DOE-NSF accounting practices would place the cost for the LHC accelerator and detectors at about $6 billion, with about two-thirds for the accelerator and one-third for the detectors. It is against these figures that the proposed U.S. contribution should be compared, namely, $200 million by DOE for the LHC accelerator and $330 million (DOE and NSF) for the two detectors. All of the U.S. accelerator funding and the vast majority of the detector funding will be used to provide materials and equipment from U.S. industry, national laboratories, and universities.

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Marine Biodiversity Budget

Ecosystem protection is a crucial strategy for conserving biological diversity (*1*), but the Clinton Administration's fiscal year 1998 budget proposal reveals a striking disparity between U.S. spending on protected areas on land and in the sea. It asks Congress for $1.6 billion for the National Park Service to manage 374 units totaling 344,000 square kilometers of land and $3.1 billion for the Forest Service to manage 159 units totaling 772,000 square kilometers of land. But its budget request for the National Oceanic and Atmospheric Administration's National Marine Sanctuaries Program is only $13.2 million—two orders of magnitude less—for 12 units totaling 47,000 square kilometers of sea.

Funding for terrestrial protected areas is inadequate, but resources dedicated to marine protected areas are so meager that the commitment of the United States to protecting marine biodiversity deserves a fundamental reevaluation before the next federal budget goes to Congress.

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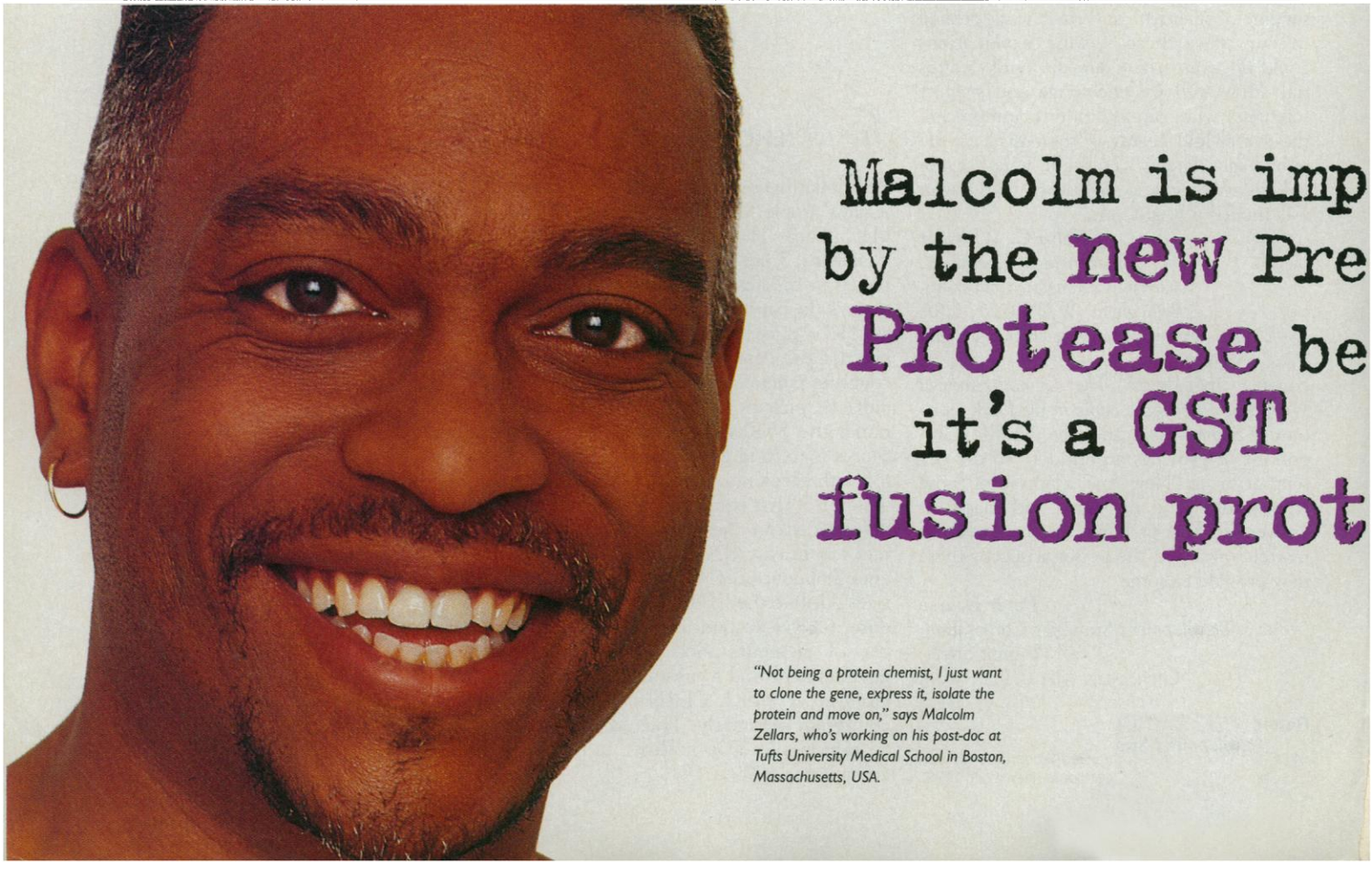
Aspirin and Stroke

Martin Enserink's article about the Second European Stroke Prevention Study (ESPS 2) study (News & Comment, 20 Dec., p. 2004) raises two issues that merit serious attention: (i) fraud in scientific research and (ii) the ethics of using placebos in situations where there is already an effective treatment.

There can be no place in scientific research for unreliable data or for the people who perpetuate fraud. This issue came to light with respect to this study because quality control procedures put in place by Boehringer Ingelheim detected suspicious data from one of the 60 participating centers. We fully informed the Dutch health authorities, notified the authorities at the institution in question, and cooperated fully with their investigations. We regret that the hospital director was unable to establish either guilt



"Not being a protein chemist, I just want to clone the gene, express it, isolate the protein and move on," says Malcolm Zellars, who's working on his post-doc at Tufts University Medical School in Boston, Massachusetts, USA.

or innocence, and we support further efforts to resolve the issue. More important, before "unblinding," we removed from the ESPS 2 study all observations submitted by this institution. The data that were analyzed and on which conclusions were based are unaffected by the questionable data.

This example illustrates that we must always be vigilant in our efforts to safeguard the integrety of science. In this instance, the value of intensive field monitoring has been confirmed: the credibility of the scientific record was preserved, and the consequences of any attempt to deliberately undermine the veracity of scientific experimentation will rest with the individuals who are found to be responsible.

With regard to the ethics of using placebos, it is self-evident that placebos should not be given instead of effective treatments. The question in this case is whether or not aspirin had been established as an effective stroke preventive at the time the trial was conducted. At the beginning of the trial, 60 independent ethical review committees (one at each study site) all agreed that the use of the placebo was appropriate. During the trial, additional studies emerged, but the results were conflicting (*1*); at no time during the trial was any suggestion made to discontinue the placebo. The meta-analyses cited in Enserink's article as having " 'convincingly proved' that aspirin worked" did not describe the effect of aspirin on stroke (*2*). Instead, a combined outcome grouped stroke with myocardial infarction and death. The authors' conclusion that "aspirin offers worthwhile protection against myocardial infarction, stroke, and death" (*2*) is misleading, because their analyses did not and cannot answer the question of whether aspirin prevents stroke. Even today, 2 years after the study's completion, the role of aspirin in stroke prevention is disputed. A U.S. Food and Drug Administration Advisory Committee hearing in January 1997 debated whether aspirin is clearly effective in preventing secondary stroke in a patient population comprised largely of those who had suffered a completed stroke.

The ESPS 2 trial was conducted according to the highest ethical and scientific standards. The important issues raised by Enserink's article should not overshadow the fact that this study found that a new therapy combining aspirin with dipyridamole was twice as effective as aspirin alone in preventing stroke.

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Biospherian Viewpoints

Biosphere 2 was designed as an experimental facility to be brought into equilibrium over several years, to yield fundamental data on ecosystem function in the process but specifically to learn how to operate closed, large-scale integrated ecosystems. Joel E. Cohen and David Tilman (Perspectives, 15 Nov., p. 1150) state, "it proved impossible to create a materially closed system that could support eight human beings with adequate food, water, and air for 2 years," but experimentation had barely begun in those 2 years. Biosphere 2 was planned for 100 years of investigative experiments. The "large daily and seasonal oscillations" of carbon dioxide (CO_2) were well anticipated, both theoretically and from experiments in the smaller test module. Carbon dioxide variation carries basic ecosystem metabolism information.

Had Biosphere 2 been sealed merely 10