years from now? I highly doubt it,” he said. “I believe in evolution.”

For \$2 a Star, an Online Retailer Gets 5-Star Reviews From Buyers

By DAVID STREITFELD

In the brutal world of online commerce, where a competing product is just a click away, retailers need all the help they can get to close a sale.

Some anonymously posting their own laudatory reviews. Now there is an even simpler approach: offering a refund to customers in exchange for a write-up.

By the time VIP Deals ended its rebate on Amazon.com in late December for its Vipertek leather case for the Kindle Fire, hundreds of reviewers had proclaimed the case a marvel worth five stars.

Fake reviews are drawing the attention of regulators. “Advertising disguised as editorial is an old problem, but it’s now presenting itself in different ways,” said Mary K. Engle, the Federal Trade Commission’s associate director for advertising practices. “We’re very concerned.”

Researchers like Bing Liu, a computer science professor at the University of Illinois at Chicago, are also taking notice, trying to devise mathematical models to unmask the bogus endorsements. “More people are depending on reviews for what to buy and where to go, so the incentives for

faking are getting bigger,” said Mr. Liu. “It’s a very cheap way of marketing.”

By late January, 310 out of 335 reviews of VIP Deals’ Vipertek case were five stars. VIP Deals, which specializes in leather tablet cases and stun guns, denied it was quietly offering the deals. But three customers said in interviews that the offer was straightforward: the VIP page was selling a cover

they credited my account,” she said. “You think it’s unethical?”

The merchant did not respond to further requests for comment.

Under F.T.C. rules, when there is a connection between a merchant and someone promoting its product that affects the endorsement’s credibility, it must be disclosed. In one case, Legacy Learning Systems, which sells music instructional tapes, paid \$250,000 last March to settle charges that it had hired affiliates to recommend the videos on Web sites.

Amazon, sent a copy of the VIP letter by The New York Times, said its guidelines prohibited compensation for customer reviews. A few days later, it deleted all the reviews for the case, then it took down the product page. A spokeswoman declined to say exactly what happened to VIP’s products, like the Vipertek VTS-880 mini stun gun, which all also disappeared after receiving nearly all five-star reviews.

“I bought one for my wife and decided to let her try it on me,” one man wrote in his review.

“We gave it a full charge and let me just say WOW! Boy do I regret that decision.”

Regulators take aim at fake product endorsements.

for under \$10 plus shipping (the official list price was \$59.99). When the package arrived it included an invitation “to write a product review for the Amazon community.”

“In return for writing the review, we will refund your order so you will have received the product for free,” it said.

Anne Marie Logan, a Georgia pharmacist, was suspicious. “But



Bing Liu, a computer science professor, is trying to unmask fake product reviews.



JOHN GRESS FOR THE NEW YORK TIMES