Lies, Damned Lies, and Science: How to Sort through the Noise Around Global Warming, the Latest Health Claims, and Other Scientific Controversies (FT Press Science) By Sherry Seethaler

“Comprehensive, readable, and replete with current, useful examples, this book provides a much-needed explanation of how to be a critical consumer of the scientific claims we encounter in our everyday lives.” —April Cordero Maskiewicz, Department of Biology, Point Loma Nazarene University

“Seethaler’s book helps the reader look inside the workings of science and gain a deeper understanding of the pathway that is followed by a scientific finding—from its beginnings in a research lab to its appearance on the nightly news.” —Jim Slotta, Ontario Institute for Studies in Education, University of Toronto

“How I wish science was taught this way! Seethaler builds skills for critical thinking and evaluation. The book is rich with examples that not only illustrate her points beautifully, they also make it very interesting and fun to read.” —Julia R. Brown, Director, Targacept, Inc.

Don’t Get Hoodwinked! Make Sense of Health and Science News...and Make Smarter Decisions! Every day, there’s a new scientific or health controversy. And every day, it seems as if there’s a new study that contradicts what you heard yesterday. What’s really going on? Who’s telling the truth? Who’s faking it? What do scientists actually know—and what don’t they know? This book will help you cut through the confusion and make sense of it all—even if you’ve never taken a science class! Leading science educator and journalist Dr. Sherry Seethaler reveals how science and health research really work...how to put scientific claims in context and understand the real tradeoffs involved...tell quality research from junk science...discover when someone’s deliberately trying to fool you...and find more information you can trust! Nobody knows what new controversy will erupt tomorrow. But one thing’s for certain: With this book, you’ll know how to figure out the real deal—and make smarter decisions for yourself and your family!

Watch the news, and you’ll be overwhelmed by snippets of badly presented science: information that’s incomplete, confusing, contradictory, out-of-context, wrong, or flat-out dishonest. Defend yourself! Dr. Sherry Seethaler gives you a powerful arsenal of tools for making sense of science. You’ll learn how to think
more sensibly about everything from mad cow disease to global warming—and how to make better science-related decisions in both your personal life and as a citizen. You’ll begin by understanding how science really works and progresses, and why scientists sometimes disagree. Seethaler helps you assess the possible biases of those who make scientific claims in the media, and place scientific issues in appropriate context, so you can intelligently assess tradeoffs. You’ll learn how to determine whether a new study is really meaningful; uncover the difference between cause and coincidence; figure out which statistics mean something, and which don’t. Seethaler reveals the tricks self-interested players use to mislead and confuse you, and points you to sources of information you can actually rely upon. Her many examples range from genetic engineering of crops to drug treatments for depression...but the techniques she teaches you will be invaluable in understanding any scientific controversy, in any area of science or health.

Potions, plots, and personalities: How science progresses, and why scientists sometimes disagree

Is it “cause” or merely coincidence? How to tell compelling evidence from a “good story”

There are always tradeoffs: How to put science and health claims in context, and understand their real implications

All the tricks experts use to fool you, exposed! How to...
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- Sales Rank: #400986 in eBooks
- Published on: 2009-01-13
- Released on: 2009-01-13
- Format: Kindle eBook

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Praise for Lies, Damned Lies, and Science

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Preface

Be very, very careful what you put into that head, because you will never, ever get it out.

—Thomas Cardinal Wolsey (1471-1530)

My goal in writing this book is to help people make sense of the science-related issues that impact their daily lives. Lies, Damned Lies, and Science provides an enlightening approach for contemplating scientific issues, and brings these issues into focus the way new glasses sharpen one’s vision. In other words, the book is a new lens through which to view the world. Each chapter reveals a unique set of elements that need to be taken into consideration when reasoning about a complex science-related issue. In addition to bringing these elements into focus, the book shows how they fit together into something greater than a sum of parts.

Most of the messages that bombard us everyday are carefully selected to present just one of a kaleidoscope of possible perspectives on technological, environmental, economic, and health issues such as global warming, mad cow disease, nanotechnology, genetically engineered food, who should take cholesterol-lowering drugs, and what are the merits of banning plastic bags. Oversimplified black-and-white perspectives of issues come from those who have a vested interest in convincing others of their point of view, or who are simply relaying information without thinking critically about it. This book explores ways to achieve more nuanced and balanced perspectives on a wide range of issues.

In a society in which science and technology drive the economy and infiltrate every aspect of daily life, it is dangerous for an elite few to make the decisions about how technology is used, who will be given access to it, and how money is spent to research scientific solutions to societal problems. Ironically, those with the power to make these decisions rarely have any background in science. Therefore, they are especially vulnerable to being hoodwinked by those who hold stake in an issue and have the money to get their voices
heard. Yet, we too can make our voices heard through sound, evidence-based political, consumer, and medical decisions. To do this, we need to be armed with the knowledge that makes it difficult for clever stakeholders to deceive us.

Too many people lost confidence in their ability to understand science because they did poorly in science class in high school. However, even folks who excelled in high school science classes and majored in a scientific discipline in college are rarely adequately prepared to think critically about the science they encounter in their daily lives. High school and even college science tends to be focused on facts, formulae, and experiments with known outcomes. In the real world, there is much more uncertainty and interpretation. Decisions about contemporary scientific issues often must be made on the basis of incomplete information, and conflicting viewpoints are the norm rather than the exception. This book unravels the complexity of such issues to help scientists and nonscientists alike identify hogwash and balance tradeoffs to make well-reasoned decisions about science in everyday life.

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