BANKRUPTING PHYSICS

HOW TODAY'S TOP SCIENTISTS ARE GAMBLING AWAY THEIR CREDIBILITY

ALEXANDER UNZICKER
AND
SHEILLA JONES
CONTENTS

Prologue
Relaxing, Exciting, and Overstrung Physics ix

Part I
Shortcut

Chapter 1. Not too Bad, *Homo sapiens*, But…
Reasons for Doubt: Something Is Rotten in the State of Physics 3

Chapter 2. Galileo Would Freak Out!
A Quantum Leap in Measuring Devices: Why We Live in Fantastic Times 19

Chapter 3. A Speedy Revolution
Why Cosmology Is Going the Wrong Way 31

Part II
Crossroads

Chapter 4. The Basic Story
What Einstein Told Us about Gravity and Space-Time 45

Chapter 5. Still a Mystery
Newton's Gravitational Constant: From England to the Edge of the Universe 59

Chapter 6. The Riddle of Small Accelerations
Are Galaxies Really Just Big Planetary Systems? 69

Chapter 7. Lost in the Dark
Dark Matter and Dark Energy: Invisible or All in Your Mind? 81
Chapter 8. Precision in the Tea Leaves  
Message from the Cosmic Microwave Background:  
How Much Is Just Noise?

Part III  
Dead End

Chapter 9. Muddy Water  
The Cosmology of Dark Pixels in the First Dark Age:  
Giving Work to Supercomputers

Chapter 10. Speculation Bubbles Rise  
Expansion, Imagination, Inflation: Do We Know  
There Was a First Second?

Chapter 11. Blacking Out  
Black Holes, the Big Bang, and Quantum Gravity:  
Ecological Niches for Theorists

Chapter 12. The Fiancée You Won’t Marry  
The Standard Model of Particle Physics: How Playing with  
Mathematical Beauty Took Over Real Life

Chapter 13. Chronicle of a Surprise Foretold  
Höw Higgsteria Delayed the Bankruptcy of Particle Physics

Chapter 14. New Dimensions in Nonsense  
Branes, Multiverses, and Other Supersicknesses:  
Physics Goes Nuts

Chapter 15. Goodbye Science, Hello Religion  
String Theory: How the Elite Became a Sect and a Mafia

Part IV  
Backing Up

Chapter 16. Clear Water  
Reason vs. Circular Logic: How Science Should Work

Chapter 17. Welcome to Byzantium  
Complications on Complications:  
How Physics Became a Junk Drawer

Chapter 18. The First Wrong Turn  
Deviation Decades Ago: Calculating Replaces Thinking
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 19. The Math Fallout How Theoretical Fashions Impede Reflection</td>
<td>229</td>
</tr>
<tr>
<td>Chapter 20. Big Science, Big Money, Big Bubbles What's Wrong with the Physics Business</td>
<td>239</td>
</tr>
<tr>
<td>Chapter 21. Outlook Get Prepared for the Crash</td>
<td>251</td>
</tr>
<tr>
<td>Appendix</td>
<td>255</td>
</tr>
<tr>
<td>Thanks</td>
<td>257</td>
</tr>
<tr>
<td>Permissions</td>
<td>259</td>
</tr>
<tr>
<td>Notes</td>
<td>261</td>
</tr>
<tr>
<td>Literature</td>
<td>267</td>
</tr>
<tr>
<td>Index</td>
<td>269</td>
</tr>
</tbody>
</table>