RESEARCH FUNDING

Something Rotten in the State of Danish Research?

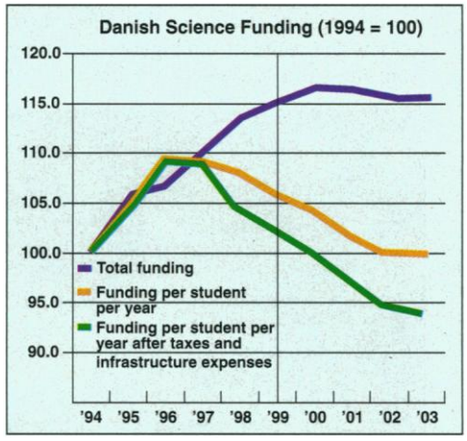
Researchers blame political indifference for a steady decline in the fortunes of Danish science over the past few years

COPENHAGEN—A drumbeat of public criticism has been building up here on a topic that's not often in the news: science funding. For years, the universities have watched their budgets dwindle, and academic and industry leaders have finally begun to speak out, filling the opinion pages of national newspapers. There is talk of the "Danish sickness": a gradual whittling away of the country's research capacity by governments that show little interest in science. "At a time when other countries are stepping up their efforts in research and education, Denmark risks becoming a second-rate nation," says University of Southern Denmark president Henrik Tvarnø. "Modern society is knowledge based, and Danish politicians must wake up to meet this challenge." And Børge Diderichsen, director of research for the pharmaceutical company Novo Nordisk, warns: "In some scientific disciplines, we are already experiencing difficulties in recruiting qualified local university graduates, and this could become a general trend."

Fueling this outburst is a report published last month, by the presidents of the country's 10 universities, which are all publicly funded. They conclude that although their nominal budgets have risen along with increasing student numbers, those budgets have been thoroughly eroded by rising costs. Between 1994 and 1998, the government provided the universities with a much-needed cash injection of $35 million for teaching and research. But, the presidents contend, a host of new taxes and related expenses imposed on the institutions during this period more than consumed the extra money. Furthermore, as part of general cuts in public spending, state university funding, apart from grants, dropped by 2% this year, and additional decreases have just been proposed in the budget for next year.

Science teaching is already suffering. A recent 15% cut in the staff of Copenhagen University's science faculty (*Science*, 2 April, p. 25) sent the number of undergraduate courses into a nosedive. The biology department has eliminated entire scientific fields, such as parasitology, and cut down on expensive activities, such as lab courses. The total number of students has remained unchanged, however, so the remaining courses are forced to admit many more students. The department of physics has maintained all its courses, but faculty members are devoting less time to research.

Academic and industry leaders lay part of the blame for this sorry state of affairs on the low political esteem in which science is apparently held. They point, for example, to upheavals at the Ministry for Research and Telecommunication, set up in 1993—supposedly to give research and development a higher profile. It has since been headed by six different ministers. "The ministry has been used as a political steppingstone, or for demotion purposes," says Søren Isaksen, who chairs the National Research Council, a ministerial advisory body. "The continuity needed to carry out reforms and deal with difficult issues demanding a lengthy political process [has] never existed."



Hidden costs. Despite apparently healthy increases, swelling student rolls, taxes, and other costs have whittled away research funding.

Isaksen hopes improvements will come with the appointment, in June, of Social Democrat Birte Weiss. She told *Science* that she considers her post a long-term engagement and lists among her most urgent problems "the fundamental need to make a university career attractive for the best and brightest."

Encouraging words, but researchers are looking for some sweeping changes. In a recent open letter to Weiss, for example, president of the Danish Technical University Hans Peter Jensen expressed concern about increasing political control of research funding, now running at about $1.5 billion a year. Figures published by the six research councils indicate that for years, peer-reviewed funding for basic research has been whittled away at the expense of research programs with aims that are politically defined. Such concerns were heightened when it was revealed that next year's national budget includes a proposed 11% cut in total funding for the research councils.

Engineer Jørgen Staunstrup of the Technical Research Council complains that "the many programs serving narrow political goals are favoring second-rate science, since funds are often allocated to projects which fit the programs and not to the best researchers." Endocrinologist Henning Beck Nielsen agrees: "In biomedicine, scientists are being forced away from doing basic work because more and more funding is directed at research with applied aspects." As chair of the Medical Research Council, Beck Nielsen is now preparing an investigation of this issue.

One of Weiss's first tasks is to begin reforming the university employment structure, which combines relatively few permanent positions with hardly any entry-level, tenure-track jobs. This provides little opportunity for young scientists to get onto the career ladder. Many Danish graduates do postdoctoral work at top universities in the United States and elsewhere but find few positions available back home when they finish. "There is a desperate need to create positions which allow the most talented young expatriate scientists to return and apply their skills in Danish academia," says molecular pharmacologist Thue Schwartz of the University of Copenhagen. Weiss says she will seek an appropriation earmarked for future recruitment that "should include making more professorships available to younger scientists."

Unless wide-ranging changes are made in the support for science, researchers argue that Denmark risks missing a major opportunity to compete internationally in biomedical science and biotechnology. Currently, universities in Sweden and Denmark, along with various organizations, companies, and the two governments, are working to integrate the university powerhouses and biotech industry of southern Sweden with their counterparts across the Oresund Strait in the Copenhagen area to form a zone dubbed Medicon Valley. Diderichsen says that although the Swedish authorities have proved to be dedicated and professional in their efforts, "the Danish government fails to understand that it must provide substantial economic support to fully realize the region's potential." Despite great enthusiasm among scientists and companies, he worries that Medicon Valley could lose out to biotech competitors such as Munich and London.

—**LONE FRANK**

Lone Frank writes from Copenhagen, Denmark.