Contents

| Contributors | | page vi |
|---|--|---------|
| 1 | Introduction – Risk Anaysis and Society: An Interdisciplinary Characterization of the Field Timothy L. McDaniels and Mitchell J. Small | 1 |
| PART ONE. FUNDAMENTAL CHARACTER OF RISK | | |
| 2 | The Conception of Variability in Risk Analyses: Developments Since 1980 Dale Hattis | 15 |
| 3 | Mechanistic Considerations in the Harmonization of Dose-Response Methodology: The Role of Redundancy at Different Levels of Biological Organization Lorenz R. Rhomberg | 46 |
| 4 | Risk of Extreme and Rare Events: Lessons from a Selection of Approaches Vicki M. Bier, Scott Ferson, Yacov Y. Haimes, James H. Lambert, and Mitchell J. Small | 74 |
| 5 | Environmental Risk and Justice Mary R. English | 119 |
| PAF | RT TWO. METHODS FOR RISK ASSESSMENT | |
| 6 | Uncertain Risk: The Role and Limits of Quantitative Assessment Alison C. Cullen and Mitchell J. Small | 163 |
| 7 | Valuing Risk Management Choices Robin S. Gregory | 213 |
| 8 | The Role of Efficiency in Risk Management John D. Graham, Per-Olov Johansson, and Junko Nakanishi | 251 |

vi Contents

| PAL | CT THREE. NEW APPROACHES AND NEEDS FOR RISK | |
|-------|--|-------------|
| MΑ | NAGEMENT | |
| 9 | The Challenge of Integrating Deliberation and Expertise: Participation and Discourse in Risk Management Ortwin Renn | 289 |
| 10 | Global Change and Transboundary Risks Joyce Tait and Ann Bruce | 367 |
| 11 | Environmental Risks and Developing Countries: An Asian Perspective Michinori Kabuto, Saburo Ikeda, and Iwao Uchiyama | 420 |
| sui | MMARY AND FUTURE DIRECTIONS | |
| 12 | State of the Art and New Directions in Risk Assessment and Risk Management: Fundamental Issues of Measurement and Management Rae Zimmerman and Robin Cantor | 4 51 |
| Index | | 459 |