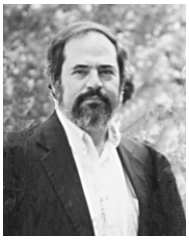
NOTE: After Mallove wrote this article, all of the *Accountability in Research* papers were added to the LENR-CANR.org library.

BREAKING THROUGH

Ethics in the Cold Fusion Controversy

by Eugene F. Mallove, Sc.D.



Long time *Infinite Energy* readers are aware that we have repeatedly and vigorously discussed ethical issues that attend the multifaceted cold fusion controversy, a battle within the scientific community that has been roiling and boiling since March 1989. Thus, we were happy to receive a copy of the academic journal *Accountability in Research* (Vol. 8, Nos. 1-2, 2000), in which eight essays assess, in the words of Editor-in-Chief Dr. Adil E. Shamoo, "The Ethical Import of the Cold Fusion Controversy." This material makes up 90% of this journal issue and is a worthwhile 162-page collection of comment and history. Unfortunately, the journal is not widely available except in specialized libraries.[1]

Dr. Shamoo, of the Department of Biological Chemistry at the University of Maryland School of Medicine, states in his lead editorial that he had formerly assumed that cold fusion had been debunked. That is, until plasma physicist Dr. Robert Terry politely told him that "the jury was still out" on the subject. Shamoo admits that in his teaching about research ethics he had often used the cold fusion episode as an example of how the "self-correcting nature of science" works. Now his view is entirely different, summarized in this key passage from his editorial:

"I find it disconcerting that competent and accomplished researchers are unable to have an open discourse about a scientific controversy in a democratic and open society. These are serious lapses from a profession (physics) that professes the highest standards of accountability. The leadership of research enterprise was lacking during the controversy. For these reasons, it is important that eleven years after the first report on cold fusion results that we discuss the process and how it impacted policy decisions. More importantly, we have to learn from this experience how to deal with these kinds of controversies in the future. Our national interest requires that we do a better job."

Shamoo was led to cold fusion theorist Dr. Scott R. Chubb, of the U.S. Naval Research Laboratory, who provided the necessary perspective and helped organize this special issue of *Accountability in Research*. Chubb introduces the series of papers by some of those who have participated in or who have reviewed the cold fusion controversy: Martin Fleischmann, "Reflections on the Sociology of Science and Social Responsibility in Science, in Relationship to Cold Fusion"; Steven E. Jones, "Chasing Anomalous Signals: The Cold Fusion Question"; David Goodstein, "Whatever Happened to Cold Fusion?"; Francesco Scaramuzzi, "Ten Years of Cold Fusion: An Eyewitness Account"; John O'M. Bockris, "Accountability and Academic Freedom: The Battle Concerning Research on Cold Fusion at Texas A&M University"; George H. Miley, "Some Personal Reflections on Scientific Ethics and the Cold Fusion 'Episode'"; David J. Nagel, "Fusion Physics and Philosophy."

Scott Chubb attributes the derailment of the proper handling of cold fusion to an early "breakdown in communication," which he writes, ". . .occurred early in the associated controversy as a result of an apparent consensus by mainstream scientists." He concludes: "Subsequently, although research in this area has continued, mainstream scientists are largely unaware of this fact. As a consequence, a large number of experiments have been carried out that are not widely known, in which positive Cold Fusion findings have been reported. Not only have these results failed to alter the predominant view that Cold Fusion is not possible, it appears that the establishment of this view, as a result of the consensus that was established early in the controversy, itself, has subverted the communication process. Thus the breakdown in communication has persisted."

Chubb is certainly correct in his assessment. I would fault him only for not identifying in more vigorous terms the driving culprits of the misinformed consensus: 1) The biased Department of Energy Cold Fusion Panel, whose unethical rush to judgement in 1989 colored all future discussion of the subject; 2) The American Physical Society's tolerance of Dr. Robert Park as its mouthpiece—a consummate dispenser of misinformation and bigotry about cold fusion; 3) The complete abrogation of minimal ethical standards within "peer review," which permits such influential publications as *Science* and *Nature* to effectively *ban* scientific papers about cold fusion from their review process; and 4) The submissive sheep-like behavior of over 99% of so-called "science journalists," who have had every opportunity to investigate and expose the establishment farce for what it is, but who have deferred to what that establishment wants from them on cold fusion: silence.

Chubb outlines what might be called an idealized basis for science: "1) scientists seek the truth; 2) because they recognize that trial and error is part of the scientific process, when scientists find flaws in what they have done, they freely admit their mistakes, attempt to correct them, and try a new approach. Thus, in an idealized situation, scientists are accountable only to themselves, and their community. If they are truthful in these endeavors, their accountability, as scientists, has been fulfilled." Clearly, this has not happened in the cold fusion controversy, as some of the essays in this very issue of *Accountability* attest.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Perhaps the most egregious example is the essay by Dr. David Goodstein of Caltech, a reprint of his 1994 essay in *The American Scholar,*

"Whatever Happened to Cold Fusion?" The essay was wrongminded in 1994; it is even more preposterous being reprinted in 2000. (For the sake of Goodstein's reputation, its stale message should not have been included, but we can still learn from it.) Goodstein lamely admits in a five-sentence introduction: "In the years since then [1994] much has happened, but little has changed. There have been reports of increasingly reliable production of excess heat, and of the detection of ^{4}He residue, and much more. Nevertheless, the most remarkable fact remains that cold fusion has neither been accepted by mainstream science, nor has it withered away. The general situation that the [1994] article describes still seems to be in place today."

Of course nothing has changed, when a "scientist," such as Dr. Goodstein, is so disinterested, disbelieving, and uninvolved that he learns or says nothing new and dredges up an old essay in which "good cold fusion" (neutron measurements) is distinguished from "bad cold fusion" (excess heat measurements). Goodstein did not self-correct. Goodstein is not accountable—not even to himself, in the terms outlined by Chubb. Goodstein terms cold fusion a "bizarre and ugly episode in the history of science." He exults that at the Baltimore American Physical Society (APS) meeting of May 1, 1989, his Caltech colleagues Steven Koonin, Nathan Lewis, and Charles Barnes "executed between them a perfect slam-dunk that cast Cold Fusion right of the arena of mainstream science." Not mentioned by Goodstein, of course—not even in a footnote—is the published record showing that the Lewis assessment, in particular, was fatally flawed and has been so characterized and challenged in peer-reviewed publications.

Dr. Martin Fleischmann in his essay provides a comprehensive historical review of the thinking which led him and Stanley Pons to experiment with the deuterium-palladium system in the mid-1980s. He touches on social and media questions, though not heavily. And, he addresses the role that military security issues may have played in the controversy. At one point he makes a very pertinent remark: "One outcome of this research has been the demonstration that scientists have developed a blindness for accepting unusual results. No doubt this is due in part to an excessive faith in invalid paradigms." Dr. Bockris makes an equally compelling comment: "A comfortable illusion of the 20th Century—held not by scientists themselves, but by the tax payers—is that scientists are, somehow, above the fray and highly honest. What a lot of nonsense this is!"

Dr. Steven Jones in his skeletal three-page commentary confirms that he still trusts his sparse cold fusion neutron measurements—fair enough. But Jones, the egocentric denier of excess heat claims from day one, apparently has learned nothing and still knows nothing about the process of science. He is an example of the kind of scientist identified in the Bockris quote above. Jones writes disingenuously, "It is high time to strongly question claims of cold fusion based on crude techniques and to demand tests at a rigorous scientific-proof level. . .I have not seen any compelling evidence of any 'cold fusion' effects to date."

The main virtue of this special issue of *Accountability* is that discussion of cold fusion has been brought to a larger and different academic audience. Like Editor-in-Chief Shamoo, that audience may have believed the prevailing myth that cold fusion was honestly debunked in 1989. Newcomers will be able to learn from the scientific papers cited in many of the essays that this is not true. What effect this enlightenment may have in wider academe is uncertain, but it could not hurt the cause of truth.

This is not to say that this issue of *Accountability* has no shortcomings. It does. These are mainly failures of omission or insufficient emphasis:

• The absence of discussion of the questionable, *i.e.* fraudulent, "null" calorimetry experiment at the MIT Plasma Fusion Center; also no discussion of unethical press manipulation by MIT hot fusion personnel, timed for the historically critical May 1, 1989 APS meeting.

• No mention of *Nature* and *Science* magazines' particular roles as negativist actors in the cold fusion drama; no discussion by any commentator of the well-known refusal by *Nature* to publish scientific correspondence which questioned the Caltech "null" calorimetry experiments.

• No discussion of the documented pre-existing biases of those selected for the 1989 DOE Cold Fusion panel, nor any discussion of the ethical failures of some of these individuals to correct an all too evident past mistake.

• Virtually no discussion of the ethics and legality of various government agencies that hid—and continue to hide—positive excess heat results (*e.g.,* MIT Lincoln Laboratory in its secretly funded replication of the Randell Mills electrolysis experiment); no discussion of laboratory directors, *e.g.* at Los Alamos National Laboratory, ignoring internally peer-reviewed positive results in cold fusion experiments.

This is not an exhaustive list, but these are some of the issues that should fuel future discussions about ethics in science in the matter of cold fusion. To be sure, these examinations will have a much different and more compelling character when the phenomena of cold fusion eventually gain the wide support they should have had over the past almost one dozen years.

[1]*Accountability in Research* can be purchased from: Gordon and Breach Science Publishers, 1-800-545-8398, for $54. Ask for Vol. 8, Nos. 1-2, 2000.