## Contents

1. **Beyond Technology: The Holistic Advantage** .......................... 1  
   Domenico Grasso and Melody Brown Burkins

2. **Holistic Engineering** ................................................. 11  
   Domenico Grasso and David Martinelli

3. **Engineering for a Changing World** .............................. 17  
   James J. Duderstadt

4. **K-12 Engineering – the Missing Core Discipline** ............ 37  
   Ioannis Miaoulis

5. **Liberal Arts and Engineering** ................................. 53  
   Catherine P. Koshland

6. **What Is Happening in Liberal Education?** ..................... 69  
   Carol T. Christ

7. **Holistic Engineering and Educational Reform** ............... 81  
   Domenico Grasso and Joseph J. Helble

8. **Beyond Systems Engineering – Educational Approaches for the 21st Century** .......................... 93  
   Priscilla Guthrie

9. **The Education of an Engineer in a Holistic Age: A Latin American Perspective** ................................. 99  
   Hector Gallegos

10. **On the Cultivation of Innovative Engineering Talent** ........ 113  
    Pan Yunhe

11. **International Education and Holistic Thinking for Engineers** .......................... 125  
    Dennis D. Berkey

12. **Engineering Value Propositions: Professional and Personal Needs** .......................... 137  
    Gary E. Wnek and Suzette Williamson
13 The Missing Basics and Other Philosophical Reflections for the Transformation of Engineering Education ............. 145
   David E. Goldberg

14 Dispelling the Myths of Holistic Engineering ............ 159
   Domenico Grasso, Melody Brown Burkins, Joseph Helble, and David Martinelli

15 The Practice of Systems Engineering: A Foundation for Technical Leadership ....................... 167
   Wanda Austin, Marilee Wheaton, Charles Tang, and Mark Goodman

16 Holistic Systems Integration .......................... 197
   Alfred Grasso, Louis S. Metzger, Richard J. Byrne, Stephen D. Huffman, John M. Kreger, and Marie A. Francesca

17 Engineers of Tomorrow: Holistic-Thinking System Engineers 227
   Charla K. Wise

18 Collaborative Innovation and Service Systems .......... 243
   Nicholas Donofrio, Calline Sanchez, and Jim Spohrer

19 Technology and Policy ................................. 271
   M. Granger Morgan

Subject Index ............................................. 283
Holistic Engineering Education
Beyond Technology
Grasso, D.; Burkins, M. (Eds.)
2010, XX, 301 p., Hardcover
ISBN: 978-1-4419-1392-0