disease, health, and all that in current genetic jargon can be labeled as "complex traits." This complexity is the manifestation of gene-gene and protein-protein interactions, themselves interacting with the equally rich nongenetic environments in which they operate. Certainly, one post-genome goal should be to try to understand, even if for only a few apparently simple complex traits, how the enormous and exhaustive lists of genes and proteins actually work. After reduction to elemental parts, there must be resynthesis into complex systems.

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Liberal Arts Colleges and Science Education

I'm tired of seeing letters from faculty at small liberal arts colleges (for example, 18 Oct., p. 326) piously proclaiming that they, and they alone, are the only ones capable of reforming the way science is taught at colleges and universities. Although many faculty at research universities do not place much value on teaching, there is a growing cadre of faculty at such institutions who are strongly committed to undergraduate teaching and to the improvement of science education. In many departments and even across entire campuses, these groups are beginning to reach the critical mass needed to bring about substantial change. Although there are many reasons why reform at research institutions has lagged behind change at small liberal arts colleges, one of the most important is that the magnitude of the problems at large universities dwarfs that at small colleges. Indeed, it is not all that difficult to teach effectively when one is dealing with a class of 20 students, carefully selected for their homogeneity. It is another matter completely to deal with 100 to 250 students with a full range of abilities, backgrounds, and learning styles. If faculty at small, liberal arts colleges truly want to contribute to the improvement of science education on the national level, they should join with faculty at larger institutions to find ways of adapting the successes of small institutions to the realities of large ones.

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Sex and Gender

On the topic of sex and gender, I agree for the most part with G. A. Pearson (Letters, 18 Oct., p. 328) and am happy that the topic is being raised. However, I would suggest that, in discussions of biochemical, morphological, and physiological issues where reproductive hormonal characteristics are being studied, "sex" is the more useful term even when it is applied to humans. In psychological, social, and societal issues, "gender" is more appropriate.

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Pearson complains that the word "gender" is misused interchangeably with "sex" in the scientific literature. The former is a term of art used by social scientists to refer

to human cultural roles, as opposed to physiological sex, and Pearson asserts that to confuse the two is to "perpetuate the myth that biology is destiny." According to the *Oxford English Dictionary*, however, "gender" originated as a philological term designating nouns that are masculine, feminine, or neutral. While social scientists are free to appropriate the word to draw a useful distinction within their field, it is not incumbent on the rest of us to do so. Pearson's claim is akin to arguing that, because the word "queen" is a term in social insect biology, the Queen of England no longer qualifies for her title because she does not have an enormous abdomen or spend her days laying eggs.

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Universities Defending Themselves in Japan

The accurate report on "Science in Japan" (4 Oct., p. 43) lacked local color. The practice in Japan of employing one's own graduate students is a defense against Tokyo, Kyoto, Waseda, and other big universities entirely populating the faculty at all Japanese universities, a fate just as unattractive as the present one. And rather than all things "flowing" to the University of Tokyo (D. Normile, 4 Oct., p. 44), it seems to me that Tokyo, Kyoto, and the other powerful central universities exercise financial, political, and academic influence to co-opt promising local research. The flip side of this is that in a field such as environmental science, a great deal of really meaningful research gets done at the local, so-called *ekiben daigaku* by researchers with much less to lose. *Ekiben daigaku*, or "train-station box-lunch university," is a lovingly denigrating term for those universities appearing at every train stop; whether delicious or not, the hungry must eat them.

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Ethics of AIDS Study

It was reported by Jon Cohen (Research News, 27 Sept., p. 1797) that, according to some members of the involved studies, Stephen O'Brien did not contact them before initiating the analysis for the manuscript "Genetic restriction of HIV-1 infection and progression to AIDS by a deletion allele of the *CKR5* structural gene" (M. Dean *et al.*, Reports, 27 Sept., p. 1856). Investigators from some of the studies are reported to have been in the process of forming collaborations with others to engage in the analysis completed by O'Brien's group.

For the past 8 years, O'Brien has been a member of the Hemophilia Growth and Development Study (HGDS). While his laboratory is the specimen-processing unit and repository for the study, the primary role of his genetics group is one of scientific collaboration, not service laboratory. Samples and clinical data have been provided to O'Brien for the express purpose of conducting investigations such as that of the report in question. O'Brien contacted representatives of the HGDS to notify us that he was proceeding with the analysis well in advance of distributing a first draft of the manuscript. Subsequently, a further two drafts were received for comment, criticism, and approval before submission.

In view of the criticism expressed by those quoted in Cohen's article, we believe it necessary to state clearly and unequivocally that O'Brien and his group have at all times shown the highest ethical standards and scientific rigor in the conduct of analysis and reporting of this research.

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Thyroid Protection

Michael Balter, in his article "Children become the first victims of fallout" (Special News Report, 19 Apr., p. 357) states that radiation exposure [caused by fallout from the Chernobyl nuclear reactor accident] "could have been countered by rapid administration of nonradioactive iodine to 'flush out' the radioactive isotopes from binding sites in the thyroid."

In fact, radioactive isotopes, once bound in the thyroid, cannot be flushed out by subsequent administration of nonradioactive iodine. To be effective in preventing the uptake and binding of radioactive isotopes, stable iodine must be administered before exposure. A daily 130-milligram dose of stable potassium iodine, starting 30 minutes to 1 day before the arrival of fallout or other material contaminated with radioac-