

LETTERS

How to Advance Info Revolution: Develop Tip-Top Physics Database, Get More Journal Subscribers

Information Revolution" by Mark Burgess in your November 1996 issue (page 77) calls for a new, academically respectable profession of knowledge organization, the practitioners of which would systematically map the great wilderness of "known" scientific results in all disciplines. This idea should hardly be revolutionary half a century after Vannevar Bush¹ first popularized it, but our experience suggests that indeed it is.

As the US partners in TIPTOP, an international physics information con-

sortium² intended to address some of the very issues Burgess raises, we spent much of the last year trying to drum up support for a free hierarchical subject catalog of the on-line literature. We contacted 100 physics departments and 170 university libraries about their interest in such a project. Most of them were interested—but none were interested enough to provide any money to support the project. It might be thought that this reflected either the shoddiness of our work or the exorbitance of our demands, but in fact in almost no case did the discussion of a dollar amount even arise, and many reputable schools said they would be quite happy to let us use their name and their computers as long as they didn't have to pay us.

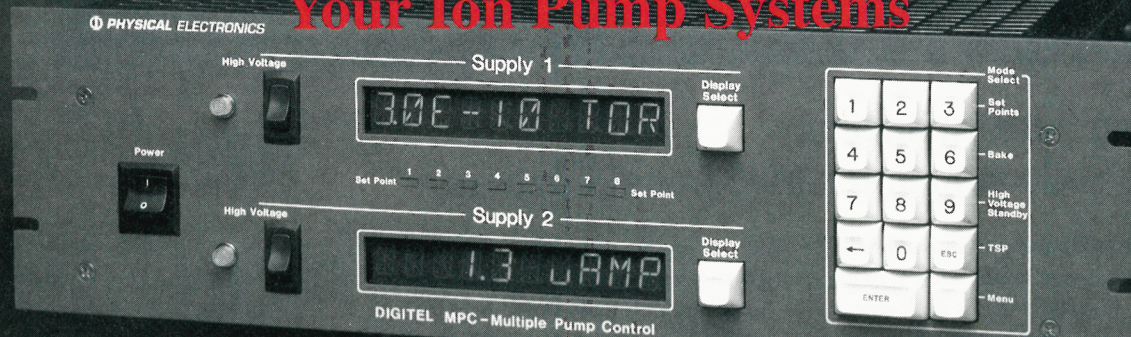
Most people, including both physicists and librarians, seemed more bewildered than anything else; what we

proposed did not fit well into their preexisting categories of research, education and archiving. As one might guess from reading Burgess's piece, computer scientists who became aware of our project were far more supportive.

Apart from the shock of the new, there seem to be two problems besetting any attempt to organize a knowledge base for physics. One, mentioned by Burgess, is that people with technical knowledge who spend their time consolidating the known rather than expanding the frontier are viewed as second-raters without the right stuff for research, however great the intellectual challenges they face. The other is economic—the tragedy of the commons. It became very obvious to us that many schools did not want to pay for developing something that others could then access freely, and which they themselves could access freely if it were developed

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elsewhere. As a result, at least so far as our specific effort goes, the knowledge base is being developed nowhere: the tragedy of the commons.

References

1. V. Bush, *Atlantic Monthly*, July 1945, p. 101. Also available on the Web at <http://www.theAtlantic.com/atlantic/atlwweb/flashbks/computer/bushf.htm>.
2. TIPTOP—The Internet Pilot to Physics—maintains a Web home page at <http://www.tp.umu.se/TIPTOP/>.

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Mark Burgess makes the point that he reads his copy of *Physical Review Letters* like a magazine and couldn't imagine doing so if it were only available on screen. I want to make the further point that the way one reads one's own issue of *Physical Review* is not the same as the way one reads the issue in the library. The idea that you can go over to the library and successfully do all of your "Physical Review thinking" at one time is wrong! The brain doesn't work that way. Individuals are short-changing their physics by not subscribing. I challenge them to try a paper subscription and find out for themselves.

I further believe that some of the other problems Burgess mentions (particularly fragmentation and specialist languages) would be addressed by reader feedback if only there were more readers. I know the "Save Our Trees" people will hate me, but I think the current trend toward declining paper subscriptions needs to be reversed.

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CESR Should Be Praised, not Buried

The article by Joel Butler and David Quarrie (October 1996, page 50) provides a concise and valuable overview of the problems facing high-energy physics (HEP) experiments in the realm of data acquisition and analysis. The sidebar on page 55, however, doesn't match the standard set by the body of the article. In listing HEP facilities worldwide, it fails to mention the world's highest-luminosity electron-positron collider, CESR, which involves approximately 300 physicists and houses CLEO II, the most productive HEP experiment in the US (accounting for

22% of the papers relating to US experimental HEP that have been published in *Physical Review* and *Physical Review Letters* in recent years).

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BUTLER AND QUARRIE REPLY: Our not mentioning CESR and CLEO was an egregious but inadvertent omission that evidently occurred when we were reorganizing the list of HEP facilities. One of us (Butler) finds this especially embarrassing, having just completed a three-year term on the CESR/CLEO Program Advisory Committee.

We are very aware of the program's successful computing initiatives, such as the use of processor farms and the NILE project, as well as that CESR will generate data at rates very similar to BaBar's and will present the CLEO experimenters with equally challenging data acquisition problems.

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Sound Example of Reversed Acoustics Goes Back to Rayleigh

Readers of Mathias Fink's "Time Reversed Acoustics," published in your March issue (page 34), may be interested in an elementary example of this phenomenon described by Rayleigh. In discussing the Doppler shift, Rayleigh pointed out that if the listener moves away from the sound source at a speed v exceeding the speed of sound a , "Sounds previously excited would be gradually overtaken and heard in the reverse of the natural order. If $v = 2a$, the observer would hear a musical piece in correct time and tune, but *backwards*" [emphasis in original].

Reference

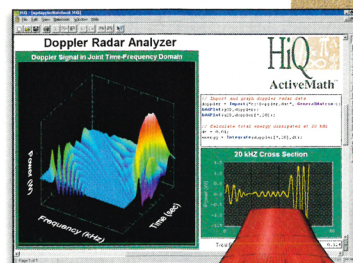
1. J. W. Strutt, Baron Rayleigh, *The Theory of Sound*, 2nd ed., Dover, New York (1945) (reprint of 1894 ed.), vol. 2, p. 154.

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