Science rises up US space policy agenda

Washington. The White House last week released a new US space policy — the first produced since the end of the Cold War — which includes several specific goals for science, including a systematic study of Mars by robots and a long-term programme to search for planets around other stars.

The document, which mostly codifies Clinton administration policies and activities already under way, is the first complete overhaul of the nation's space policy since 1989. The commitment of the previous Bush administration to a human landing on Mars has been replaced by a wait-and-see approach. According to a fact sheet distributed last week, the space station will now merely "support future decisions" on human exploration of the solar system.

The new policy calls for human and robotic exploration of space, as well as "a sustained programme to support a robotic presence on the surface of Mars by year 2000 for the purposes of scientific research, exploration and technology development".

The National Aeronautics and Space Administration (NASA) already has plans to send spacecraft to Mars at every two-year launch opportunity, beginning this fall. But those plans are being reconsidered in light of a recent claim of past biological activity on Mars (see *Nature* **382**, 565; 1996). White House press secretary Michael McCurry told reporters last week that the new policy envisions a "continual transmission of data from the surface of Mars" by 2000.

Science has a higher billing than it did in the 1989 document, which listed national security as the top goal of the US space programme. Now the first goal is to "enhance knowledge of the Earth, the solar system and the universe". The policy is also more specific than its predecessor about which scientific programmes NASA will undertake.

Aside from exploring Mars, it calls for the agency to conduct long term programmes to "obtain in-situ measurements and sample returns from the celestial bodies in the solar system", and to "identify and characterize planetary bodies in orbit around other stars". The latter goal is a major part of the space agency's proposed new 'Origins' programme (see *Nature*, **378**, 650; 1995).

The policy strengthens the administration's commitment to Earth observation from space, including continual measurements from the Earth Observing System — which came under attack last year from the Republican-led Congress — by 1998. It emphasizes low-cost spacecraft, directs NASA to buy spacecraft and data wherever possible from the private sector, calls for the eventual transition from a regulated market for international launches to one that is free and open, and encourages greater cooperation and cost-sharing between civilian and defence space sectors.

According to Ray Williamson, an analyst at the Space Policy Institute at George Washington University, the new policy also "makes a stronger statement on international cooperation". Past US language on international projects such as the space station always had a slightly "America-first" tone, he says. Now the United States promises to pursue "greater levels of partnership and cooperation in national and international space activities".

Tony Reichhardt

Malaria research suffering relative neglect, study claims

London. Malaria research is drastically underfunded compared to other diseases, such as HIV and asthma, when its relative incidence and its global death toll are taken into account. That is the conclusion of a report published this week by the Unit for Policy Research in Science and Medicine (PRISM) of Britain's Wellcome Trust. The report* also suggests the results of research have not been sufficiently exploited.

Malaria kills between 1.5 million and 2.7 million people a year, particularly in sub-Saharan Africa; other regions with major problems include India, South America and the Far East. The prevalence and distribution of the disease is increasing. The *Anopheles* mosquito vector is gaining greater resistance to insecticides, and the principal infectious agents, *Plasmodium falciparum* and *P. vivax*, are becoming more resistant to antimalarial drugs.

The PRISM analysts looked at global expenditure on malaria research over the past decade, and associated international publishing activity. They asked 200 members of the malaria community — including researchers, clinicians, health service personnel, industrialists and administrators — about their views on current practice, and the most useful directions for research.

"We've identified the scale of the difference of investment between malaria and other diseases," says Joe Anderson, one of the report's authors and the director of the unit. Total global expenditure on malaria research in 1993 was US$84 million — equivalent to $42 for every death. Calculations for HIV/AIDS gave $3,274 for each death, and $789 for asthma.

According to Anderson, these figures confirm how research funding places a disproportionate priority on diseases with a high profile in the West. It has been received wisdom that tropical diseases get less attention than others, he says, but PRISM has now produced "proper facts and figures that people can use to make policy decisions".

The situation appears to be getting worse. Global funding for malaria research declined significantly between 1985 and 1994, largely reflecting a drop in US investment as it reduces its military involvement overseas.

Nevertheless, more than half of all funding in 1993 still came from the United States, particularly the US Agency for International Development and the National Institute of Allergy and Infectious Diseases.

The report shows that international publishing activity reflects the relatively low funding. While Britain's global share of publications increased from 14 per cent in 1984 to 18 per cent in 1994, that of the United States fell from 42 to 34 per cent.

Some 115 members of the international malaria community responded to the opinion survey. Two-thirds of them had had personal experience of projects in which findings led to improvements in disease prevention, treatment or control, suggesting that research appears to have a direct impact on health care.

Jim Holmes/Panos

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Malaria victim: research funding is losing out.

Yet half said they were aware of promising research findings that have not been fully developed in fields such as potential drugs and vaccines, the treatment of severe and cerebral malaria, biological control of the disease vector and the monitoring of drug resistance. "That's an exploitation gap," says Anderson.

Obstacles to better exploitation, according to the survey, include poor orientation of research programmes to practical problems and public needs. Topics identified as having the best prospects for advancing understanding over the next five years were the genetics and biology of *Plasmodium* and disease epidemiology.

Claire O'Brien

*Anderson, J., Maclean, M. & Davies, C., PRISM Report No 7. *Malaria Research: An Audit of International Activity.* (Wellcome Trust, London, 1996, £10.)