# Contents

Preface   xi  
Acknowledgments  xiii  
List of Abbreviations    xv

1 Encapsulating Security: Pharmaceutical Defenses against Biological Danger    1  

**Part One: The Development Challenges**  

2 Discovering a Virus’s Achilles Heel: Flu Fighting at the Molecular Scale   31  

3 The Pill Always Wins: Gilead Sciences, Roche, and the Birth of Tamiflu  54  

**Part Two: The Acquisition Challenges**  

4 What a Difference a Day Makes: The Margin Call for Regulatory Agencies  79  

5 Virtual Blockbuster: Bird Flu and the Pandemic of Preparedness Planning  106  

**Part Three: The Deployment Challenges**  

6 In the Eye of the Storm: Global Access, Generics, and Intellectual Property  137  

7 “Ode to Tamiflu”: Side Effects, Teenage “Suicides,” and Corporate Liabilities  163  

8 Data Backlash: Roche and Cochrane Square Up over Clinical Trial Data  184  

9 “To Boldly Go . . .”: Pharmaceutical Enterprises and Global Health Security  211
Epilogue: Pharmaceuticals, Security, and Molecular Life 233

References 237
Index 255