

NASA beefs up life science involvement

[WASHINGTON] The US space agency NASA has appointed Nobel prizewinning biochemist Baruch 'Barry' Blumberg to head its new Astrobiology Institute, and neuroscientist Kathie Olsen as the agency's new chief scientist. Both moves will strengthen NASA's position in the biological sciences.

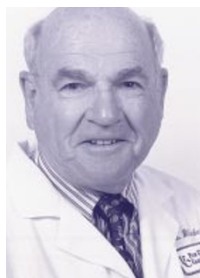
The 73-year-old Blumberg, who won the 1976 Nobel prize in medicine for his work in developing the hepatitis-B vaccine, teaches medicine and anthropology at the University of Pennsylvania and is an adviser to the Fox Chase Cancer Center in Philadelphia.

He will move to the Ames Research Center near San Francisco in September to head NASA's year-old 'virtual institute', a collective of scientists from 11 institutions investigating the origin of life and its possible existence beyond Earth.

Although he became aware of the field only a few years ago, Blumberg is among a handful of Nobel prizewinners who have been enthusiastic participants in a series of workshops at Ames to lay the foundations of astrobiology.

Blumberg says his unfamiliarity with previous debates on the topic may be an advantage: "I can be non-partisan." His appointment raises hopes that the institute will be the kind of intellectual incubator envisaged by NASA administrator Daniel Goldin.

The search for a director "took longer



Blumberg: will lead a 'virtual institute'.

Olsen, holder of a series of administrative jobs at the National Science Foundation since the mid-1980s, lacks Blumberg's status as a researcher. But her appointment fulfils Goldin's long-standing promise to appoint a biologist as his chief science adviser.

Traditionally, the position has had little authority, and has been vacant for almost three years. Budget and programme responsibility lies with NASA's three science offices: space science, Earth science, and life and microgravity science. Part of Olsen's job will be to broker differences among the strong personalities who head these offices.

But she will have Goldin's support as she attempts to raise the profile of life-science research at NASA. The agency hopes to increase spending in two areas: astrobiology and 'bio-astronautics', a blend of operational

than we had hoped", says the head of one member institution. High-speed video-conferencing capability has also been slow to materialize, hindering the Astrobiology Institute's role as an experiment in long-distance collaboration. Now the pieces appear to be falling into place.

medicine for astronaut crews and research into human adaptation to space flight.

Frank Sulzman of the office of life and microgravity sciences recently told NASA's external advisory committee that the agency wants to shift from simply "taking inventory" of activities in biology to augmenting the budget for ground-based laboratory work and experiments in space.

For example, NASA will soon announce the winners of grants in "biology-inspired" space technologies. These could range from advanced life-support techniques to 'smart' materials based on living systems.

Blumberg credits Goldin with the vision to link NASA's space research with advances in genomics and other life sciences. After decades of wondering about the existence of life in the Universe, he says, scientists can now conduct experiments and collect real data. A believer in the value of inductive reasoning, he says astrobiology will have the advantage of being "unencumbered by hypothesis".

Running the institute, with its "fairly complicated organizational scheme", will be a challenge, he admits. But he looks forward to working with astronomers, biologists, chemists and other researchers, and to attracting collaborators not just from US institutions, but from other parts of the world. "My big job," he says, "is to get scientists interested in the field." **Tony Reichhardt**

Tokyo meeting airs problems of international space collaboration

[TOKYO] Political and legal constraints remain serious obstacles to collaborative space projects, according to a meeting in Tokyo last week of space scientists from the United States, Europe and Japan. These include different approaches to liability waivers and sensitivities to the international transfer of space hardware.

The three-day meeting — attended by representatives from the European Space Science Committee (ESSC), a body associated with the European Science Foundation, the US National Academy of Science's Space Studies Board and the Space Research Committee (SRC) of Japan's Science Council — aimed to identify the key factors in facilitating future international missions.

Participants pointed out that, although international collaboration is increasingly important as space-science budgets decline, this may be discouraged by a shift by the US space agency NASA and the European Space Agency towards smaller, cheaper missions.

A report on US-European space collaboration, released last year by the ESSC, recommended the use of eight criteria to assess whether future international missions

are likely to be successful. These included scientific support through peer review and appropriate procedures for data handling (see *Nature* 394, 112; 1998).

"We are now trying to get Japan into the picture by focusing on the lessons of our past and ongoing collaborations," says Len Culhane, director of the Mullard Space Science Laboratory at University College London and chairman of the ESSC.

"There are issues arising from differences in our administrative systems. But the gaps [between the partners] will have to be filled to make international collaborations more successful."

According to scientists involved in international missions, such as the Yohkoh solar mission and the X-ray astronomy mission ASCA, collaborations between Europe, Japan and the United States have been scientifically very successful, even though language and cultural differences — as well as Japanese scientists' reluctance to release data — initially caused concern.

However, Japanese researchers expressed concern at last week's meeting over legal differences between Japan and the United States on liability and export matters. They

cited tensions between NASA and Japan's Institute of Space and Astronautical Science (ISAS) during the development of GEOTAIL, a satellite for investigating the structure and dynamics of the tail region of the magnetosphere.

Although NASA lawyers had required that each party bear its own risk of participation in a joint space activity, Japanese law does not permit this.

"The issue remains unresolved, and casts a long shadow on future collaboration, but this has to be handled at a higher, political level," says Atsuhiko Nishida, director of ISAS and chairman of the SRC.

Roger Anderson, an astrophysicist from the University of Iowa and a member of the US Space Studies Board, says there were problems with the international transfer of space hardware on both sides of the Pacific during the development of GEOTAIL. This caused problems with endorsing instruments and "discomfort" for scientists.

"What is most concerning is the impact of current US export regulations not only on hardware but also on the distribution of, and access to, scientific databases," he says. **Asako Saegusa**