Why the GMO Venture Is Scientifically Unsound —

from the Perspectives of Both Biological Science and Computer Science

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Altered Genes, Twisted Truth
*How the Venture to Genetically Engineer Our Food Has Subverted Science,
Corrupted Government, and Systematically Deceived the Public*

Contrary to the claims of its proponents, the massive venture to reconfigure the genetic core of the world's food supply has not been conducted in alignment with science but in significant conflict with sound scientific principles. For instance, its purported safety was initially based on assumptions about the nature and dynamics of DNA that have been decisively discredited, and yet its advocates continue to assert its safety as if those assumptions are still somehow legitimate. Further, although a substantial number of well-conducted studies published in peer-reviewed journals have detected statistically significant harm to the laboratory animals that consumed genetically engineered (GE) food, the proponents either ignore or unjustly attack this evidence.

The unsoundness of the GE food venture, and the extent to which the aggregate evidence weighs against its safety, are attested by the well-documented fact that its proponents have needed to routinely and systematically misrepresent the evidence in order to sustain it.

Moreover, besides being both theoretically and empirically unsound from the standpoint of biological science, the GE food venture is outright reckless when assessed from the perspective of computer science. While computer scientists have gained substantial knowledge about the inescapable risks of altering complex information systems, and established precautionary measures for managing those risks, the biotechnicians have routinely disregarded this knowledge and violated the related precautionary principles — despite the fact that the cellular information systems they reconfigure are far bigger, far more complex, and far less understood. Indeed, compared to the meticulous manner in which software engineers revise life-critical information systems that they themselves have created, the radical way in which biotechnicians have been altering complex cellular information systems does not even deserve to be called "engineering."

Furthermore, even the newest so-called gene editing techniques (such as CRISPR-Cas9) are, when scrutinized through the lens of computer science, significantly imprecise and unacceptably risky.

Although analyzing genetic engineering from the standpoint of software engineering is crucial for a proper understanding of the risks, a thorough examination did not appear until the publication of *Altered Genes, Twisted Truth*. The soundness — and the importance — of this examination have been recognized by many experts. For instance, Thomas J. McCabe, developer of the cyclomatic complexity software metric, a key analytic tool in computer programming employed throughout the world, has called it "especially insightful" and remarked that it exposes how genetic engineering "is more like a 'hackathon' than a careful, systematic methodology for revising complex information systems."