

Contents

Preface	v
List of Contributors	xiii
Chapter 1	
The Importance of Target Selection Strategies in Structural Biology	1
<i>Enrique E. Abola and Raymond C. Stevens</i>	
Chapter 2	
The Impact of Structural Proteomics on Macromolecular Structure Databases	29
<i>James D. Watson and Janet M. Thornton</i>	
Chapter 3	
The Impact of 3D Structures on a Protein Knowledgebase: From Proteins to Systems	51
<i>Ursula Hinz and Amos Bairoch</i>	
Chapter 4	
Bioinformatics of Protein Function	79
<i>Arthur M. Lesk, Vineet Sangar, Helen Parkinson and James C. Whisstock</i>	
Chapter 5	
Comparative Modeling in Structural Genomics	121
<i>John Moult</i>	

Chapter 6	
The Contribution of Structural Proteomics to Understanding the Function of Hypothetical Proteins	135
<i>Michael D. Suits, Allan Matte, Zongchao Jia and Mirosław Cygler</i>	
Chapter 7	
Intrinsically Disordered Proteins	153
<i>Peter Tompa</i>	
Chapter 8	
Metalloproteins: Structure, Conservation and Prediction of Metal Binding Sites	181
<i>Marvin Edelman, Mariana Babor, Ronen Levy and Vladimir Sobolev</i>	
Chapter 9	
The Impact of Protein Expression Methodologies on Structural Proteomics	207
<i>A. Chesneau, H. Yumerefendi and D. J. Hart</i>	
Chapter 10	
Protein Complexes Assembly by Multi-Expression in Bacterial and Eukaryotic Hosts	233
<i>Christophe Romier</i>	
Chapter 11	
The Impact of Structural Proteomics on the Prediction of Protein–Protein Interactions	251
<i>Christina Kiel and Luis Serrano</i>	
Chapter 12	
Cryo-Electron Microscopy in the Era of Structural Proteomics	269
<i>Alasdair C. Steven and David M. Belnap</i>	

Chapter 13	
On NMR-based Structural Proteomics	307
<i>Thomas Szyperski</i>	
Chapter 14	
Structural Proteomics in Relation to Signaling Pathways	331
<i>Florence Bedez, Arnaud Poterszman and Dino Moras</i>	
Chapter 15	
The Impact of Structural Proteomics on Drug Design	347
<i>Yuan-Ping Pang</i>	
Chapter 16	
Structural Proteomics of Emerging Viruses: The Examples of SARS-CoV and Other Coronaviruses	361
<i>Rolf Hilgenfeld, Jinzhi Tan, Shuai Chen, Xu Shen and Hualiang Jiang</i>	
Chapter 17	
High-throughput Technologies for Structural Biology: The Protein Structure Initiative Perspective	435
<i>Andrzej Joachimiak</i>	
Chapter 18	
European Structural Proteomics — A Perspective	463
<i>Susan Daenke, E. Yvonne Jones and David I. Stuart</i>	
Chapter 19	
Structural Genomics and Structural Proteomics: A Global Perspective	505
<i>Lucia Banci, Wolfgang Baumeister, Udo Heinemann, Gunter Schneider, Israel Silman and Joel L. Sussman</i>	

Chapter 20	
Policies in Structural Genomics/Structural Proteomics	539
A. The Protein Structure Initiative: Policies and Update <i>John Norvell and Jeremy Berg</i>	539
B. Structural Genomics in European Framework Programs <i>Josefina Enfedaque, Saša Jenko Kokalj and Jacques Remacle</i>	543
C. Policy Aspects in Structural Genomics/Proteomics <i>Barbara Skene</i>	554
D. Policies and Updates of the RIKEN Structural Genomics/Proteomics Initiative <i>Shigeyuki Yokoyama</i>	559
E. The International Structural Genomics Organization: Policies for Structural Genomics <i>Thomas C Terwilliger, Shigeyuki Yokoyama, Udo Heinemann, Ian Wilson, Dino Moras, David Stuart, Seiki Kuramitsu, Edward N. Baker, Stephen Burley and Joel Sussman</i>	561
Index	567