

## *Science* Editorial Statement

The journal *Science* has received and reviewed the summary of last night's report of the Seoul National University investigating committee, which charges the Hwang group that published two stem cell papers in *Science* in 2004 and 2005 with fraud resulting from serious research misconduct. The authors of the latter paper had earlier agreed to a retraction; since the other paper also is implicated in these misconduct findings, *Science* will be retracting it editorially as well.

We have been providing, on *Science's* Web site, a running chronology of this problem since it was first identified, along with editorial updates in an effort to provide the scientific community with information about the status of the research and our efforts to support investigations of its conduct at Seoul National University and at the University of Pittsburgh.

We are doing a systematic review of the editorial history of both papers and our procedures for evaluating them, to search for ways in which we might improve those. I have pointed out in the past that even unusually rigorous peer review of the kind we undertook in this case may fail to detect cases of well-constructed fraud. To support this effort, we are calling on outside experts, including members of our Board of Reviewing Editors and our Senior Editorial Board.

They and we will be considering options for providing additional procedural safeguards. These could include, for example, requiring all authors to detail their specific contributions to the research submitted, and to sign statements of concurrence with the conclusions of the work. We are implementing improved methods of detecting image alteration, although it appears improbable that they would have detected problems in this particular case.

Fraudulent research is a particularly disturbing event, because it threatens an enterprise built on trust. Fortunately, such cases are rare -- but they damage all of us. Fraud is unlikely to be eliminated completely through the process of scientific publishing, and truth in science ultimately depends upon confirmation. But at *Science*, we are determined to do everything in our power to evaluate our own procedures for detecting research misconduct, and we will communicate the results of this effort to the scientific community when it is complete.

--Donald Kennedy, Editor-in-Chief, *Science*  
10 January 2006