tion chief at NIH now helping with the Williams panel inquiry, points out that physicians themselves are partly responsible for this situation. She says that M.D.s don't pursue jobs at NIH, because physicians with experience comparable to NIH section chiefs can earn twice as much elsewhere. Busy physicians rarely serve as reviewers.

Reviewing peer review. Gordon Williams.

Roy Silverstein, president of the American Federation for Clinical Research, agrees that physicians share the blame for their absence from study sections. In a talk before the Williams panel on 10 June, Silverstein offered a solution: NIH should adopt a new mandatory service rule akin to jury duty. He said NIH should require all investigators who receive NIH funding to accept invitations to serve on a study section at least once every 8 years. The goal would be to "increase the number of reviewers who are knowledgeable about clinical research." Silverstein also urged NIH to set up a special study section to give special attention to clinical proposals that fall just below the payline. This group, according to Silverstein, could "recommend a specified number of these clinical research projects to be supported by a contingency fund, possibly in the director's office."

Baldwin isn't enthusiastic about the request for a new study section. Probably "20 different groups" have come up with this solution for problems in their fields, she says. Besides, clinical research is a broad category; Baldwin thinks it would be hard to create a panel that could handle everything under that heading. Finally, Baldwin says it's not clear that clinical proposals are being treated unfairly. She's withholding judgment until she sees the final report of the Williams committee, which will include a detailed analysis of how reviewers treated proposals this year.

As for Williams, he strongly suspects that the final report "is going to say we have a very substantial problem," although he isn't ready to say what changes it may recommend. At the same time, he recognizes that "we wouldn't be having this discussion" if NIH were able to fund more grants. The budget crunch, Williams concedes, is "driving the whole problem."

–Eliot Marshall

CHEMISTRY

Underhanded 'Breakthrough' Revealed

It was "just too good to be true," chemist Tony Barrett of London's Imperial College told *Science* 6 weeks ago about a startling new discovery by German chemists (*Science*, 13 May, p. 908). Barrett's circumspection about the discovery, which seemed to represent a breakthrough in the mystery of the "handedness" of such biomolecules as protein and DNA, has proved well-founded. Last week, the head of the team that carried out the work, Eberhard Breitmaier of the University of Bonn, retracted the results in a letter to the journal that published the original paper. One of the members of his team, he explained, had manipulated the experiments.

To many chemists, the announcement comes as a relief as well as a shock. Although they initially hailed the result, which appeared to have major implications for the pharmaceutical industry as well as for understanding of the origins of life, their doubts had been growing. As word had spread about the paper, which was published in the German journal *Angewandte Chemie* in February, many groups had tried and failed to repeat the experiment and had spotted inconsistencies in the data. If the Bonn team had stood by the results, it "could have become organic chemistry's version of cold fusion," says organic chemist T.V. RajanBabu of Dupont's Central Research and Development department in Wilmington, Delaware.

According to the paper, a static magnetic field can force chemical reactions that ordinarily produce equal amounts of two mirror-image molecules, or enantiomers, to favor one form. Although chemists were hard-pressed to understand how a magnetic field could skew the reactions Breitmaier and his colleagues studied, they pointed out that Earth's magnetic field could have had the same effect on the first biological molecules. That might explain why, for example, DNA in nature is almost always a right-handed helix. The discovery also seemed to offer a ready way to make single-enantiomer drugs —important because the two mirror-image forms of some drugs have very different effects in the body.

But warning signs in the paper made some researchers wary. RajanBabu, for example, says that he was skeptical from the start. The Bonn group had used nuclear magnetic resonance (NMR) spectroscopy to detect the relative quantities of the two enantiomers, but "the NMR spectra in the paper were clearly wrong," says RajanBabu. "It was a dead giveaway." Despite repeated attempts, he and his colleagues Chris Roe and Gary Halliday could not replicate the German results, even when they applied a magnetic field three times as strong as the Bonn group used. RajanBabu then asked Al Meyers of Colorado State University to attempt the experiments. Meyers' team was just completing the experiments as *Science* went to press, and it too drew a blank. Meyers says he isn't surprised. The magnetic field simply doesn't have enough energy to bias the reaction, he says. "On a theoretical level, there is just no way in hell that it could be true."

In all, says Peter Gölitz, editor of *Angewandte Chemie*, at least 20 groups were working on the problem, and many were getting negative results. But when several groups sent researchers to Breitmaier's lab to try the experiment there, the magnetic field seemed to work as advertised, which led to suspicions that something about the apparatus or starting materials was affecting the outcome. According to his letter, Breitmaier himself then instructed three experienced co-workers, none of whom had worked on the original paper, to carry out the most important of the reactions without the participation of Guido Zadel, the postdoc on whose thesis the original work was based.

This time the magnetic field had no effect. These researchers also found that starting materials prepared by Zadel for the experiments contained significant amounts of a single-enantiomer additive. Breitmaier and his colleagues believe the additive biased the reaction, deceiving other members of the team into thinking that the applied magnetic field was responsible.

In his letter, Breitmaier says that Zadel has now admitted this deception and two other manipulations of the scientific data in front of witnesses. Breitmaier and the two remaining co-authors, Catja Eisenbraun and Gerd-Joachim Wolff, have now disassociated themselves from all the experimental results in the paper. Breitmaier told *Science* this week that he was "very shocked" by the whole affair but would not elaborate until the university has completed an investigation.

Other chemists, meanwhile, are taking the episode as a reminder that the more important a finding seems, the more caution it demands. As Barrett of Imperial College puts it, "You should never rush to publish a fantastic new finding—get a trusted colleague to check it for you first." Meyers sees a lesson for would-be frauds, as well. "If you are going to cheat, cheat on something so unimportant that no one will repeat it."

–Daniel Clery and David Bradley

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