In precisely 13 words—the beginning of the preface—the reader will have little about doubt the message that follows in a new, intriguing, and badly-needed book, "Getting Risk Right" (Columbia University Press) by Dr. Geoffrey Kabat, a Cancer Epidemiologist at the Albert Einstein College of Medicine in New York.

"WHY DO THINGS THAT ARE UNLIKELY TO HARM US GET THE MOST ATTENTION?"

Only the details need follow, and because Kabat chooses these details wisely, he makes his point quite clearly—that Americans, often through no fault of their own, are doing a poor job of assessing risk. We overreact to miniscule or theoretical risks, under react to real ones, and end up making poor decisions as a result.

The timing could hardly be better, since intentional confusion about fear is an increasingly powerful, calculated tool used to sway consumer purchasing habits and behaviors and solicit donations to non-government organizations, as well as by officials at government agencies to increase their job security and power.

It could be argued that we are being bombarded like never before by incessant propaganda in the form of false or misinterpreted studies and intentional slights of hand, leaving ordinary people with little choice other than to throw up their hands and simply give up trying to figure out what is right and what is wrong. Kabat's book will give them at least a fighting chance to critically evaluate the conflicting information that they are getting.

Dr. Kabat carefully selects examples of poor assessment of relative risk in a way such that any reader would gain an understanding of how wrong we're getting it and why. His second chapter, "Splendors and Miseries of Associations" examines our very different responses when confronted
with a theoretical or nonexistent risk as opposed to a very real one by comparing the different approaches elicited by comparing BPA, a ubiquitous component of plastic with the 2014 Ebola outbreak.

BPA can be detected in miniscule amounts in the urine of almost everyone in developed countries, since it has been used for 60 years in multiple products. However more than 99 percent of the chemical is rapidly metabolized and then eliminated in the urine so that it does not bioaccumulate.

"Is it possible that exposure to BPA poses some hazard to some people? Yes, we can never rule out the possibility of some effect. But, based on a large amount of accumulated scientific evidence, any adverse effect, if one exists, is likely to be very small."

Kabat then contrasts our fear of the chemical with that of the epidemic, where the cause and effect between the virus and illnesses were without doubt. The death rate from Ebola was 60 percent, and by the time the WHO declared the outbreak to be over, more than 11 thousand people had died. At one point, 40 percent of Americans were concerned about a major outbreak here, ignoring the fact that living conditions in West Africa—lack of proper medical care and infrastructure—were major contributors to the deaths, so the likelihood of a similar scenario developing in the US is slight. We overreacted to both, but for different reasons.

Kabat takes it a step further. The connection between BPA and human health effects is tenuous at best, while that of Ebola could not be more clear. Yet, neither is likely to do us much harm in the US. But something else is—flu, which causes tens of thousands of deaths per year, many of which could be avoided by an annual flu vaccine. Flu represents a case of a known, serious threat, yet people routinely fail to get the vaccine, while worrying about the tiny amount of BPA in food can liners.

Perhaps the most important aspect of the book is Kabat's comparison of two types of studies, observational and experimental. All studies are not equal. Far from it, although to most people they are indistinguishable. Observational studies are inferior by any measure. They involve collection of and analysis of previous data from unrelated studies, and are subject to multiple confounders (variables that add errors to a study), whereas experimental (prospective) studies are designed to examine a particular effect, and usually involve control groups as a comparator. Kabat clearly explains the difference, which will leave many readers wondering "why are these both called studies"?
Much of the misinformation we are exposed to is due to the Internet and poor or sensationalized headlines in the press. In the chapter "When Risk Goes Viral. Biases and Bandwagons" Kabat explains how a scientific paper, either or good and bad, triggers a series of events that ultimately results in a disconnect between the findings of the study and what the public will hear. After the following sequence: scientific literature, media reporting, regulatory recommendations, political agendas, and finally health narratives, we end up with information often bears no resemblance to what started as science.

"Media reporting of the results of scientific studies bearing on health risks exerts an influence in a class of its own."

This is no accident. Although there are many high quality studies on health, those that promote fear, especially by the use of alarmist, inaccurate headlines, get the attention. One notable example is the scare from the 1990’s about electromagnetic fields (EMF), generated from power lines, which were thought to have a dramatic impact on human health. When news shows interviewed scientists about the science, it was all but certain that there would be a photo or film clip of scary looking high voltage transmission lines. What was often left unsaid was that electromagnetic fields weaken very quickly with distance from the source. Although the EMF scare has been dismissed by the scientific community, the scares persist two decades later.

In subsequent chapters, Kabat applies similar logic and reasoning to debunk other common, but unfounded fears, such as the cell phone-brain cancer link, the assault on our endocrine systems from everyday trace chemicals, and the pervasive, but entirely incorrect "natural equals safe" mindset. His criticism of dietary supplements, and the law that made them possible is clear, compelling, and includes that back story of how these supplements got a free pass, despite the fact that they are untested and unregulated drugs.

It is not easy feat to take complex issues and make them both understandable, easily readable and interesting, but Kabat does just that in "Getting Risk Right." For people who are trying to sort through the deluge of conflicting information that we see every day, this book is a must.