for example. Surgeon General C. Everett Koop, in contrast, has called for voluntary testing only.

Part of the current indecision about the precise form and function of the new panel may stem from a combination of factors—particularly the Reagan Administration's reluctance to take an active role in coordinating AIDS policy and the fact that policy issues related to the AIDS crisis now touch nearly every department within the Cabinet. As a result, it may be inappropriate to assign primary control over an AIDS panel to any single department secretary.

Bauer says that the composition and the responsibilities of the presidential AIDS panel (which still has no formal name) should be announced within the next 4 to 6 weeks. Robert Redfield of Walter Reed Army Medical Center calls the formation of the AIDS panel a "very important first step" in addressing the crisis at a national level. ■

DEBORAH M. BARNES

Cuts Promised in U.K. Military R&D

Britain's Ministry of Defense has come under increasing criticism in recent years for absorbing a disproportionately large part of the nation's research budget. The ministry has now responded by promising to reduce the costs of its research, as well as the number of qualified scientists and engineers that it employs. It also argues that greater efficiency will be achieved primarily by increasing the amount contracted to the private sector and by seeking greater cooperation on weapons development with its Western allies.

Critics of Britain's high expenditure on military R&D have included not only opposition politicians, economists, and leading industrialists, but also both the senior scientific adviser in the Cabinet Office, John Fairclough, and his immediate predecessor, Sir Robin Nicholson. Government-funded defense R&D currently consumes 0.68% of Britain's gross domestic product, compared to 0.49% in France and 0.11% in West Germany. The difference in these figures is frequently blamed for contributing to Britain's relatively poor performance in many fields of civilian technology.

In a White Paper (policy statement) published in London last week, the Ministry describes as "regrettable" the prospect of defense research attracting so many professional scientists and engineers that the competitiveness of Britain's civilian high-technology industries could become "seriously impaired." Ministry officials have been quoted as saying that they expect "significant reductions" in 2 or 3 years' time as the nation's overall defense R&D effort becomes more efficient and competitive.

So far, however, the cuts are just promises. The White Paper says that spending on military R&D will rise from $3.66 billion in the past financial year to $3.81 billion next year, slightly less than the anticipated rate of inflation. And George Younger, the Minister of Defense, said last week that there were plans over the next few years "to look more closely at defense programs with a large R&D element to ensure that their government funding is essential."

The government is still highly embarrassed, for example, by its recent decision to abandon work on Britain's planned advanced warning airborne radar system, Nimrod, which failed to reach performance specifications after more than $1.5 billion had been spent on development work. An in-depth study of the cost-effectiveness of military research spending is now being prepared by the government's Advisory Committee on Applied Research and Development, one of the military's fiercest critics.

Ministry of Defense officials in London, however, admit that most of the cost savings being planned in the short term are expected to come from the reorganization of research—the number of military research jobs in government-run laboratories has already been reduced from 30,000 to 23,000 over the past 10 years—rather than through any significant reduction in the amount or type of work being carried out.

"Our research needs have already been defined since we already know what our commitments are, and we do not imagine that there will be any reduction in these" a ministry spokesman said. He added that the main savings would result from contracting research out to private companies, where teams of research scientists could be switched more easily than in the public sector between military and civilian projects according to shifts in demand for their skills.

With no definite figures on future commitments to reduce military R&D spending, some have suggested that the timing of last week's statement may have coincided with the run-up to the General Election, which Prime Minister Margaret Thatcher has announced will take place on 11 June. "The proof of the pudding will be in the eating," says Philip Gummett, lecturer in science and technology policy at the University of Manchester. "There is nothing concrete in the figures yet to tell us what is really going to happen, and suggestions about future reductions may turn out to be pious hopes." ■

DAVID DICKSON

Adjusting to an Aging Population

Japan and the United States have something in common other than their desire to be Number One in the world: their aging populations. As people are living and staying healthy longer, it is becoming increasingly apparent that dropping out at 65 (the age established a century and a half ago by Otto von Bismarck) is inappropriate. Pensions and medical care for nonproductive citizens are getting too expensive, and the economies of both countries need to retain more experienced workers now that the postwar Baby Boom has tailed off. Also, people tend to be happier and healthier when they have work to do.

That was the message of a conference on "the promise of productive aging," held on Capitol Hill last month. Sponsored by the Japan Shipbuilding Industry Foundation, it featured scientists from both countries, politicians, and social commentators.

"Aging has come of age," announced conference director Robert N. Butler of Mount Sinai Medical Center, who was the founding director of the National Institute on Aging. Twelve percent of the American population is now over 65, and the figure will rise to 20% by 2020. In Japan, the fastest aging country in the world, the proportion will grow from 10 to 23%.

Advances not only in medicine but in improved health habits and education are altering the meaning of being old. For example, Alvar Svanborg of the University of Göteborg in Sweden related that the Göteborg longitudinal study of aging has shown that today's 70 year olds are healthier, more vital, and "intellectually significantly more capable" than 70 year olds of a decade ago.

Speakers said that most older people would like to work, but the system does not readily encourage flexibility. Mandatory retirement ages were eliminated by Congress last year, but everything is still set up to encourage retirement—for example, Social Security pensions are withdrawn from those making modest incomes. Observed Thomas Maloney of the Commonwealth Fund: "we thought we could remain a world economic leader while we sent an entire generation of productive people off to play golf."

In Japan, obstacles to bringing older people back into the work force may be even greater, with the "lifetime employment" system in large firms leaving many productive people (mostly males) with no work options after mandatory retirement at age 55. Takao Komine of the Economic Planning Agency of Japan pointed out that jobs for older

workers are scarce what with the rise of the yen, which is driving Japanese firms abroad, and the decrease in saving, which reduces money available for capital investment. Pay and promotion policies that favor older workers also make younger ones more attractive to employers. Tadashi Nakamura of the Ministry of Labor said there is only one opening for every ten applicants over 55.

Nonetheless, Japan is very interested in developing new options for older workers in view of the decelerated birthrate and the growing burden of dependents on the working-age population. Nakamura said his country needs lifetime education and training, more flexible and part-time jobs, and lifelong health plans.

Some American firms are reporting efforts to bring back older workers. F. Peter Libassi of the Travelers Companies said, for example, that its Retiree Job Bank is saving the company $1 million a year by reemploying

Constance Holden

Tadashi Nakamura. *The Ministry of Labor says jobs for older Japanese are scarce.*

experienced workers up to their 80s.

Commerce Secretary William Brock pointed out that experienced employees are at a premium now that low-skill and low-pay jobs are being taken over by machines. Yet despite this, he said, "we are continuing to talk about early retirement—which is ridiculous" and not training people over 50.

Themes sounded at the conference—including calls for pension portability, a national health plan, worker retraining, phased retirement, and research on work and aging—will undoubtedly be heard with increasing frequency. Author Betty Friedan predicted that members of the Baby Boom generation, now surging into their 40's, will transform concepts of old age and retirement just as they created new cultures of childhood and youth. Indeed, the confluence of economic and demographic realities seems to make such a transformation inevitable. ■ CONSTANCE HOLDEN

Briefing:

BioTechnica Clears First EPA Hurdle

The Environmental Protection Agency has tentatively approved BioTechnica International's application to field test three strains of the bacterium *Rhizobium meliloti* that have been genetically altered. The organism, which the company has modified to improve nitrogen-fixing capability, would be tested on alfalfa at the company's research farm in Pepin County, Wisconsin (*Science*, 20 February, p. 840). The microorganism is the first subject to regulation under the agency's biotechnology policy. EPA has extended the public comment period by 60 days and will make a final decision on the experiment in early July.

Meanwhile, Steven Lindow, a researcher at the University of California at Berkeley, has proceeded with a test of a strain of *Pseudomonas syringae* that has been genetically modified to inhibit frost formation. The experiment started on 29 April as expected (*Science*, 1 May, p. 511) at the university's research station near Tulelake, California. Lindow has treated seed potatoes with a strain of the bacterium that lacks a gene responsible for producing protein secretions linked to frost formation on plants. ■ **M.C.**

Alcohol Consumption Down, Research Up

Per capita alcohol consumption in the United States has shown a "significant decline" since its peak in 1980–81, according to the *Sixth Special Report to the U.S. Congress on Alcohol and Health*, prepared by the National Institute on Alcohol Abuse and Alcoholism. Consumption has dropped from 2.76 gallons of pure alcohol per person over 14 years of age in 1978 to 2.65 gallons in 1984.

This decline is reflected in a decrease in drunk driving: between 1980 and 1984 the proportion of fatally injured drivers who were legally intoxicated dropped from 50 to 43%. Mortality from liver cirrhosis—most of which is caused by alcohol abuse—has also declined to the lowest level since 1959.

The report, which covers epidemiology, basic research, prevention, and treatment, documents significant advances in research on alcoholism since the fifth special report, issued in 1983. For example, brain wave studies on the sons of alcoholics, conducted by psychiatrist Henri Begleiter of New York's Downstate Medical Center, have indicated that slight neurophysiological anomalies may exist in those genetically predisposed to alcoholism. A new typology developed by psychiatrist Robert Cloninger of the University of Washington at St. Louis suggests that there are at least two types of hereditary alcoholism: "male-limited," which is severe, highly heritable, and associated with antisocial behavior; and "milieu-limited," which is triggered by environmental circumstances.

The number of those in treatment continues to grow, with 0.5 million reported in treatment in September 1984. But alcoholism and alcohol abuse are still underreported and underdiagnosed. The report says that alcohol contributes substantially to all types of accidents, homicides and suicides, and to a wide variety of diseases including some cancers, pneumonia, diabetes, and hypertension. Yet, "only about 3% of recorded deaths are officially attributed to causes directly linked to alcohol." ■ **C.H.**

Academic R&D Costs Will Double by 1996

Annual expenditures on academic R&D will have to double over the next decade just to maintain activities at the current level, according to an analysis by the National Science Foundation.* The total cost of supporting a senior researcher full time, now about $155,000 per year, will climb to $180,000 to $205,000 by 1996. If modest inflation is factored in, the academic R&D budget must rise by 250% in current dollars simply to keep pace with these increases in costs.

The NSF's projections, prepared by the agency's policy research and analysis office, are based on three trends. First, expenditures on facilities and equipment will continue to increase over the next few years to make up for underfunding in the past. Second, salaries and wages will rise, buoyed by an anticipated shortage of scientists and engineers. And third, overhead will increase and take up a larger share of the research budget.

The analysis was prepared for NSF director Erich Bloch, who has advocated a doubling of the foundation's budget over the next 3 years. The White House has promised to ask Congress to double the budget over 5 years. ■ **C.N.**

*"Future costs of research," available from the Division of Policy Research and Analysis, National Science Foundation, 1800 G Street, NW, Washington, DC 20550.