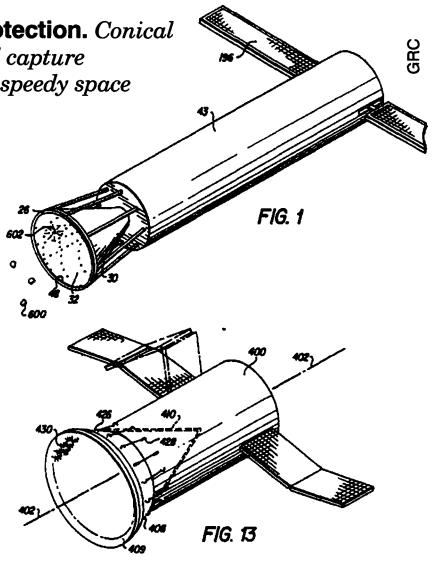
project is in NIH's best interest. So under the House plan, the genome project could actually receive as much as $89 million.

The entire messy package goes to the Senate in mid-September, which is rumored to be more favorably disposed toward the genome project. Even so, the project's future can't be charted with certainty, since the currently stalled budget summit between the White House and Congress could end up throwing a monkeywrench into the entire NIH appropriation.

A Dust Buster for Space

On Earth, dust rarely amounts to more than a nuisance. But in space, where particles can reach orbital speeds of 10 to 20 kilometers a second, even a paint chip can be lethal. If it's massive enough, a speck of material no wider than 0.1 centimeter can crack an astronaut's helmet or penetrate a space suit. Anything larger, and serious damage can be done to expensive scientific instruments or—if it ever gets built—to the space station.

The traditional way to protect against micro-meteoroids and (at lower altitudes) man-made debris is to build a "bumper shield." NASA's space station design employs a double-layered aluminum shield for just this purpose. But Cyrus Butner, an engineer at the General Research Corporation of Virginia, says there's a problem with this approach: when particles hit the aluminum at high speed, the impact will create "collision debris"—more high-speed particles that can inflict further damage.



Payload protection. *Conical device would capture dangerously speedy space particles.*

Butner and his colleague Charles Gartrell have therefore come up with an alternative—a kind of "dust buster" that absorbs particles instead of merely blocking their way. The contraption is a cone-shaped device lined on the inside with either water or fibers ("like a shag rug," says Butner) intended to capture small, fast moving particles by absorbing their energy.

Although no one has actually tested the idea, Butner thinks a blanket of these devices arranged in a honeycomb structure could provide a splatter-free shield for the space station. He also envisions using a wall of cones to make a space sweeper which could be deployed to clear debris from an area before construction activities or space walks.

The two inventors have received a patent for their concept, formally known as a "Method and Apparatus for Orbital Debris Mitigation." But the new device may be ahead of its time: Butner says that neither NASA nor the private sector has shown much interest so far.

Oxford Physicists Undergo Fusion

Physicists at Oxford University have apparently heeded the British government's message that, in higher education, biggest is generally best. The government has been telling the universities that big departments will be favored in the distribution of funds, and Oxford has responded by merging five independent physics units into the single biggest department in Britain, and possibly the Western world. It will house 550 undergraduates, 220 graduates, and 80 teaching staff, organized in six sub-departments: astrophysics; atmospheric, oceanic and planetary physics; atomic and laser physics; condensed matter physics; particle and nuclear physics; and theoretical physics.

Chris Llewellyn Smith, the theoretical physicist who will chair the new behemoth, said a key motivator was to get "better value for money by sharing our resources." He also argues that the change will make for more flexibility in research and teaching. "If you are divided into five separate departments, the balance of support tends to get frozen into a historical pattern," he says. "So while one area of work might get more exciting, the university's response is relatively slow."

As of next year there will also be a broader menu of offerings for freshmen physicists "to let students dabble their toes in a number of subjects at the start of the course," says Llewellyn Smith. Undergraduates will be able to choose five subjects from a list of 21, instead of specializing very early on as they had to when the departments were separate.

Science Conduct: Do the Right Thing

After a decade of studies and countless workshops by various academic societies on scientific misconduct (*Science*, 20 July, p. 240), the National Academy of Sciences still doesn't have the answers it wants on how the pressures of modern science lead to fraud and bad manners in the laboratory. So the Academy has become the latest organization to plunge into the murky world where scientific misbehavior borders on scientific fraud.

While the NAS may be a latecomer to the fraud circuit, it plans to impress with the eminence of its 17-member panel. The chairman: Edward E. David, Jr., former White House Science Adviser, former president of Exxon Research and Engineering, and past chair of two well-regarded NAS reports on mathematics education.

How will the NAS study differ from those of the Association of American Universities, the Association of American Medical Colleges, the American Association for the Advancement of Science, the Institute of Medicine, and the National Institutes of Health? It's more ambitious. The panel plans to broadly examine scientific culture in order to figure out what factors promote good and bad behavior and how these have changed in recent decades. "Our study is designed to take a hard look at the research environment and to see how to foster integrity," says Rosemary Chalk, study director for the panel. "We want to figure out how to encourage people to do the right thing." The panel hopes to have its answers sometime in 1991.

Former Gallo Aide Faces Felony Charges

On 24 July, the U.S. Attorney's office in Baltimore filed two felony charges against Syed Zaki Salahuddin, a former laboratory assistant to controversial AIDS researcher Robert Gallo, for an illegal conflict of interest and receiving an illegal gratuity. Court papers allege that Salahuddin improperly used his official position at the National Cancer Institute to order goods and services through a blanket purchasing agreement from a biotechnology firm his wife helped found in 1984, and that he received a gratuity when the company paid $3000 in 1987 to have his house painted.