



"One of the most important books of the last 50 years. It will go a long way toward dispelling the confusion and delusion that has been created regarding the genetic engineering process and the foods it produces. ... Steven Druker is a hero. He deserves at least a Nobel prize."

– *From the Foreword by Jane Goodall, PhD, DBE, UN Messenger of Peace*

"This incisive and insightful book is truly outstanding. Not only is it well-reasoned and scientifically solid, it's a pleasure to read – and a must-read. Through its masterful marshalling of facts, it dispels the cloud of misinformation that has misled people into believing that GE foods have been adequately tested and don't entail abnormal risk."

– **David Schubert, PhD Professor and Head of Cellular Neurobiology, Salk Institute for Biological Studies**

# ALTERED GENES, TWISTED TRUTH

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

**By Steven M. Druker**

Genetic engineering, also known as bioengineering or recombinant DNA technology, restructures the genomes of living organisms by moving, splicing, and re-arranging pieces of DNA in ways that are unnatural and were formerly impossible. This revolutionary technology was developed in the early 1970s, and since the 1980s, there has been a massive endeavor to employ it to reconfigure the genetic core of the world's food supply.

In his groundbreaking book, **ALTERED GENES, TWISTED TRUTH** (Clear River Press; March 20, 2015), Steven Druker exposes how this mammoth venture has been chronically and crucially dependent on deception. The chapters form a lively and engaging narrative revealing how, for more than thirty years, thousands of biotech advocates worldwide (including many respected scientists and scientific institutions) have systematically compromised science and contorted the facts in order to foster the growth of genetic engineering and get the foods it produces onto our dinner plates. Using transcripts from scientific conferences, statements by government agencies, newspaper reports, journal articles, books by historians of science, and inside information from scientists who witnessed events firsthand, Druker provides a graphic account of how this elaborate sham has been perpetrated – and how it not only deceived the media and the general public, but the U.S. Congress and a host of influential individuals such as Bill Clinton, Bill Gates, and Barack Obama.

Notably, Druker uncovered some of the key evidence through a lawsuit. As a public interest attorney and executive director of the Alliance for Bio-Integrity, he initiated an action that forced the U.S. Food and Drug Administration (FDA) to divulge its files on genetically engineered (GE) foods. This revealed that politically influenced officials had covered up the extensive warnings of their own scientists about the abnormal risks, misrepresented the facts, and then violated the law by allowing these novel products to be marketed without having been proven safe through rigorous testing. In organizing the suit, he assembled an unprecedented coalition of eminent scientists to stand with his organization as co-plaintiffs – the first time scientists had sued a U.S. administrative agency on the grounds that one of its policies is scientifically unsound.

**ALTERED GENES, TWISTED TRUTH** demonstrates how the FDA's fraud has been the pivotal event in the commercialization of genetically engineered foods, not only enabling them to be marketed and accepted in the United States, but setting the stage for their sale in numerous other nations as well. And it reveals that if the

FDA had told the truth, followed science, and obeyed the law, GE foods would most likely never have gained commercialization anywhere.

In other eye-opening disclosures, the book documents how genetic engineering's first ingestible product (a food supplement produced via genetically altered bacteria) induced a deadly epidemic; how the evidence points to the genetic manipulation as the most likely cause of the highly unusual toxic contamination that occurred; and how, if the critical facts had been publicized rather than suppressed, the GE food venture would likely have collapsed – or at least been compelled to develop far more prudently. It also documents how well-conducted tests of GE foods with laboratory animals have yielded many troubling results – and how both the research and the researchers have been viciously and unjustly attacked by biotech proponents, to the extent that several scientists have been vilified, and even lost their jobs, merely for doing what scientists are supposed to do.

The book further reveals that besides entailing unacceptable risks, the GE food venture has failed to deliver the promised benefits. For instance, proponents repeatedly claimed that GE crops would substantially boost yields and reduce dependence on synthetic fertilizers and pesticides. But extensive evidence refutes these claims. Thus, the overall environmental effect has been shown to be negative, and not only have many beneficial organisms been harmed, there has been a major *increase* in herbicide use due to GE crops. Moreover, genetic engineering has not augmented yields to the degree it was supposed to, and numerous studies in sub-Saharan Africa have demonstrated that it is *not* needed and that sustainable agroecological techniques can achieve much greater increases than have any GE crops.

In all, through its comprehensive scope and incisive analysis, **ALTERED GENES, TWISTED TRUTH** clearly establishes that the degradation of science it documents has been unprecedented – and that in no other instance have so many scientists so seriously subverted the standards they were trained to uphold, misled so many people, and imposed such magnitude of risk on both human health and the health of the environment.

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## **About the Author**

**Steven M. Druker** is a public interest attorney, founder and executive director of the Alliance for Bio-Integrity, and prominent commentator on the risks of GE foods. He has served on the food safety panels at conferences held by the National Research Council and the FDA, has been invited to present lectures at numerous universities (including Harvard, Columbia, Cornell, and the University of Copenhagen), and has met with government officials throughout the world, including the UK's Environmental Minister and the heads of food safety for the UK, France, Ireland, and Australia. He has also conferred at the White House Executive Offices with an interagency task force of President Clinton's Council on Environmental Quality. His articles on GE food have appeared in several respected publications, including *The Congressional Quarterly Researcher*, *The Parliament Magazine*, and *The Financial Times*. He earned both his B.A. (in philosophy) and his Juris Doctor from the University of California, Berkeley and received significant honors at both levels. He was elected to Phi Beta Kappa in his junior year, graduated with "Great Distinction in General Scholarship," and received a special award from the philosophy department for "Outstanding Accomplishment." He subsequently was elected to both the California Law Review and the Order of the Coif (the legal honor society).

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## ALTERED GENES, TWISTED TRUTH: Main Points

- Numerous scientists (including those on the US Food and Drug Administration's Biotechnology Task Force) have concluded that the process of creating genetically engineered (GE) foods radically differs from conventional breeding and entails greater risk.
- Consequently, not only has there never been a consensus within the scientific community that GE foods are safe, many eminent experts have issued cautions, as have respected scientific organizations like the Royal Society of Canada, the British Medical Association, and the Public Health Association of Australia.
- In contrast to the experts who counsel caution, many scientists and scientific institutions that promote GE foods have systematically suppressed evidence and distorted the truth in order to advance them.
- In fact, the GE food venture has been chronically and crucially reliant on such deceptions and could not have survived without them.
- GE foods first achieved commercialization only because the US Food and Drug Administration covered up the extensive warnings of its own scientists about their abnormal risks, misrepresented the facts, and deliberately violated federal food safety law by allowing them onto the market without having been proven safe through standard testing.
- Yet, the FDA and other GE proponents have created so much confusion that although US food safety law in regard to GE foods is much stricter than EU law, most people are under the illusion it's weaker – and don't realize that these inadequately tested foods have entered the American market, not due to failure of the law, but to the FDA's failure to obey it.
- Moreover, not only did GE foods gain entry to the market through a major fraud, their continued marketing has depended upon its continuation – and its augmentation by a stream of misleading statements from scientists and scientific institutions that have likewise abused their positions of authority.
- Through these misrepresentations, the manifold problems caused by GE foods have been obfuscated; and if they had instead been openly and accurately reported, the agricultural bioengineering enterprise would have collapsed.
- For example, most people are unaware that, contrary to the claims of biotech advocates, humans have indeed been harmed by consuming the output of genetic engineering – and that the technology's first ingestible product (a food supplement of the essential amino acid L-tryptophan produced via genetically altered bacteria) induced an epidemic that killed dozens of people and seriously sickened thousands (permanently disabling many of them). Moreover, the evidence points to the genetic alteration as the most likely cause of the highly unusual contamination that rendered the supplement toxic.
- Nor is it well known that numerous laboratory animals have also suffered from eating products of genetic engineering and that many well-conducted tests with GE crops (published in peer-reviewed scientific journals) have yielded troubling results, including intestinal abnormalities, liver disturbances, and impaired immune systems.
- Additionally, besides being unsound from the perspective of biological science, the GE food venture is outright reckless when examined in light of computer science; and 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 alter complex cellular information systems that are much more complex and far less understood is not really "bioengineering" but brash *biohacking*.
- Thus, contrary to the assertions of its proponents, the massive enterprise to reconfigure the genetic core of the world's food supply is not based on sound science but on the systematic subversion of science – and would implode if subjected to an open airing of the facts.

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## Additional Praise for ALTERED GENES, TWISTED TRUTH

“A landmark. It should be required reading in every university biology course.”

— **Joseph Cummins, PhD** Professor Emeritus of Genetics, Western University, London, Ontario

“A great book. The evidence is comprehensive and irrefutable; the reasoning is clear and compelling. No one has documented other cases of irresponsible behavior by government regulators and the scientific establishment nearly as well as Druker documents this one. His book should be widely read and thoroughly heeded.”

— **John Ikerd, PhD** Professor Emeritus of Agricultural and Applied Economics, University of Missouri

“*Altered Genes, Twisted Truth* is lucid, illuminating, and alarming. As a former New York City prosecutor, I was shocked to discover how the FDA illegally exempted GE foods from the rigorous testing mandated by federal statute. And as the mother of three young kids, I was outraged to learn how America’s children are being callously exposed to experimental foods that were deemed abnormally risky by the FDA’s own experts.”

— **Tara-Cook Littman, JD**

“*Altered Genes, Twisted Truth* is very readable, thorough, logical and thought-provoking. Steven Druker exposes shenanigans employed to promote genetic engineering that will surprise even those who have followed the ag-biotech industry closely for years. I strongly recommend his book.”

— **Belinda Martineau, PhD** Molecular biologist, a co-developer of the first GE whole food, and author of *First Fruit: The Creation of the Flavr Savr Tomato and the Birth of Biotech Foods*

“A fascinating book: highly informative, eminently readable, and most enjoyable. It’s a real page-turner and an eye-opener.”

— **Richard C. Jennings, PhD** Department of History and Philosophy of Science, Director of Studies in Philosophy for Homerton and Queens’ Colleges, University of Cambridge, UK

“Steven Druker has done a beautiful job of weaving a compelling scientific argument into an engaging narrative that often reads like a detective story. The examination of genetic engineering from the standpoint of software engineering is especially insightful, exposing how the former is more like a ‘hackathon’ than a careful, systematic methodology for revising complex information systems.”

— **Thomas J. McCabe** Developer of the cyclomatic complexity software metric, a key analytic tool in computer programming employed throughout the world

“What Ralph Nader’s *Unsafe at Any Speed* was to the auto industry and what Rachel Carson’s *Silent Spring* was to synthetic pesticides, *Altered Genes, Twisted Truth* will be to genetically engineered food.”

— **Joan Levin, JD, MPH**

“A remarkable work. If the numerous revelations it contains become widely known, the arguments being used to defend genetically engineered foods will be untenable.”

— **Frederick Kirschenmann, PhD** Distinguished Fellow, Leopold Center for Sustainable Agriculture, Iowa State University

“Steven Druker’s meticulously documented, well-crafted, and spellbinding narrative should serve as a clarion call to all of us.”

— **Stephen Naylor, PhD** CEO and Chairman of MaiHealth Inc. Professor of Biochemistry and Molecular Biology, Mayo Clinic (1991-2001)