

Wellcome Trust: Britain's Big Biomedical Spender

LONDON—Imagine the Howard Hughes Medical Institute surpassing the National Institutes of Health (NIH) as the largest funding body for U.S. basic biomedical research. You're right—it's unthinkable. NIH, with its \$9 billion annual budget, currently outspends Hughes by more than 20-to-1. But in Britain, such a watershed may be just around the corner: The Wellcome Trust—a foundation set up in 1936 under the will of Sir Henry Wellcome—is planning this summer to shift some of its \$12 billion of holdings in the Wellcome drug company into higher-earning stock. The result: The trust's current \$175 million-a-year budget could be almost tripled, giving it as much money to spend as the entire UK government Medical Research Council (MRC). It would also make the Wellcome Trust the world's largest biomedical foundation.

Cash-starved British scientists are already preparing to hail Wellcome as their savior. That's no surprise, given that the likely boost in trust spending translates into a staggering 30% rise in the total direct funding available for biomedical research in Britain: If Wellcome

does grow as expected, researchers are predicting a renaissance for British laboratories and the return of British scientists driven overseas. It's a chance for a "gear change" says Dai Rees, head of the MRC, if the scientific community responds to the flow of cash with imaginative new ideas.

But first, researchers are asking some key questions: Exactly how much is the Wellcome really going to spend? Can the trust grow without losing its current informal—and highly popular—style and becoming bogged down with bureaucracy? And how is the trust going to manage its relations with the MRC when, after years of competition as the

underdog, it will soon match it in financial clout? Right now, the Wellcome Trust is not the place to go for answers. Under strict instructions from her lawyers, Wellcome Trust director Bridget Ogilvie, a parasite immunologist, refuses to respond to the chorus of speculation about the trust's future income. But the figures speak for themselves: The trust intends to sell up to \$8 billion worth of its high-value, but low-yielding, Wellcome stock, and careful reinvestment could comfortably see the trust's annual earnings rise to more than \$450 million—almost exactly the

MRC's expected share of next year's UK science budget.

According to Rees, that means the trust may be forced to change its administrative style—he likens Wellcome to a "small family business" that is turning itself into a major corporation. But Roy Anderson, a mathematical biologist from London's Imperial College, and one of the seven trustees who decide Wellcome's strategy, says the trust hopes that there will be no change in the policy that lies at the heart of its special character. As Wellcome grows, he says, it will keep trying to recruit more top-quality scientists to

serve as administrators, rather than hand over the job to professional bureaucrats. Today, most of Wellcome's senior administrators remain active in science, working at their own labs for about one day each week. "We're part of the scientific community, and not separate from it," says Ogilvie.

These close contacts to the bench explain why Wellcome has often been fast to act on the scientific community's behalf: In the late 1980s, for example, recognizing that doctoral students were living close to the poverty line, it progressively raised the grants it gave them, eventually forcing the MRC to do the same. "There's no question that the administration

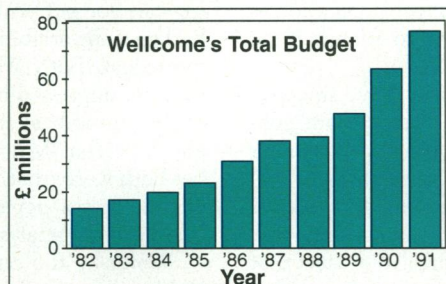
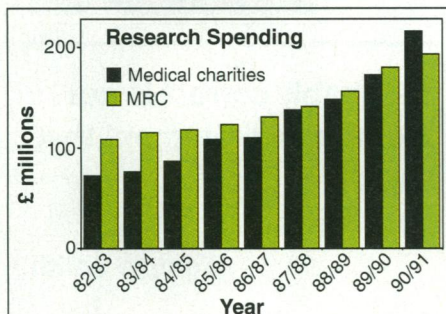
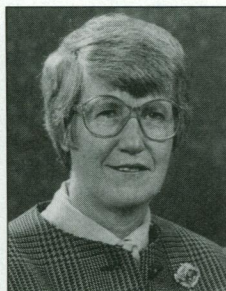
of the trust is faster and slicker [than the MRC's]," says Andy Tait, who heads a nine-person Wellcome-funded molecular parasitology unit at the University of Glasgow. One feature Wellcome officials are particularly proud of is that scientists are encouraged to send in two-page descriptions of their research plans before slaving over a full proposal, so they can be told quickly whether it's worth their trouble to continue. Rees accepts that it has been a popular system and says that, again, MRC may have to move in the same direction.

In Britain, where biomedical scientists form a relatively small community and researchers can be divided into those who have Wellcome grants and those who want them, few scientists are willing to criticize the trust. Even now, the trust is "so powerful that one cannot afford to upset them," says one researcher who relies heavily on Wellcome funding. This scientist, who spoke to *Science* on condition of anonymity, worries whether the trust is ready for its rise to power: "There have been some eccentric decisions.... I think that the Wellcome has got to review [its] whole structure... possibly by an outside group or person." But scientists like Oxford geneticist John Bell, who have sat on both the trust's and the MRC's grant committees, are adamant that there are no problems with Wellcome's peer review.

Equal partners. The immediate challenge for Wellcome is managing relations with MRC when the two organizations work the same territory as equals. "The MRC and Wellcome really will have to coordinate very carefully to avoid duplication," observes Howard Hughes president Purnell Choppin. But there's little to be learned from the U.S. experience, he says. Although Hughes has also grown rapidly, expanding seven-fold since 1984, NIH "really doesn't have to pay a whole hell of a lot of attention to what we're doing," because its budget is still so many times larger.

Rees acknowledges that his agency's relations with Wellcome haven't always been ideal. "Maybe we've been patronizing," he admits, while some of Wellcome's trustees have, in the past, shown "antipathy toward the MRC." And, although anxious to avoid wasteful duplication, the MRC cannot afford to cede territory to Wellcome. As a government agency, Rees says, the MRC must "retain an across-the-board capability" to respond to any future national health emergencies—like it did with the present AIDS epidemic.

Fortunately, the signs are that Wellcome and the MRC are now facing up to the need to work together. In London, at University College and at Hammersmith Hospital, for example, the trust is paying to add one story to multimillion-dollar laboratory blocks being built by the MRC. And earlier this month, the two organizations announced that they are



Fast lane. Medical charities have overtaken the MRC (top chart) thanks largely to growth in Wellcome's budget (bottom). Wellcome director Bridget Ogilvie (above).

setting up a joint working party to consider a proposal from gene sequencer John Sulston, of the MRC's Laboratory of Molecular Biology, to launch a major new genome research center in Cambridge (*Science*, 15 May, p. 958).

More complex patterns of cooperation are likely to emerge in the future. Although Wellcome's growth to MRC size will really shift the balance of spending power, the trust is not the only player overlapping MRC territory. Added together, the British medical research charities already outspend the MRC, and the trend is also for them to collaborate more closely. Last year, for example, Wellcome and the Cancer Research Campaign came together to create the \$9 million Institute of Cancer and Developmental Biology in Cambridge (*Science*, 26 July 1991, p. 377).

Ogilvie won't reveal Wellcome's plans, but she points out that past growth in the trust's budget changed Wellcome's role from concentrating on a small number of "Cinderella" disciplines that had been neglected by the MRC—tropical medicine, vision re-

search, and clinical epidemiology, for example—to encouraging scientists in almost any biomedical discipline to send in their best grant proposals. Today, researchers in front-line fields like molecular biology and neuroscience are as likely to send their proposals to Wellcome as to the MRC. At the same time, the trust has been moving toward funding progressively larger projects. Glasgow University and Imperial College, London, were among the first to benefit from this shift, winning multimillion-dollar funding for new parasitology research groups, in 1987 and 1990 respectively.

Focus on facilities. For purely administrative reasons, it may pay Wellcome to concentrate more of its budget into building world-class facilities in the hottest fields. Howard Hughes president Choppin also points out that investing in "bricks and mortar" poses fewer headaches than ramping up support for individual scientists, when a funding body is faced with rapid expansion. And support for new labs is certainly what British

scientists would prefer: "What we don't want is more short-term grants—a lot of the energies of people in the research community are used up in keeping things running from one 18-month grant to the next," says John Mulvey, a former Oxford University particle physicist who now runs the lobbying group Save British Science.

The one thing that Ogilvie is prepared to commit herself on is that the trust will continue its policy of trying to give researchers some long-term job security and boosting salaries—the low level of which is often cited by British expatriate scientists as one reason they left the country. "Here we have very skillful, highly dedicated laborers...who definitely should be paid properly, and be given the right kind of working environment," says Ogilvie. For the many young British scientists who find that meeting their mortgage payments is a bigger concern than designing their next experiment, that news may be the most welcome of all.

—Peter Aldhous

BIOTECHNOLOGY

Is the United States Losing its Lead?

The United States leads the world in biotechnology research and development today, but, like Avis, Japan is trying harder—and it could surpass the United States by the end of the decade unless the United States fights back with an Avis-like strategy of its own. So warns the National Research Council (NRC)* in a report that describes the Japanese approach: learning from the leader. The result, according to the study, which was carried out by a blue-ribbon panel of university researchers, biotech executives, and industry analysts, is "a prevail-

ing pattern of transfer of biotechnology developed in the United States to Japan during the past two decades." There's nothing particularly underhanded about the Japanese approach, though: They've simply invested in cutting-edge biotech firms and leading research universities and gleaned valuable information about how it's done on this side of the Pacific.

The NRC reached that conclusion by reviewing three dozen cases in which the Japanese invested in American biotech R&D. In fact, the most intriguing part of the report is the series of case studies in the appendix, some of which depict in detail how major Japanese firms have formed joint ventures with biotech companies and American universities. Some of the major examples are listed in the accompanying chart.

But the news isn't all grim: The U.S. government, the biotech industry, and universities can still protect the young industry's lead in the world marketplace. The report recommends that the biotech industry expand manufacturing and sales in Europe and Asia. It calls on the United States government to develop a technology strategy, including financial incentives to encourage innovation and more American investment in biotech, and to offer a "first-to-file" patent system in the United States like those already in place in Europe and Asia. That would replace the "first-to-invent" U.S. system, which is not recognized abroad, thus giving American researchers no patent protection overseas. Unless such moves, and others, are made, the report cautions, the results could be "significant and negative" by the turn of the century.

—Ann Gibbons

*"U.S.-Japan Technology Linkages in Biotechnology: Challenges for the 1990s," is available for \$19 (prepaid) plus \$3 shipping fee from the National Academy Press, 2101 Constitution Ave., N.W., Washington, D.C. 20418. Or call 1-800-624-6242.

SOME U.S.-JAPAN BIOTECH PARTNERSHIPS

Japanese Partner	U.S. Partner	Type of Linkage	Initial Terms of Investment
1. Kirin Brewery	Amgen	Joint Venture (1984)	Kirin paid \$12 million and Amgen paid \$4 million to develop and market two drugs jointly—erythropoietin (EPO) and granulocyte colony stimulating factor (G-CSF).
2. Hitachi Chemical Research	University of California, Irvine	New research facility (1988)	Hitachi built a \$12 million lab for its researchers on UCI campus; in return, UC's department of biological chemistry gets one floor rent free. Hitachi also supports an endowed chair at UC.
3. Kirin Brewery	Calgene	Joint Venture (1990)	Kirin paid \$2.5 million to develop and market jointly Calgene's pest-resistant potato seedlings and \$1.5 million for research on potato genes.
4. Japan Research Development Corp.	Michigan State University	Collaborative research (1990)	Japan to spend \$15 million over a 5-year collaboration on research on the evolution of microbes for environmental biotechnology.
5. Yamanouchi Pharmaceutical	Mt. Sinai Medical Center	Collaborative research (1991)	Collaboration to develop a transgenic mouse model exhibiting Alzheimer's disease.