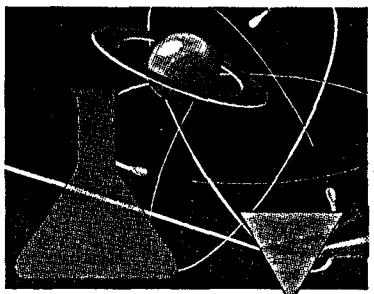


SCIENCE & TECHNOLOGY

BOOKS

IMPURE SCIENCE: FRAUD, COMPROMISE AND POLITICAL INFLUENCE IN SCIENTIFIC RESEARCH
By Robert Bell
John Wiley & Sons
301 pp., $23

When Fraud Taints Science

By Simson L. Garfinkel

CALIFORNIA'S twin temblors in late June were a pointed reminder that the state bears a greater risk from earthquakes than any other. To meet that risk, California has developed one of the most respected crop of earthquake scientists in the world.

It therefore came as a surprise to many in California's scientific community when the National Science Foundation (NSF) awarded a $25 million grant to create the national Earthquake Engineering Research Center not at one of the many prestigious research universities in California, but at the State University of New York at Buffalo. The decision was all the more surprising considering SUNY-Buffalo's proposal: Rather than concentrate on the impact of earthquakes in the Western part of the country, focus on earthquake damage in the Eastern United States, which is far less costly to the federal government. And acknowledging that it lacked the expertise, SUNY proposed to recruit the top names in earthquake research – many, one would suppose, from California itself!

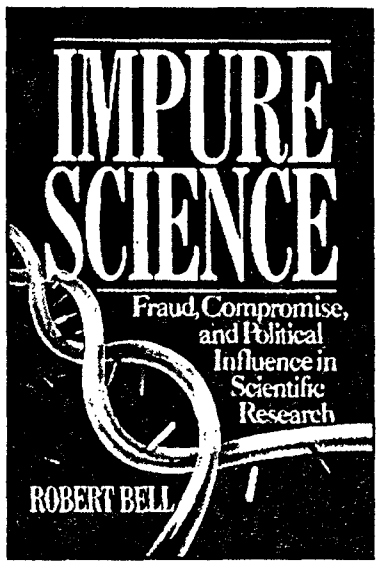
The NSF Earthquake Engineering Research Center is but one of many cases explored in detail by Robert Bell in "Impure Science." In this book, which is sure to be loathed by the old-guard scientific establishment, Bell shows time and again how the supposedly "objective" scientific-research process is subverted by ego, infighting, and the lure of cold cash.

Bell opens his well-researched account with a stunning attack on the scientific community's sacrosanct system of "peer review," which he says often means "review by one's competition" in today's highly competitive world of scientific research.

Scientists use peer review for everything from deciding which grants to approve to choosing which articles get published in the prestigious journals. But all too often, writes Bell, peer review simply becomes a process by which powerful, well-established scientists can reward their friends and frustrate their rivals.

The review panels are often kept secret or restricted for apparently political reasons, he writes. In the case of the national earthquake center, for example, the peer-review panel was curiously without any earthquake engineering experts from states west of the Rockies.

In the realm of military contracting, flaws in the peer-review process frequently result in weapons systems being approved for development before their research and engineering phase is completed. The reason for this practice, called "concurrency," is



simple: Once a weapons system has moved into development, there is so much money flowing and so many vested interests that the project is impossible to kill.

That's what happened with the Apache attack helicopter, contends Bell. The helicopter showed problems in the early 1980s but still went into full production, only to fail in the sands of Saudi Arabia during the Persian Gulf war. An even more costly example is the Strategic Defense Initiative, or "star wars," which owes its livelihood to a grossly exaggerated report on the virtues of X-ray laser that Dr. Edward Teller gave President Reagan in 1982.

But the greatest problem in today's scientific community may well be fraud, writes Bell. While the extent of the problem is unknown, one thing is clear: Allegations of fraud often destroy the reputation of the person who makes the allegation, not the person who is caught.

Accusing a well-known scientist of misconduct is serious stuff. In painstaking detail, Bell analyzes the notorious "David Baltimore Case," in which a junior scientist accused one of the co-authors of a groundbreaking paper of fraud. Baltimore, a recipient of the Nobel Prize, put his reputation on the line, relentlessly attacked the junior scientist, and destroyed her career. An investigation by Rep. John Dingell (D) of Michigan, finally succeeded in bringing the truth to light – the data that were the basis of the paper were indeed faked.

Bell shows again and again how fraud, particularly in the field of medical research, has resulted in deadly drugs being left on the market and faulty heart valves being implanted in people's chests.

Surprisingly, "Impure Science" doesn't recommend more federal regulation of the sciences. Instead, Bell calls for more protection for whistle-blowers and an increased use of the Federal False Claims Act to prosecute cases of scientific fraud for what they truly are: fraud against the government and US citizens.

■ *Simson L. Garfinkel is a freelance writer who specializes in science and technology.*