

Digital Commons @ Ryerson



RYERSON'S INSTITUTIONAL REPOSITORY

Open Access Week



OPEN ACCESS WEEK



October 19-23, 2009
openaccessweek.org

What is Open Access



[Open Access \(Store Front\)](#) by [Gideon Burton](#)

Subversive Proposal

American News

SCIENCE

DARWINISM AND THE INTERNET

Why scientific journals could go the way of the pterodactyl

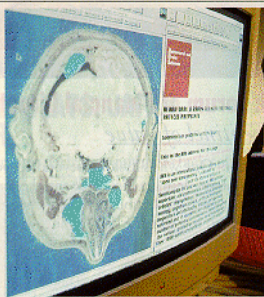
Stovan Harnad does not look like a revolutionary. But this distinguished researcher and director of the cognitive sciences center at Britain's University of Southampton admits he's urging the virtual overthrow of one of science's most cherished institutions: print journals. With Internet usage exploding, Harnad and a growing legion of scientists say the venerable scientific journals are just too slow. They are urging scientists to post research papers electronically first, and only then submit them to journals.

It's a radical notion that is being advanced at conferences and, of course, on the Net. If it succeeds, it could dramatically change—and perhaps weaken—the traditional process by which refereed periodicals vet research and shape entire fields of science.

ON GUARD. Not surprisingly, the publications already are pulling up the drawbridge. On June 22, an editorial in the *New England Journal of Medicine* will lay out its stance. *NEJM* will "apply the same rules to Internet that apply to publishing anywhere else," says editor Jerome P. Kassirer. Translation: It won't consider articles previously published, including on the Internet.

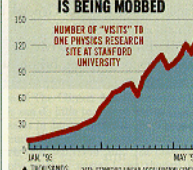
This is no small dispute. The development of electronic publishing is rocking the \$4 billion technical publications industry, which includes roughly 50,000 peer-reviewed serials. Journals want to retain their prestige and franchises, yet economists—and agitation by scientists—are pushing them toward electronic formats. "Costs are up, postage is up, and ad revenues are down," notes Larry E. Joyce, president of publishing and multimedia for the American Medical Assn. "You can't grow enough new revenue sources. We've got to look at electronics as the future."

There already are 150 online-only scientific journals, and dozens of publica-



HOW ONE WEB SITE IS BEING MOBBED

NUMBER OF "VISITS" TO ONE PHYSICS RESEARCH SITE AT STANFORD UNIVERSITY



tions now exist in both print and electronic form. In the coming weeks, some of the nation's best-known journals are going electronic. On June 23, *Science* will post its first Web page, offering a table of contents to the current issue, an editorial, and a discussion forum for scientists. Later, it hopes to add other features not found in the magazine. By August, the *Journal of the American Medical Assn.* will electronically publish abstracts of current articles and archived back issues. Britain's Royal Society of Chemistry is developing an electronic journal that will let readers rotate three-dimensional graphics of molecules on their computer screens—a valuable tool for chemists and biologists.

But the trend that's raising hackles is the spread of "preprint" Internet servers—there are about 70 up so far—offering scientific papers that have not yet been formally published. Pioneered by physicists, the preprints' speedy dissemination of ideas is being adopted by scientists in other fields. Patricia Kreitz, a librarian at the Stanford Linear Accelerator Center (SLAC) in Palo Alto, Calif., says "the influence of the

Web on the physics community has been phenomenal," decreasing travel and increasing collaboration. Monthly "hits," or requests for SLAC preprint data from physicists, have grown about sixfold since 1993 (chart).

BUM STEERS. What worries some scientists is the potential for the publication of flawed research if the vetting process used by the journals is bypassed. Nobel laureate and Rockefeller University geneticist Joshua Lederberg routinely posts works-in-

progress on his own Web page, but he worries that so-called barrier Net publishing could result in "low credibility, instant regurgitation." Journals such as *Science* and *NEJM* have intense and sometimes protracted vetting procedures that reject 90% of the articles submitted. Losing such procedures may not be so bad in some disciplines—an error in a physics string theory will eventually be found and corrected. But in medicine, wide and rapid dissemination of bad advice could literally be deadly.

Still, scientists such as Los Alamos physicist Paul Ginsparg contend that peer review can be just as rigorous and unbiased—and far more efficient—when done electronically. Indeed, Harnad's review, *Psychology*, is both electronic and refereed. And many editors of traditional journals admit they'll have to adapt. "We've only begun to scratch the surface of how much more effectively we can communicate," says Floyd E. Bloom, editor of *Science*. The way scientific use of the Net is growing, he and other journal editors will soon find themselves scratching pretty hard.

By Joan O'C. Hamilton in San Francisco, with Heidi Dawley in London

What you need to Know



- Mandates
- Copyright
- Author Rights
- Research Impact

Mandates



- Canadian Breast Cancer Research Alliance
- Genome Canada
- Ontario Institute for Cancer Research
- Canadian Cancer Society
- National Cancer Institute of Canada
- Canadian Health Services Research Foundation
- Canadian Institutes of Health Research
- Michael Smith Foundation for Health Research
- Fonds de la recherche en sante Quebec
- National Research Council of Canada

Other Mandates



Some Institutional Mandates

- Athabasca
- Queen's (thesis mandate)
- University of Calgary: Library and Cultural Resources

Some International Mandates

- National Institutes of Health
- Wellcome Trust
- CERN

Copyright



91% of publishers permit some form of self-archiving

[SHERPA/RoMEO](#)

ROMEO colour	Archiving policy
<u>green</u>	can archive pre-print <i>and</i> post-print or publisher's version/PDF
<u>blue</u>	can archive post-print (ie final draft post-refereeing) or publisher's version/PDF
<u>yellow</u>	can archive pre-print (ie pre-refereeing)
<u>white</u>	archiving not formally supported

Author Rights



- Notwithstanding any terms in the Publication Agreement to the contrary, AUTHOR and PUBLISHER agree as follows: 1. Author's Retention of Rights. In addition to any rights under copyright retained by Author in the Publication Agreement, Author retains the right to (i) reproduce the Article in any material form for non-commercial purposes; (ii) to perform the Article in public for non-commercial purposes; (iii) to convert the Article by preparing derivative works; (iv) to make a sound recording, cinematographic film or other contrivance by means of which the Article may be mechanically reproduced or performed for non-commercial purposes; (v) to reproduce, adapt and publicly present the Article as a cinematographic film for non-commercial purposes; (vi) to communicate the work to the public by telecommunication for non-commercial purposes; and (vii) to authorize others to make any non-commercial use of the Article so long as Author receives credit as author and the journal in which the Article has been published is cited as the source of first publication of the Article. For example, **Author may make and distribute copies in the course of teaching and research and may post the Article on personal or institutional Web sites and in other open access digital repositories.**
- [SPARC Canada author addendum](#)

Research Impact



- Open access articles attract up to 336% more citations

Digital Commons



Digital Commons @ Ryerson