introduced such departmental committees, and only as of this year. I hope that more universities will follow.

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Response

Gudrun Ihrke states that a serious issue was "reduced to personal mudslinging" because the article described the specifics of two conflicts. The fact is that these two cases powerfully illustrate a larger problem: The lack of effective procedures to resolve serious differences between postdocs and advisors can and does damage people's careers. As the article and an accompanying article, "Getting to the front of the bus" (p. 1514) make clear, information about these kinds of situations has spurred postdocs to organize and push for better institutional protection. Johns Hopkins is indeed one of the first universities to require annual written evaluations of postdocs by departmental committees, as the accompanying article clearly states. But while postdoc activists called these committees an important step, they emphasized that effective grievance procedures are still necessary to resolve serious conflicts and hold both postdocs and advisors accountable.

Dan Ferber

Problems with the Polygraph

In David Malakoff's 3 September News of the Week article (p. 1467), the statement about polygraphs from the Department of Energy (DOE), that there are "no scientific studies" that cast doubt on their value "as an investigative tool," is incorrect. Allen Brett, John Beary, and I analyzed the polygraph's ability to generate a positive finding from those telling lies and a negative finding from those telling the truth (*1*). We used data from field studies of suspected criminals to determine the predictive power of the polygraph. Our analysis was weighted toward the most favorable evaluation of the polygraph because all of the studies had been performed by experienced operators in real-world investigations where truth or falsehood was subsequently determined by confession of the guilty party. We found that the polygraph detected those lying at little better than the rate predicted by chance alone. If an interrogator flipped a coin, with heads for liars and tails for truth-tellers, then the results would be about the same as with a polygraph.

If the polygraph were merely useless, it would not be so bad. Unfortunately, it is harmful because it generates a large number of false-positive test results that may incriminate people who are telling the truth. Suppose 1000 people were screened, and 50 of them were liars. The polygraph would generate positive results in 38 out of 50 liars and in 351 out of 950 truth-tellers, that is, more than nine false positives for every true positive. The polygraph gives the wrong answer 9 times out of 10, and who would want to use a fire alarm or a cancer test that was wrong 90% of the time?

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Evolution Flies

Although the editorial by Stephen Jay Gould (*Science*'s Compass, 25 June, p. 2087) was perhaps peculiar, David W. Hogg's statement (Letters, *Science*'s Compass, 30 July, p. 663) that the hypothesis of evolution has not been "validated" seems extreme. When Wallace and Darwin independently concluded (from the pattern of morphological types of plants and animals between islands and continents) that new species evolved from previously existing species and that many current species shared common ancestor species, they were suggesting an alternative to their previous view that each species was created independently. They knew nothing about molecular biology, but these two hypotheses make very different predictions about molecular biology. Creation theory predicts that molecular components and processes in one species will be unlike those in another species, whereas evolution predicts that they will be similar and that differences will occur in particular patterns representing evolutionary change. In this regard, evolution is a superior hypothesis because it makes more specific predictions and is thus more easily refuted.

The last 100 years have provided an enormous amount of information that fits an evolutionary pattern—from basic facts such as that all organisms contain proteins and nucleic acids, to the deluge of sequence data that derive practical value from the fact that the data fit an evolutionary pattern. In addition, the mechanisms by which genetic variation is produced and transmitted are now well known. From what has been learned about the internal mechanisms of organisms, computer models demonstrate that evolution is inevitable. And finally, evolu-