Three Cases of Alleged Scientific Misconduct

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Three high-profiles cases of alleged lapses of scientific integrity have come to light over the last ten years. None of them is the same league as Leeka Kheifets and John Swanson's electric-field gambit (see "The Real Junk Science of EMFs"). Here's a quick rundown:

• Robert Liburdy of the Lawrence Berkeley National Lab fudged some graphs that were published in two 1992 papers. Seven years later, the U.S. Office of Research Integrity (ORI) forced him to withdraw those figures —but not his scientific results— and barred him from receiving federal research money for three years (see *MWN,* J/A99, p.1). Soon afterwards, Liburdy gave up research and became a science advisor at a law firm.

• Jim Lin, of the University of Illinois in Chicago, faced an ORI investigation after being accused of including experimental results generated by other scientists into an NIH grant application without proper acknowledgment. He denies the alleged misconduct. (His project wasn't funded.) In a 2006 settlement, ORI mandated tighter oversight of Lin's government-sponsored work and he was barred from serving on certain advisory and peer review panels. Lin remains at the University of Illinois and continues to serve as the editor-in-chief of *Bioelectromagnetics.*

• Hugo Rüdiger of the Medical University of Vienna was accused of using falsified data in two papers which show that cell phone radiation can cause DNA breaks. The head of the medical school referred the case to its Council on Ethics in Science. In November 2008, following a six-month inquiry, the panel reported that it had found no proof that any of the data was fabricated. Rüdiger had retired from the university some months before the investigation began. Neither paper has been withdrawn.

These are the bare-bone facts. In all three cases, what went on behind the scenes provides some much-needed perspective.

Liburdy and Lin may well be guilty of sloppiness but not much more. Their real "mistakes" had more to do with imperiling industry agendas than scientific misconduct. The two Liburdy papers that were at the center of the investigation were minor works that are rarely cited. At about the same time they appeared in print, Liburdy published another paper in the *Journal of Pineal Research* that had the potential to cause major problems for the electric utilities. The work showed that very weak magnetic fields could affect the influence the growth of breast cancer cells. By the time the allegations against him had surfaced in public, others had repeated this experiment and the work looked solid. Liburdy now had a repeatable, low-level effect that was in direct conflict with the industry claim that such effects are impossible (see "When Enough Is Never Enough"). Activists started using it to argue that the old paradigm had to change. If such weak EMFs could modulate breast cancer, they argued, those same fields could also promote childhood leukemia, Alzheimer's and Lou Gehrig's disease.

The realization that Liburdy had some powerful enemies became apparent when news of his case showed up on the front page of the *New York Times* under the headline, "Data Tying Cancer to Electric Power Found To Be False." The story, though written by a veteran science reporter, Bill Broad, was stunningly inaccurate. It had clearly been planted. The two Liburdy papers in dispute had nothing to do with cancer. Curiously, Broad had made a Freudian slip of sorts because, as many believe, it may well have been the breast cancer work that ruined Liburdy's career: That study does in fact tie electric power to cancer. The only catch is that no one has ever suggested that Liburdy had doctored the breast cancer experiment.

Lin's infraction of the rules was even less serious than Liburdy's. "It was relatively minor," John Dahlberg, a senior ORI investigator told us. "We felt this case should not have come to us," he said. Lin had, in fact, permission to use the disputed figure and its original owners had no quarrel with what he had done.

In this case, just as in Liburdy's, unseen forces were at work. Grant proposals are supposed to be confidential yet some reviewer — here again, no one knows who— sounded the alarm. Once Lin's reputation was in play, the knives came out. Motorola operatives tried to have him removed as the editor of *Bioelectromagnetics*. Lin's real crime was not unlike Liburdy's: He had become a threat to industry —in this case, the cell phone manufacturers.

Lin is an insider, not a radical. He is a member of ICNIRP, one of the most exclusive EMF clubs. A couple of years earlier, he had taken a principled stand and argued publicly against an industry scheme to adopt a more lenient cell phone exposure standard (see *MWN,* J/A00, p.8). Separately, Lin had also dared question whether industry funding could affect research outcomes. Motorola and others in the industry wanted to relax the limit and resented Lin's interference. In the end, the industry campaign against Lin failed, but only by a very thin margin.

The Rüdiger affair is more complicated, but he, like Lin, is seen as a threat by the cell phone industry. The two Rüdiger papers that

have been under siege are widely cited as supporting the work of Henry Lai and N.P. Singh who had reported similar effects on DNA ten years earlier. Together the Rüdiger and Lai-Singh experiments have been cited to support the claim that cell phones could lead to brain cancer.

The attacks on Rüdiger came from two different directions, both with strong ties to industry. A number of industry-friendly scientists waged a fierce and nasty crusade against Rüdiger (some, like Alex Lerchl continue today) on the grounds that his data were statistically suspect and therefore the experiment had to have been rigged. Later one of Rüdiger's medical school colleagues, who is also allied to industry, joined the fray and accused Rüdiger's lab tech of falsifying the results. In the end, despite all the charges, no one could come up with any evidence of misconduct.

scientific misconduct, Alexander Lerchl, Hugo Rüdiger, James Lin, William Broad, Robert Liburdy,

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