UK centre 'drops science for sensation'

[PARIS] A new science centre being financed by Britain's national lottery as a replacement for Bristol's popular Exploratory is facing criticism that its exhibits lack any serious scientific content.

Critics argue that the new centre, which is called Explore at Bristol, is forsaking science in favour of high technology and spectacular visual impact. Among the most vocal critics are scientists who were linked with the Exploratory, one of Britain's first science centres, which is closing its doors and transferring its exhibits to Explore.

The Exploratory consisted of exhibits, known as 'plores', that illustrated scientific principles, for example those of electromagnetism. The new centre, on the other hand, will boast crowd-pleasers such as a walk-in womb and a virtual-reality exhibit in which visitors can ride on the back of sperm from ejaculation to fertilization.

Sir Michael Berry, a professor of physics at the University of Bristol and a science adviser to the Exploratory, was unimpressed when he visited a preview of the new centre last week with his 11-year-old daughter. "The building and setting are wonderful. But when you go inside, it's actually very disappointing," he says. "I found it to be an intellectually tatty version of the Exploratory."

The Exploratory, along with a wildlife centre now called Wildscreen, formed the basis of a successful bid for a £41 million ($66 million) grant towards the project from the Millennium Commission, which receives money from the national lottery. The bid was put together by a consortium known as Bristol 2000, and now calling itself at-Bristol. The Exploratory will close next week, with the new centre set to open in spring. In addition, the Exploratory's staff of 30 will need to find new positions.

The Exploratory was created in the early 1980s by Richard Gregory, an emeritus professor of neuropsychology at the University of Bristol who had previously been involved in building a similar hands-on centre in San Francisco called the Exploratorium. Gregory has been involved in the creation of the new centre and says the idea behind it was to create an updated version of the Exploratory.

But Gregory and several of Explore's other scientific advisers complain that their opinions have been sidelined by the directors of at-Bristol. As a result, one of them says, the new centre lacks the "intellectual rigour" that distinguished the Exploratory. "We were supposed to be part of Explore but we got kind of rejected," Gregory says. "We found ourselves destroyed after 20 years."

About 30 per cent of Exploratory's exhibits will be on display in the new centre, with the rest being used for outreach programs or sold to raise funds. Explore needs to raise another £4.5 million to stay on budget.

Gregory says he hopes that more of the Exploratory will be incorporated into the new centre, but at-Bristol's directors say this

is unlikely. Nicholas Hood, chairman of at-Bristol, admits: "We haven't listened to [the scientific advisers] as closely as we should have." He adds that his organization has been "boxed into a remorseless calendar" in its bid to open soon after the Millennium.

Describing Explore's approach, Hood says: "Some people who are not as scientifically driven will be likely to say, 'wow'. And it's the 'wow' factor that we are searching for."

Colin Blakemore, a professor of physiology at Oxford and a member of Explore's scientific advisory committee, agrees with Hood that it was the time factor that excluded the scientists from the planning process. He hopes that future discussions with at-Bristol will eventually improve the scientific quality of the project. **Heather McCabe**

A million volunteers join the online search for extraterrestrial life

[WASHINGTON] Three months after it began, an innovative scheme to enlist public help in the search for extraterrestrial intelligence (SETI) already has more than a million volunteers taking part in 224 countries — making it the largest distributed computing project in history.

SETI@home is a downloadable screensaver programme that uses idle time on home and office computers to look for patterns in radio-telescope data. Its spectacular success now has its creators thinking about ways that scientists in other disciplines could harness lots of small

SETI goes home: a screensaver searches for patterns in intergalactic radio noise.

computers to process large amounts of data.

The programme was initiated by the University of California at Berkeley's SERENDIP SETI project, which every day records 35 gigabytes of data collected by the Arecibo Radio Telescope in Puerto Rico. The idea behind SETI is to search all this radio noise for non-random patterns that might possibly be deliberate signals from another civilization.

But analysing large volumes of data with the desired sensitivity and frequency resolution is a daunting task. A distributed system "was really the only way we could solve this computation problem", says SERENDIP director Dan Wertheimer. "Together, the million participants have formed the largest supercomputer on the planet." The combined force is capable of six teraflops, or six trillion floating operations, per second.

Participants download the screensaver programme from a Berkeley web server (http://setiathome.ssl.berkeley.edu) along with 350-kilobyte 'work units' representing 107 seconds of Arecibo data. When one unit
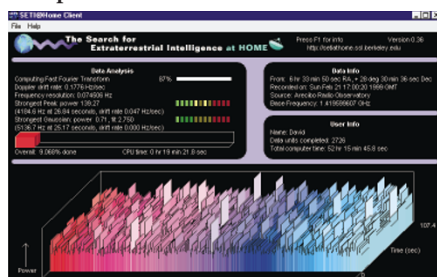
finishes processing, it is uploaded to Berkeley and another one is downloaded.

Wertheimer, who expected only 100,000 participants, admits that there were growing pains, including early difficulties handling the data traffic and providing customer support. He also says he was worried about quality control in the data returning from users. But very few people have been filing fraudulent work units, and these have been easy to spot. The project is expected to run for two years.

David Anderson, the Berkeley computer scientist who leads the project, says he is now looking around for other problems to work on that could benefit from such large-scale distributed computing. He has already had queries from biologists working in fields ranging from drug design to genetics, and hopes to set up a centre at Berkeley to offer the public a choice of projects in which to participate.

The challenge for scientists — and an obvious advantage for SETI — is coming up with computational problems that capture the public imagination. **Tony Reichhardt**