UK to help fund US laser fusion research

[LIVERMORE, CALIFORNIA] Britain's Ministry of Defence has announced a significant scientific and financial commitment to the US National Ignition Facility (NIF), the world's largest laser, being built at the Lawrence Livermore National Laboratory.

An initial investment of "tens of millions of US dollars" will fund research by British scientists to allow more rapid repeat firings of the 192 lasers in the NIF's target chamber.

Within 18 months, the ministry will complete a feasibility study of the United Kingdom building a second laser target chamber at the Livermore Laboratory. This could increase UK investment in the project to more than $100 million.

The announcement of the British commitment to the NIF — the United States' largest single scientific project, costing $1.2 billion — was made by Graham Jordan, acting chief scientific adviser for the UK defence ministry, at a ceremony last Friday (11 June) marking the unveiling of the NIF's target chamber (see *Nature* **399,** 515; 1999).

British scientists will soon join the NIF project at the Livermore Laboratory, said Jordan, although he declined to say how many. Jordan said that US progress on the "massive project" was "very impressive".

Britain's investment will allow its scientists to perform experiments at the NIF, which is causing excitement over its potential contributions to nuclear stockpile stewardship, fusion energy development and research in astrophysics, hydrodynamics and high-energy physics.

AP/BEN MARGOT

On target: the first laser target chamber at the National Ignition Facility was christened last week.

The UK team will join French scientists, who are already working at the Livermore Laboratory on NIF development. France is constructing its own ignition facility, the Laser MegaJoule, near Bordeaux.

The French facility is being built more slowly than the NIF, as French scientists seek to learn from the US project. Jacques Bouchard, director of military applications for the French Atomic Energy Commission, said at last week's ceremony that French scientists "were more conservative" than the US team on the number of lasers needed for the target chamber. Construction of the NIF is likely to be finished in 2003, with the French facility being completed five years later.

When fired, the 192 lasers will concentrate on a capsule of deuterium and tritium, the two heavy isotopes of hydrogen, forcing them to combine through compression and heating them to produce ignition and self-sustained fusion burn.

Bruce Tarter, director of the Livermore Laboratory, said that confidence was growing over the creation of "a thermonuclear reaction" that could be used for nuclear stockpile stewardship and research.

US Department of Energy (DoE) officials said last week that the NIF project was on schedule and on budget, with $700 million spent so far on the containment building and the 150-ton laser target chamber it will house.

If Britain goes ahead with the second target chamber, it would be adjacent to the current chamber, allowing scientists to increase significantly the rate of experiments.

DoE secretary Bill Richardson dedicated the NIF target chamber at the ceremony, and said: "This is a landmark toward achieving ignition. NIF will help maintain the safety and reliability of America's nuclear deterrent and expand the frontiers of science."

Richardson said that the greatest value of the British and French contributions to the NIF was "not the sharing of cost, but the sharing of minds".

Jordan said later that participation in NIF will permit the United Kingdom to engage in nuclear stockpile stewardship using the most advanced scientific techniques. **Rex Dalton**

DFG urges Germany to boost its spending on genome research

[MUNICH] Deutsche Forschungsgemeinschaft (DFG), Germany's university granting agency, has urged the German government to provide an extra DM1 billion (US$530 million) for genome research over the next five years, considerably more than doubling the current level of expenditure.

In a statement published last week, the DFG also proposes that, in order to catch up with other countries such as Britain and France, Germany should create a "national genome initiative" led by the federal science ministry and the rapidly growing biotechnology industry.

It suggests that extra money allocated to bioinformatics be used to set up courses at universities to meet the increasing demand for trained personnel. The DFG also urges the creation of a national committee, headed alternately by representatives of the various areas of genomics, to coordinate the funding of genomic research in Germany.

Despite Germany's "late start" in basic genomics research, the statement, *Perspectives on Genome Research*, says that the scientific quality of such research is excellent, identifying work on model organisms, microbiology and plant sciences as being particularly strong.

But it points out that, although public funding for such research in Germany has risen, it is still a tenth of that in the United States, where the economic and scientific significance of genome technology was identified much earlier. Fresh money is needed at a time when genomic research is about to enter its next phase, identifying the relevance of genes to the origin of diseases.

At present, public research grants for projects in genomics research in Germany total about DM70 million a year. Of this, DM40 million is reserved for human genome research, with DM5 million for plant genome research, DM7 million for research on microorganisms and DM20 million for technology development.

The DFG suggests that an additional DM400 million be made available for human-genome research and research on model organisms over the next five years. Research on microorganisms and plant sciences should receive DM200 million each, and bioinformatics and technology development DM100 million each.

Such large sums are needed because international competition is becoming fiercer, says the DFG, pointing out that the French government plans to invest an additional US$330 million in genome research over the next three years (see *Nature* 399, 185; 1999).

Ernst-Ludwig Winnacker, president of the DFG, points out that Germany has a lot of catching up to do in fields such as functional genomics and bioinformatics. "Now that we have collected so much data we want to know what it is good for," he says.

It is unclear how the DFG's demands could be financed. Public spending in Germany is to be reduced next year by DM30 billion, according to the finance ministry, and the federal budget for science is unlikely to be excluded from cuts. But science minister Edelgard Bulmahn is taking the DFG's proposals seriously, and a task force has been set up by the science ministry to translate them into new funding priorities. Quirin Schiermeier