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LETTERS

Neuroscience at NIH

Regarding the ScienceScope item "Neuroscience tiff at NIH" (6 Nov., p. 879), let me correct any misimpression the reader may have received. Neuroscience was, is, and will continue to be a critical element of the strategic plan for the National Institutes of Health (NIH). It is singled out as a major objective in the critical science and technology area. To quote from the strategic plan, "Two particular areas of extraordinary importance and promise are neuroscience and developmental biology." The plan goes on to identify not only basic neuroscience research but also analysis technologies, such as nuclear magnetic resonance imaging, and positron emission tomography, as areas of emphasis. The notion that neuroscience was left out of the strategic plan is incorrect.

Regarding the issue of space allocation on the NIH campus, as in most major academic and corporate institutions, such allocation is determined on the basis of merit, and merit alone. As in basic research, we must respond with flexibility to opportunities and to areas with promise.

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NIH Expenditures: Extramural Versus Intramural

A letter from Charles A. Gardner (23 Oct., p. 530) suggests that "no one has tried to compare the efficiency of a dollar spent on extramural versus intramural [NIH] research." In fact, in response to that exact question, the intramural National Institutes of Health (NIH) record was documented in congressional testimony on 23 September 1992, before the House Budget Committee Task Force on Human Resources, chaired by Representative James L. Oberstar (D-MN). Even though the intramural program receives only 1 of every 10 NIH dollars, the output per dollar as indicated by citation frequency, publication impact in top journals, and speed of translation of discoveries from the bench to the bed was two to four times greater than that for extramural expenditures. More important, without the intramural NIH program, recent fundamental scientific discoveries, such as the development of gene therapy, of AZT, ddI, and ddC (the only approved drugs for the treatment of AIDS), of taxol treatment of ovarian cancer, and 200 other discoveries listed at the hearing might have been significantly delayed or might not have happened at all.

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Regulations for Genetically Engineered Foods

We appreciated the essay by David A. Kessler *et al.* of the Food and Drug Administration (FDA) elaborating on their reasons for deregulating oversight for genetically engineered foods (Policy Forum, 26 June, p. 1747), but we feel it is important to also present reasoned arguments in favor of stronger regulation than the Bush Administration has offered.

Our concern with the FDA's approach—which allows the industry to decide which products should be evaluated for risks and which do not require any labeling or other consumer information about the presence of genetic modifications in the foodstuffs being consumed—is that the government's approach does not follow what has been called "the precautionary principle." The basis of this approach would be that, unless a novel technological procedure is assuredly free of risk, there ought to be assessment in advance of the impact, including estimation of risk probabilities. In addition, under this approach the burden of proof for demonstrating that the risks are acceptable would fall on the proponents of the new technology.

Underlying the reasoning in the Policy Forum by Kessler *et al.* is a scientifically questionable premise. In this view, if genes from one well-characterized and benign species, say peanuts, are inserted into the genome of another organism that is well characterized and benign, for example, tomatoes, the result is considered to be necessarily well known and benign and need not be assessed in advance. Yet in calculating any risk from a transgenic organism, one should consider four elements: the host organism, the foreign genes, the interaction between the foreign genes and the rest of the genome, and the environment in which the organisms will be used. Although the FDA's proposed policy focuses on the first two elements, the literature contains many examples of genetic ma-