portionately large number of students who have gone on to earn doctorates in the sciences and which continue to provide leadership in the design and implementation of the most effective undergraduate teaching methods. If $5 million spent to support science teaching at second-tier universities would have a significant impact, imagine how powerful would be the results of those same dollars spent at liberal arts and sciences colleges to support and reaffirm the outstanding job they are already doing. Just one small portion of those dollars provided to increase support for student-faculty collaborative research—typical at our colleges, but rare except at the graduate level in the first- and second-tier universities—would have an impact far beyond its "drop-in-the-bucket" significance for the big research universities.

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Exposure to Methylene Chloride

James Huff, John Bucher, and J. Carl Barrett state in their letter of 24 May (p. 1083) that new, possibly exculpating, evidence (Meeting Briefs, 12 Apr., p. 200) should not be taken into account in reassessing the potential cancer risk posed by methylene chloride. This research was thought sufficiently important that the Occupational Safety and Health Administration reopened the record in its methylene chloride rulemaking (*1*), and the Environmental Protection Agency (EPA) is considering a reassessment of methylene chloride under its revised guidelines for carcinogen risk assessment. This is significant because EPA's Science Advisory Board and other reviewers have considered the rat results discussed by Huff *et al.* to be largely irrelevant to assessing methylene chloride's potential risk to humans (*2*).

As for the criticisms of research showing that mice are unusually susceptible to this chemical, the results of experiments cited by Huff *et al.* do not show that the increase in lung tumors observed in the mice occurred by a mechanism that would also be operating in humans, as one of the authors (R. R. Maronpot) of a paper by F. W. Kari *et al.* (*3*) acknowledged at the summer 1993 Toxicology Forum (*4*).

Huff *et al.* [paraphrasing the results of Kari *et al.* (*3*)] state that "mice exposed to only 2000 parts per million of methylene chloride . . . showed eventual lung and liver cancers . . . ," implying that this is a low exposure. In fact, 2000 parts per million is a very high exposure that far exceeds the saturation limits of the P450 pathway.

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References and Notes

1. *Fed. Regist.* **60,** 54462 (1995).
2. For example, letter from EPA's Science Advisory Board and report to William D. Ruckelshaus, EPA Administrator (18 July 1984).
3. F. W. Kari, F. J. Foley, S. K. Seilkop, R. R. Maronpot, M. W. Anderson, *Carcinogenesis* **14,** 819 (1993).
4. "Methylene chloride mechanistic and bioassay studies," Toxicology Forum, National Institute of Environmental Health Sciences, Aspen, CO, summer 1993, transcript, p. 350.

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California Civil Rights Initiative

In her letter of 23 August (p. 1031), Lucy Johns repeats the charge that a clause in the California Civil Rights Initiative (CCRI) "drastically dilutes protection against discrimination by gender." This charge, an effort to defeat the CCRI, is simply untrue. In an open letter to the people of California, 26 of the most distinguished constitutional lawyers in the country, some in favor

of and some opposed to the CCRI, were prompted by this charge to go on record as saying so (*1*). The letter includes the following statements.

The CCRI is a general ban on a wide range of sex classifications: "The state shall not discriminate against, or grant preferential treatment to, any individual or group on the basis of race, sex, color, ethnicity, or national origin in the operation of public employment, public education, or public contracting."

But clause (c) says that "Nothing in this section shall be interpreted as prohibiting bona fide qualifications based on sex which are reasonably necessary to the normal operation of public employment, public education, or public contracting." . . .

The [bona fide qualifications] proviso doesn't set up some weak "reasonableness test." It allows only those sex classifications that pass both the existing California constitutional tests and fit within the very narrow area of bona fide qualifications. And it avoids the problems that a total ban on sex classifications might cause: The law shouldn't, for instance, require that the state let male guards do strip searches of female jail inmates. Likewise, the law shouldn't require high school girls' basketball teams to allow boys to participate.

The signers end on the following note.

We welcome honest, thoughtful debate on affirmative action. But we oppose erroneous statements such as those made about clause (c).

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Notes

1. The complete letter and the names of the signers can be found at World Wide Web site http://www.publicaffairsweb.com/ccri/open.htm

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Alzheimer's Original Patient

Claire O'Brien, reporting on the discovery of Alois Alzheimer's patient file by Konrad Maurer and his colleagues (News & Comment, 5 July, p. 28) correctly says that clinical neurologists are eager to examine the file and possibly make a new diagnosis. In 1989, K. L. Bick and I reported (*1*) that this case was likely one of those described by Gaetano Perusini in 1910 (*2*). Both the temporal evidence and the clinical description support this conclusion. The histopathology of Perusini's case shows neurofibrillary tangles and senile plaques, but also some features that are not characteristic of Alzheimer's disease, namely, demyelination of central white matter and metachromatic deposits in the spinal cord after it was stained by toluidine blue (*2*). Staining techniques for metachromasia were the topic of a long paper by Alzheimer that appeared a few pages after Perusini's paper in the same publication (*3*). From those documents, we concluded that Alzheimer's patient could have had a late form of metachromatic leukodystrophy, where plaques and tangles are also present—not an Alzheimer's case then, but certainly an "Alzheimer's pathology."

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References

1. K. L. Bick and L. Amaducci, *Neurology* **39** (suppl. 1), 178 (1989); L. Amaducci, S. Sorbi, S. Piacentini, K. L. Bick, *Dev. Neurosci.* **13**, 186 (1991).
2. G. Perusini, *Histol. Histopath. Arb.* **3**, 297 (1910).
3. A. Alzheimer, *ibid.*, p. 401.

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Of Sex and Gender

In a recent online search, I entered the words "biology" and "gender," expecting to find papers investigating the ways girls might be socialized out of science careers. I did find some sociological papers, but also listed were a great many studies that had nothing to do with humans and their cultural problems. I found papers describing the behavior, morphology, and molecular biology of plants, insects, flatworms, crustaceans, rodents, and even sphincter muscle and coprolites; all of these papers attributed differences seen between individuals of the species to "gender."

Use of the word "gender" as a synonym for "sex" in scientific literature is an increasing trend (*1*), which may perhaps derive from the impression that "gender" is more polite (or politically correct, as much as I hate the phrase) than the word "sex," with its vulgar connotations. But in scientific language, terminological ambiguity is undesirable. We gain nothing by substituting "gender" for "sex"—no additional nuance of meaning. If anything, the substitution clouds understanding and runs contrary to the scientific principle of parsimony.

The online abstract of a paper in *Scientific American* states (*2*)

> In humans and other mammals, chromosomes determine gender. In other species, sex is controlled by temperature or even the social environment.

Social scientists might react with horror at this statement if they interpret "gender" as representing societal roles, not biological