Briefings

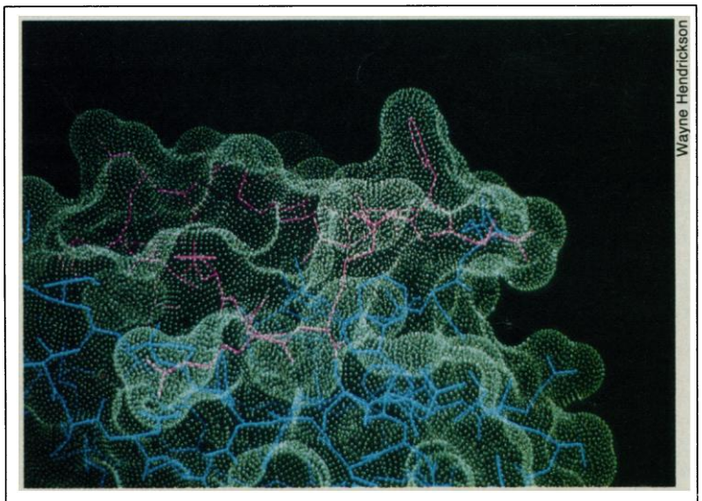
edited by CONSTANCE HOLDEN

Now Even Mummies Go Digital

New frontiers in mummy research are being probed at the University of Illinois at Urbana-Champaign, where the secrets of a 2000-year-old mummy are being exposed noninvasively by advanced technology.

In addition to x-rays and CAT scans, says archeologist Sarah Wisseman, supercomputers—which have not been used before in this kind of work—are being brought into the act. David Lawrence of the university's National Center for Supercomputing Applications is using two of them to construct rotating three-dimensional images from two-dimensional CAT scan slices of the head and torso beneath the mummy's wrapping.

Computers have also revealed in unprecedented detail such features as organ placement and details of the packing and embalming process—including the fact that the board under the mummy was bevelled and tapered to fit the body. But even supercomputers couldn't achieve clear enough images of the pelvic area to determine the sex of the mummy, a child who died of unknown causes at around age 8.



Wayne Hendrickson

AIDS virus target. *In order to enter and infect cells, the AIDS virus must bind to a cell surface protein called CD4. Now, two independent groups, led by Stephen Harrison of Harvard University and Wayne Hendrickson of Columbia University, have determined the three-dimensional structure of the portion of CD4 to which the virus attaches. Efforts have been made to treat AIDS patients with soluble forms of CD4 in hopes that they would bind to the virus and block its spread, but they have not been successful. Hendrickson says the new knowledge of the CD4 structure may help researchers design improved AIDS virus blockers. The structural determinations, supported by the Howard Hughes Medical Institute, were published in the 29 November* Nature.

Congress Hungry for NAS Advice

The National Academy of Sciences (NAS) and its siblings—the National Academy of Engineering (NAE) and the Institute of Medicine (IOM)—pride themselves on staying above the partisan fray. But their ability to tiptoe around political minefields is being increasingly tested as Congress is assigning the academies a growing number of studies, often on highly charged issues.

Although most academy studies are still done for executive branch agencies on topics that are usually carefully negotiated, the number of reports mandated directly by Congress grew from nine from the 96th Congress (1979-1980) to 24 from the just ended 101st. At the same time, relationships between Congress and the academies have been getting very chummy, with monthly lunches for congressional staffers and occasional weekend retreats for members of Congress.

But along with prestige and money, congressional interest brings pressure to play Congress's game. Take, for example, an IOM study for the Department of Energy, due this month, on a proposal to resurrect a dormant energy research reactor near Idaho Falls. Idaho wants $26 million from DOE to convert it into a cancer treatment center. DOE doesn't want to fund the project at this time, and its opinion has been supported by two advisory panels (*Science*, 13 April, p. 156). But the proposal is backed by Idaho's senior senator, James McClure (R), who wields substantial clout over the DOE budget. He has been hovering over the IOM and has instructed it to keep him abreast of "each phase" of the review.

Another delicate case involves the decision by the National Science Foundation to select Florida State University as home for a new magnet research center. The losing contender, the Massachusetts Institute of Technology, cried foul (*Science* 21 September, p. 1367), and MIT's friends in Congress ordered up an academy study of the fracas—later modified into a general report on NSF's peer-review system.

NAS President Frank Press insists that the academies know how to steer around the political shoals and can get legislators to rewrite charges if necessary to ensure that every project has "a sufficient technical basis" and a "minimum of value judgments or politics." While the broth served up by the academies is bland stuff by Washington standards, Congress's appetite for it grows ever larger.

French Genome Project

The French government has decided to launch a national genome research project. Hubert Curien, minister of research and technology, has announced that 50 million francs ($10 million) will be spent on the project next year and 100 million francs in 1992. That's in addition to the 150 million francs a year that the government is already spending on genome work. The United States, by comparison, is putting $136 million into genome work in fiscal year 1991.

The French human genome program will have three components. The largest will consist of mapping and sequencing genes that are expressed in humans. The second part will focus on the genomes of yeast,

Photos by Bill Wiegand/U. of Illinois

Sculptural interpretation of the head of a 7-to-9-year-old Egyptian who died around A.D. 100.

Archeologist Sarah Wisseman holds a plastic model of a mummy's skull, created with the aid of head scans and a computer.