ard Entlich, senior systems analyst. "Searching is actually very visual."

You can also print out what you've found. That may be nice for the scientist but it is one aspect of virtual libraries that makes publishers quite nervous. They worry about bootleg journal copies cutting into their circulation rates, and they're not sure how libraries will keep these virtual journals from becoming part of a pirate publishing industry.

Those issues are of particular concern at the Cornell project, which is being carried out in concert with ACS, the journals' publisher. The same situation applies to another online library project called TULIP, or The University Licensing Program, which is taking shape with the help of the journal publisher Elsevier. TULIP is furthest along at CMU, where researchers have access to seven Elsevier artificial intelligence journals plus the *IEEE Computer Journal* and CMU computer science monographs.

Cornell, CMU, and other institutions are considering several different ways to protect the rights of the journal publishers. Restricting laser printing of journals within the institution by proper authorization and validation (computer IDs or library card) may be one way to solve the problem. And some pay-for-use systems will probably emerge, especially if the library offers access to journals to which it doesn't already have a subscription.

Printing out articles means one other thing: Virtual libraries won't, alas, eliminate the cluttered office. "We do not have strong evidence that people want to leave their hard copies," says CMU's head librarian Charles Lowry. "You put up a Novell token ring and what do people do? They print out their e-mail!"

Nobody really knows for sure how people are going to respond to online reading until the systems are up and running for some time. Users may go to reading off the screen, or they may print and then read. It's hard to resist having something to hold in your hands—just ask Cornell's Entlich. Searching his desk for handouts, he throws up his hands and exclaims, "In the midst of an electronic library project, I'm buried in paper!"

–Larry Krumenaker

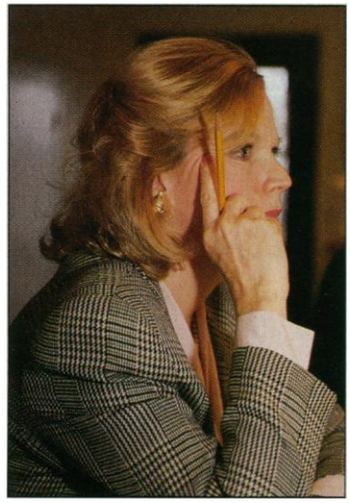
Larry Krumenaker is a science writer based in New Jersey.

BIOMEDICINE

Healy Slams Clinton's NIH Budget

Bernadine Healy may be on her way out as director of the National Institutes of Health (NIH), but she is not leaving quietly. Last week, with just over a month left in her tenure, Healy lashed out at the Clinton Administration for effectively cutting the NIH budget.

The venue was the House of Representatives Appropriations Committee, which, along with its Senate counterpart, will ultimately set the agency's 1994 budget. In her final appearance before the committee, Healy quickly departed from her prepared remarks, which had been approved by the Administration, to blast Clinton's 1994 request for NIH. "I am deeply troubled that in 1994, NIH faces a budget that is a contraction in virtually every category," she said. If Congress cannot substantially increase the Administration's $10.67 billion request for NIH, the word "devastating," she said, "would be mild."



RICK KOZAK

Not fading away. Outgoing NIH Director Bernadine Healy.

The problem, Healy said, is that the budget is considerably worse than it looks. Taken at face value, it gives NIH a 3.2% increase over last year. But most of the new money, Healy argued, is actually accounting tricks and funding for a few favored programs. As an example of both, she cited a special $216 million breast cancer research request. Designed to continue a program that Congress had for political reasons placed in the Army's accounts last year (although the 1994 request is for new money, and does not affect the Army program), it bears the traces of its military roots: Like many Defense Department programs, it is "forward funded," meaning that NIH must distribute the money over the average 4-year life of the grants it will fund. NIH can spend only one-quarter of the money in 1994.

Breast cancer isn't the only research area that makes the budget picture seem brighter than it is, said Healy. The Administration has also requested $214 million in research on such topics as high-performance computing, advanced materials, and health-care reform, none of which has been an NIH focus before (*Science*, 23 April, p. 483). After you have accounted for all these favored programs, the core basic research programs at NIH are actually due for a 1% cut, Healy said. Factor in the biomedical inflation rate, and the cut grows to slightly more than 4%. As a result, Healy said, NIH has decided to eliminate the usual cost-of-living increases for its grants next year (which left her "very distressed") so that the agency can keep the number of new and competing grants at about this year's level of 5600.

Congress, which has traditionally rescued NIH from budget predicaments, may not be able to offer much help this year. In fact, it may make things worse. "The president's budget could be the high-water mark," says David Moore, assistant vice president for government relations at the Association of American Medical Colleges. The reason: With Clinton's budget still some $8 billion over the deficit-reduction targets set by Congress, something will have to give when Congress splits up the budget pie among the various appropriations committees next week. The most likely casualty, according to an appropriations committee staffer, is the allocation for the Labor, Health and Human Services, and Education committee, which, besides including the NIH spending, has the largest single share of the federal budget.

Healy had several explanations for NIH's troubles. Early in her testimony, she pointed the finger at the Congressional Budget Office, which in its February report listing options for deficit reduction suggested that a cut in NIH's budget could "be justified by its rapid growth in recent years." And Healy complained that NIH "doesn't have a seat at the table" to head off such threats.

For example, Healy said that neither she, nor any other senior NIH staff, has been asked to participate in the topic of the month: health-care reform, which may dictate budgets for years to come. Nor has there been a champion for biomedical research in NIH's parent agency, the Department of Health and Human Services (HHS), or at the White House, according to HHS officials. Philip Lee, the incoming HHS assistant secretary for health, could be such a champion, but he has not yet been confirmed by the Senate.

All that may simply be the price of transition. Indeed, HHS Secretary Donna Shalala, testifying at an earlier appropriations hearing last week, hinted that NIH may fare better once a new director is in place. She said she was "reviewing recommendations" for NIH which may, HHS sources say, include more power for the NIH director and a greater role in administration priority-setting. This may bode well for 1995, but neither Shalala, nor anyone else for that matter, was able to offer anything to temper what looks to be a dismal 1994 for NIH.

–Christopher Anderson