The endothelium, the cell layer that forms the inner lining of blood vessels, is a spatially distributed system that extends to all reaches of the human body. Today, clinical and basic research demonstrates that the endothelium plays a crucial role in mediating homeostasis and is involved in virtually every disease, either as a primary determinant of pathophysiology or as a victim of collateral damage. Indeed, the endothelium has remarkable, though largely untapped, diagnostic and therapeutic potential. This volume endeavors to bridge the bench-to-bedside gap in endothelial biomedicine, with the goal of advancing research and development and improving human health. The book is the first to systematically integrate knowledge about the endothelium from different organ-specific disciplines, including neurology, pulmonary, cardiology, gastroenterology, rheumatology, infectious disease, hematology-oncology, nephrology, and dermatology. Moreover, it is unique in its interdisciplinary approach, drawing on expertise from such diverse fields as evolutionary biology, comparative biology, molecular and cell biology, mathematical modeling and complexity theory, translational research, and clinical medicine.

Dr. William C. Aird received his medical degree from the University of Western Ontario in 1985. After completing his internal medicine and chief medical residency at the University of Toronto, he undertook a Hematology fellowship at the Brigham and Women's Hospital, Harvard Medical School. Dr. Aird received his postdoctoral training in the Department of Biology at the Massachusetts Institute of Technology. In 1996, he established an independent research program in the Division of Molecular Medicine at the Beth Israel Deaconess Medical Center. Dr. Aird is currently Associate Professor of Medicine at Harvard Medical School and Chief of the Division of Molecular and Vascular Medicine, at Beth Israel Deaconess Medical Center, Boston, Massachusetts.
To my wife Renee, and children Xan, Ali, and Jamie
# Contents

*Editor, Associate Editors, Artistic Consultant, and Contributors*  
page xxi

*Preface*  
xxxix

**PART I: CONTEXT**

**History of Medicine**

1. The Endothelium in History  
   *Manfred D. Laubichler, William C. Aird, and Jane Maienshein*  
   page 5

**Evolution, Comparative Biology, and Development**

2. Introductory Essay: Evolution, Comparative Biology, and Development  
   *William C. Aird and Manfred D. Laubichler*  
   page 23

3. Evolution of Cardiovascular Systems and Their Endothelial Linings  
   *Warren W. Burggren and Carl L. Reiber*  
   page 29

4. The Evolution and Comparative Biology of Vascular Development and the Endothelium  
   *J. Douglas Coffin*  
   page 50

5. Fish Endothelium  
   *Kenneth R. Olson*  
   page 59

6. Hagfish: A Model for Early Endothelium  
   *Pavan K. Cheruvu, Daniel Gale, Ann M. Dvorak, David Haig, and William C. Aird*  
   page 66

7. The Unusual Cardiovascular System of the Hemoglobinless Antarctic Icefish  
   *H. William Detrich III*  
   page 74

8. The Fish Endocardium: A Review on the Teleost Heart  
   *José M. Icardo*  
   page 79

9. Skin Breathing in Amphibians  
   *Glenn J. Tattersall*  
   page 85
10. Avian Endothelium  
   Thomas J. Poole  

11. Spontaneous Cardiovascular and Endothelial Disorders in Dogs and Cats  
   John E. Rush  

12. Giraffe Cardiovascular Adaptations to Gravity  
   Alan R. Hargens, Knut Pettersson, and Ronald W. Millard  

13. Energy Turnover and Oxygen Transport in the Smallest Mammal: The Etruscan Shrew  
   Klaus D. Jürgens  

14. Molecular Phylogeny  
   John H. McVey  

15. Darwinian Medicine: What Evolutionary Medicine Offers to Endothelium Researchers  
   Randolph M. Nesse and Alan Weder  

16. The Ancestral Biomedical Environment  
   S. Boyd Eaton, Loren Cordain, and Anthony Sebastian  

17. Putting Up Resistance: Maternal–Fetal Conflict over the Control of Uteroplacental Blood Flow  
   David Haig  

18. Xenopus as a Model to Study Endothelial Development and Modulation  
   Aldo Ciau-Uitz, Claire Fernandez, and Roger Patient  

19. Vascular Development in Zebrafish  
   Sameer S. Chopra and Tao P. Zhong  

20. Endothelial Cell Differentiation and Vascular Development in Mammals  
   Cam Patterson  

21. Fate Mapping  
   Takashi Mikawa  

22. Pancreas and Liver: Mutual Signaling during Vascularized Tissue Formation  
   Eckhard Lammert  

23. Pulmonary Vascular Development  
   Peter Lloyd Jones  

Metaphors  

24. Shall I Compare the Endothelium to a Summer’s Day: The Role of Metaphor in Communicating Science  
   Steven Moskowitz and William C. Aird  

25. The Membrane Metaphor: Urban Design and the Endothelium  
   Kenneth L. Kaplan and Daniel L. Schodek
PART II: ENDOTHELIAL CELL AS INPUT-OUTPUT DEVICE

Input

27. Introductory Essay: Endothelial Cell Input
   Helmut G. Augustin

28. Hemodynamics in the Determination of Endothelial Phenotype and Flow Mechanotransduction
   Peter F. Davies

29. Hypoxia-Inducible Factor 1
   Gregg L. Semenza

30. Integrative Physiology of Endothelial Cells: Impact of Regional Metabolism on the Composition of Blood-Bathing Endothelial Cells
   Mitchell L. Halperin and Kamel S. Kamel

31. Tumor Necrosis Factor
   Jordan S. Pober

   Debarata Mukhopadhyay, Resham Bhattacharya, and Deborah A. Hughes

33. Function of Hepatocyte Growth Factor and Its Receptor c-Met in Endothelial Cells
   Xue Wang, Augustine M.K. Choi, and Stefan W. Ryter

34. Fibroblast Growth Factors
   Masahiro Murakami, Arye Elfenbein, and Michael Simons

35. Transforming Growth Factor-β and the Endothelium
   Barbara J. Ballermann

36. Thrombospondins
   Sareh Parangi and Jack Lawler

37. Neuropilins: Receptors Central to Angiogenesis and Neuronal Guidance
   Diane Bielenberg, Peter Kurschat, and Michael Klagsbrun

38. Vascular Functions of Eph Receptors and Ephrin Ligands
   Helmut G. Augustin

39. Endothelial Input from the Tie1 and Tie2 Signaling Pathway
   Daniel Dumont
40. Slits and Netrins in Vascular Patterning: Taking Cues from the Nervous System
   Kye Won Park, Lisa D. Urness, and Dean Y. Li
   360
41. Notch Genes: Orchestrating Endothelial Differentiation
   Yasuhiro Funahashi, Carrie J. Shawber, and Jan Kitajewski
   368
42. Reactive Oxygen Species
   Kaikobad Irani
   375
43. Extracellular Nucleotides and Nucleosides as Autocrine and Paracrine Regulators within the Vasculature
   Silvia Deaglio and Simon C. Robson
   384
44. Syndecans
   Eugene Tkachenko, John M. Rhodes, and Michael Simons
   396
45. Sphingolipids and the Endothelium
   Timothy Hla
   403
46. Endothelium: A Critical Detector of Lipopolysaccharide
   Jaswinder Kaur and Paul Kabes
   410
47. Receptor for Advanced Glycation End-products and the Endothelium: A Path to the Complications of Diabetes and Inflammation
   Jean-Luc Wautier and Ann Marie Schmidt
   419
48. Complement
   Anne Nicholson-Weller
   430
49. Kallikrein-Kinin System
   Robert Colman
   444
50. Opioid Receptors in Endothelium
   Kalpna Gupta and Elliot J. Stephenson
   451
51. Snake Toxins and Endothelium
   Jay W. Fox and Solange M.T. Serrano
   461
52. Inflammatory Cues Controlling Lymphocyte–Endothelial Interactions in Fever-Range Thermal Stress
   Qing Chen, Kristen Clancy, Wan-Chao Wang, and Sharon S. Evans
   471
53. Hyperbaric Oxygen and Endothelial Responses in Wound Healing and Ischemia-Reperfusion Injury
   Bryan Bélikoff, Wende R. Reenstra, and Jon A. Buras
   480
54. Barotrauma
   Deborah A. Quinn and Charles A. Hales
   489
55. Endothelium and Diving
   Alf O. Brubakk, Olav S. Eftedal, and Ulrik Wisløff
   497
56. Exercise and the Endothelium
   Ulrik Wisløff, Per M. Haram, and Alf O. Brubakk
   506
CONTENTS

57. The Endothelium at High Altitude
Nicholas L.M. Cruden and David J. Webb
516

58. Endothelium in Space
Janice V. Meck and Ralph E. Purdy
520

59. Toxicology and the Endothelium
Howard D. Beall and J. Douglas Coffin
527

60. Pericyte–Endothelial Interactions
Mark W. Majesky
536

Shivalika Handa, Karolina Kolodziejska, and Mansoor Husain
545

62. Cross-Talk between the Red Blood Cell and the Endothelium: Nitric Oxide as a Paracrine and Endocrine Regulator of Vascular Tone
Sruti Shiva and Mark T. Gladwin
562

63. Leukocyte–Endothelial Cell Interactions
Volker Vielhauer, Xavier Cullere, and Tanya Mayadas
576

64. Platelet–Endothelial Interactions
Patricia B. Maguire, Orina Belton, Niaobh O’Donoghue, Sandra Austin, and Judith Coppinger
587

65. Cardiomyocyte–Endothelial Cell Interactions
Jian Li and Frank W. Sellke
602

66. Interactions between Hepatocytes and Liver Sinusoidal Endothelial Cells
David Semela and Vijay Shah
609

67. Stellate Cell–Endothelial Cell Interactions
Haruki Senoo
616

68. Podocyte–Endothelial Interactions
Susan E. Quaggin
620

Coupling

69. Introductory Essay: Endothelial Cell Coupling
Michael Simons
629

70. Endothelial and Epithelial Cells: General Principles of Selective Vectorial Transport
Rolf Kinne
632

71. Electron Microscopic–Facilitated Understanding of Endothelial Cell Biology: Contributions Established during the 1950s and 1960s
Ann M. Dvorak
643

72. Weibel-Palade Bodies: Vesicular Trafficking on the Vascular Highways
Charles J. Lowenstein, Craig N. Morrell, and Munekazu Yamakuchi
657
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>73.</td>
<td>Multiple Functions and Clinical Uses of Caveolae in Endothelium</td>
<td>664</td>
</tr>
<tr>
<td></td>
<td>Lucy A. Carver and Jan E. Schnitzer</td>
<td></td>
</tr>
<tr>
<td>74.</td>
<td>Endothelial Structures Involved in Vascular Permeability</td>
<td>679</td>
</tr>
<tr>
<td></td>
<td>Radu V. Stan</td>
<td></td>
</tr>
<tr>
<td>75.</td>
<td>Endothelial Luminal Glycocalyx: Protective Barrier between Endothelial Cells and Flowing Blood</td>
<td>689</td>
</tr>
<tr>
<td></td>
<td>Bernard M. van den Berg, Max Nieuwdorp, Erik Stroes, and Hans Vink</td>
<td></td>
</tr>
<tr>
<td>76.</td>
<td>Endothelial Cell Cytoskeleton</td>
<td>696</td>
</tr>
<tr>
<td></td>
<td>Christopher V. Carman</td>
<td></td>
</tr>
<tr>
<td>77.</td>
<td>Endothelial Cell Integrins</td>
<td>707</td>
</tr>
<tr>
<td></td>
<td>Joseph H. McCarty and Richard O. Hynes</td>
<td></td>
</tr>
<tr>
<td>78.</td>
<td>Aquaporin Water Channels and the Endothelium</td>
<td>714</td>
</tr>
<tr>
<td></td>
<td>Alan S. Verkman</td>
<td></td>
</tr>
<tr>
<td>79.</td>
<td>Ion Channels in Vascular Endothelum</td>
<td>721</td>
</tr>
<tr>
<td></td>
<td>Xiaoqiang Yao</td>
<td></td>
</tr>
<tr>
<td>80.</td>
<td>Regulation of Angiogenesis and Vascular Remodeling by Endothelial Akt Signaling</td>
<td>729</td>
</tr>
<tr>
<td></td>
<td>Ichiro Shiojima and Kenneth Walsh</td>
<td></td>
</tr>
<tr>
<td>81.</td>
<td>Mitogen-Activated Protein Kinases</td>
<td>737</td>
</tr>
<tr>
<td></td>
<td>Natalia V. Bogatcheva and Alexander D. Verin</td>
<td></td>
</tr>
<tr>
<td>82.</td>
<td>Protein Kinase C</td>
<td>746</td>
</tr>
<tr>
<td></td>
<td>Alex Toker</td>
<td></td>
</tr>
<tr>
<td>83.</td>
<td>Rho GTP-Binding Proteins</td>
<td>753</td>
</tr>
<tr>
<td></td>
<td>Allan Murray</td>
<td></td>
</tr>
<tr>
<td>84.</td>
<td>Protein Tyrosine Phosphatases</td>
<td>764</td>
</tr>
<tr>
<td></td>
<td>Arne ¨Ostman and Kai Kappert</td>
<td></td>
</tr>
<tr>
<td>85.</td>
<td>Role of β-Catenin in Endothelial Cell Function</td>
<td>773</td>
</tr>
<tr>
<td></td>
<td>Anna Cattelino and Stefan Liebner</td>
<td></td>
</tr>
<tr>
<td>86.</td>
<td>Nuclear Factor-κB Signaling in Endothelium</td>
<td>784</td>
</tr>
<tr>
<td></td>
<td>Kaiser M. Bijli and Arshad Rahman</td>
<td></td>
</tr>
<tr>
<td>87.</td>
<td>Peroxisome Proliferator-Activated Receptors and the Endothelium</td>
<td>796</td>
</tr>
<tr>
<td></td>
<td>Jonathan D. Brown and Jorge Plutzky</td>
<td></td>
</tr>
<tr>
<td>88.</td>
<td>GATA Transcription Factors</td>
<td>806</td>
</tr>
<tr>
<td></td>
<td>Takashi Minami</td>
<td></td>
</tr>
<tr>
<td>89.</td>
<td>Coupling: The Role of Ets Factors</td>
<td>812</td>
</tr>
<tr>
<td></td>
<td>Peter Oettgen</td>
<td></td>
</tr>
<tr>
<td>90.</td>
<td>Early Growth Response-1 Coupling in Vascular Endothelium</td>
<td>818</td>
</tr>
<tr>
<td></td>
<td>Levon M. Khachigian and Valerie C. Midgley</td>
<td></td>
</tr>
<tr>
<td>91.</td>
<td>KLF2: A “Molecular Switch” Regulating Endothelial Function</td>
<td>822</td>
</tr>
<tr>
<td></td>
<td>Zhiyong Lin and Mukesh K. Jain</td>
<td></td>
</tr>
<tr>
<td>CONTENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------</td>
<td></td>
</tr>
</tbody>
</table>
| 92. NFAT Transcription Factors | Takashi Minami  
| 828 |  
| 93. Forkhead Signaling in the Endothelium | Md. Rahul Abid and William C. Aird  
| 834 |  
| 94. Genetics of Coronary Artery Disease and Myocardial Infarction: The MEF2 Signaling Pathway in the Endothelium | Stephen R. Archacki, Sun-Ah You, Quansheng Xi, and Qing Wang  
| 847 |  
| 95. Verf1: A Transcriptional Regulator of the Endothelium | Frank Kuhnert and Heidi Stuhlmann  
| 855 |  
| 96. Sox Genes: At the Heart of Endothelial Transcription | Neville Young and Peter Koopman  
| 861 |  
| 97. Id Proteins and Angiogenesis | Robert Benezra and Erik Henke  
| 868 |  
| Output |  
| 98. Introductory Essay: Endothelial Cell Output | William C. Aird  
| 879 |  
| 881 |  
| 100. A Phage Display Perspective | Amado J. Zurita, Wadih Arap, and Renata Pasqualini  
| 898 |  
| 101. Hemostasis and the Endothelium | William C. Aird  
| 909 |  
| 102. Von Willebrand Factor | Tom Diacovo  
| 915 |  
| 103. Tissue Factor Pathway Inhibitor | Alan E. Mast  
| 922 |  
| 104. Tissue Factor Expression by the Endothelium | Gernot Schabbauer and Nigel Mackman  
| 932 |  
| 105. Thrombomodulin | Marlies Van de Wouwer and Edward M. Conway  
| 939 |  
| 106. Heparan Sulfate | Nicholas W. Shworak  
| 947 |  
| 107. Antithrombin | Nicholas W. Shworak  
| 960 |  
| 108. Protein C | Marlies Van de Wouwer and Edward M. Conway  
| 973 |  
| 109. Vitamin K–Dependent Anticoagulant Protein S | Björn Dahlbäck  
| 982 |
CONTENTS

110. Nitric Oxide as an Autocrine and Paracrine Regulator of Vessel Function
   William C. Sessa
   988

111. Heme Oxygenase and Carbon Monoxide in Endothelial Cell Biology
   Hong Pyo Kim, Stefan W. Ryter, and Augustine M.K. Choi
   994

112. Endothelial Eicosanoids
   Kenneth K. Wu
   1004

113. Regulation of Endothelial Barrier Responses and Permeability
   Joe G.N. Garcia
   1015

114. Molecular Mechanisms of Leukocyte Transendothelial Cell Migration
   F. William Luscinskas
   1030

115. Functions of Platelet-Endothelial Cell Adhesion Molecule-1 in the Vascular Endothelium
   Peter J. Newman and Debra K. Newman
   1037

116. P-Selectin
   Rodger P. McEver
   1049

117. Intercellular Adhesion Molecule-1 and Vascular Cell Adhesion Molecule-1
   Silvia Muro
   1058

118. E-Selectin
   David Milstone
   1071

119. Endothelial Cell Apoptosis
   Elizabeth O. Harrington, Qing Lu, and Sharon Rounds
   1081

120. Endothelial Antigen Presentation
   Andrew H. Lichtman
   1098

PART III: VASCULAR BED/ORGAN STRUCTURE AND FUNCTION IN HEALTH AND DISEASE

121. Introductory Essay: The Endothelium in Health and Disease
   William C. Aird
   1111

122. Hereditary Hemorrhagic Telangiectasia: A Model to Probe the Biology of the Vascular Endothelium
   Mourad Toporsian and Michelle Letarte
   1113

123. Blood–Brain Barrier
   Christian Weidenfeller and Eric V. Shusta
   1124

124. Brain Endothelial Cells Bridge Neural and Immune Networks
   Kevin J. Tracey and Christine N. Metz
   1140
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>The Retina and Related Hyaloid Vasculature: Developmental and Pathological Angiogenesis</td>
<td>Laura Benjamin</td>
<td>1154</td>
</tr>
<tr>
<td>126</td>
<td>Microheterogeneity of Lung Endothelium</td>
<td>Troy Stevens</td>
<td>1161</td>
</tr>
<tr>
<td>127</td>
<td>Bronchial Endothelium</td>
<td>Elizabeth Wagner and Aigul Moldobaeva</td>
<td>1171</td>
</tr>
<tr>
<td>128</td>
<td>The Endothelium in Acute Respiratory Distress Syndrome</td>
<td>Mark L. Martinez and Guy A. Zimmerman</td>
<td>1178</td>
</tr>
<tr>
<td>129</td>
<td>The Central Role of Endothelial Cells in Severe Angioproliferative Pulmonary Hypertension</td>
<td>Norbert F. Voelkel and Mark R. Nicolls</td>
<td>1193</td>
</tr>
<tr>
<td>130</td>
<td>Emphysema: An Autoimmune Vascular Disease?</td>
<td>Norbert F. Voelkel and Laimute Taraseviciene-Stewart</td>
<td>1199</td>
</tr>
<tr>
<td>131</td>
<td>Endothelial Mechanotransduction in Lung: Ischemia in the Pulmonary Vasculature</td>
<td>Shampa Chatterjee and Aron B. Fisher</td>
<td>1202</td>
</tr>
<tr>
<td>132</td>
<td>Endothelium and the Initiation of Atherosclerosis</td>
<td>Myron I. Cybulsky</td>
<td>1214</td>
</tr>
<tr>
<td>133</td>
<td>The Hepatic Sinusoidal Endothelial Cell</td>
<td>Laurie D. DeLeve</td>
<td>1226</td>
</tr>
<tr>
<td>134</td>
<td>Hepatic Macrocirculation: Portal Hypertension As a Disease Paradigm of Endothelial Cell Significance and Heterogeneity</td>
<td>Winston Dunn and Vijay Shah</td>
<td>1239</td>
</tr>
<tr>
<td>135</td>
<td>Inflammatory Bowel Disease</td>
<td>Ossama A. Hatoum and David G. Binion</td>
<td>1248</td>
</tr>
<tr>
<td>136</td>
<td>The Vascular Bed of Spleen in Health and Disease</td>
<td>Péter Balogh</td>
<td>1255</td>
</tr>
<tr>
<td>137</td>
<td>Adipose Tissue Endothelium</td>
<td>Gary Hausman</td>
<td>1265</td>
</tr>
<tr>
<td>138</td>
<td>Renal Endothelium</td>
<td>Bruce Molitoris</td>
<td>1271</td>
</tr>
<tr>
<td>139</td>
<td>Uremia</td>
<td>Jan T. Kielstein and Danilo Fliser</td>
<td>1278</td>
</tr>
<tr>
<td>140</td>
<td>The Influence of Dietary Salt Intake on Endothelial Cell Function</td>
<td>Paul W. Sanders</td>
<td>1287</td>
</tr>
<tr>
<td>141</td>
<td>The Role of the Endothelium in Systemic Inflammatory Response Syndrome and Sepsis</td>
<td>Laszlo M. Hoesel and Peter A. Ward</td>
<td>1294</td>
</tr>
<tr>
<td>142.</td>
<td>The Endothelium in Cerebral Malaria: Both a Target Cell and a Major Player</td>
<td>1303</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Valéry Combes, Jin Ning Lou, and Georges E. Grau</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>143.</th>
<th>Hemorrhagic Fevers: Endothelial Cells and Ebola-Virus Hemorrhagic Fever</th>
<th>1311</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>144.</th>
<th>Effect of Smoking on Endothelial Function and Cardiovascular Disease</th>
<th>1320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajat S. Barua and John A. Anibrose</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>145.</th>
<th>Disseminated Intravascular Coagulation</th>
<th>1332</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marcel Levi</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>146.</th>
<th>Thrombotic Microangiopathy</th>
<th>1337</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeffrey Laurence</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>147.</th>
<th>Heparin-Induced Thrombocytopenia</th>
<th>1344</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andreas Greinacher and Theodore E. Warkentin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>148.</th>
<th>Sickle Cell Disease Endothelial Activation and Dysfunction</th>
<th>1352</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert P. Hebbel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>149.</th>
<th>The Role of Endothelial Cells in the Antiphospholipid Syndrome</th>
<th>1360</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacob H. Rand and Xiao-Xuan Wu</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>150.</th>
<th>Diabetes</th>
<th>1370</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angelika Bierhaus, Hans-Peter Hammes, and Peter P. Nawroth</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>151.</th>
<th>The Role of the Endothelium in Normal and Pathologic Thyroid Function</th>
<th>1386</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jamie Mitchell, Anthony Hollenberg, and Sareh Parangi</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>152.</th>
<th>Endothelial Dysfunction and the Link to Age-Related Vascular Disease</th>
<th>1397</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jay M. Edelberg and May J. Reed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>153.</th>
<th>Kawasaki Disease</th>
<th>1405</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane C. Burns</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>154.</th>
<th>Systemic Vasculitis: Autoantibodies Targeting Endothelial Cells</th>
<th>1411</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miri Blank, Sonja Praprotnik, and Yehuda Shoenfeld</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>155.</th>
<th>High Endothelial Venule-like Vessels in Human Chronic Inflammatory Diseases</th>
<th>1419</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jean-Philippe Girard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>156.</th>
<th>Endothelium and Skin</th>
<th>1431</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Petzelbauer, Marion Gröger, Robert Loewe, and Rainer Kunstfeld</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>157.</th>
<th>Angiogenesis</th>
<th>1444</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helmut G. Augustin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chapter</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>158.</td>
<td>Tumor Blood Vessels</td>
<td>1457</td>
</tr>
<tr>
<td></td>
<td>Harold F. Dvorak</td>
<td></td>
</tr>
<tr>
<td>159.</td>
<td>Kaposi's Sarcoma</td>
<td>1471</td>
</tr>
<tr>
<td></td>
<td>Kimberly E. Foreman</td>
<td></td>
</tr>
<tr>
<td>160.</td>
<td>Endothelial Mimicry of Placental Trophoblast Cells</td>
<td>1479</td>
</tr>
<tr>
<td></td>
<td>Hartmut Weiler and Rashmi Sood</td>
<td></td>
</tr>
<tr>
<td>161.</td>
<td>Placental Vasculature in Health and Disease</td>
<td>1488</td>
</tr>
<tr>
<td></td>
<td>S. Ananth Karumanchi and Hai-Tao Yuan</td>
<td></td>
</tr>
<tr>
<td>162.</td>
<td>Endothelialization of Prosthetic Vascular Grafts</td>
<td>1501</td>
</tr>
<tr>
<td></td>
<td>Thomas S. Monahan and Frank W. LoGerfo</td>
<td></td>
</tr>
<tr>
<td>163.</td>
<td>The Endothelium's Diverse Roles Following Acute Burn Injury</td>
<td>1506</td>
</tr>
<tr>
<td></td>
<td>Rob Cartotto</td>
<td></td>
</tr>
<tr>
<td>164.</td>
<td>Trauma-Hemorrhage and Its Effects on the Endothelium</td>
<td>1513</td>
</tr>
<tr>
<td></td>
<td>Yukihiro Yokoyama and Irshad H. Chaudry</td>
<td></td>
</tr>
<tr>
<td>165.</td>
<td>Coagulopathy of Trauma: Implications for Battlefield Hemostasis</td>
<td>1523</td>
</tr>
<tr>
<td></td>
<td>Anthony E. Pusateri and John B. Holcomb</td>
<td></td>
</tr>
<tr>
<td>166.</td>
<td>The Effects of Blood Transfusion on Vascular Endothelium</td>
<td>1533</td>
</tr>
<tr>
<td></td>
<td>Christopher G. Silliman</td>
<td></td>
</tr>
<tr>
<td>167.</td>
<td>The Role of Endothelium in Erectile Function and Dysfunction</td>
<td>1541</td>
</tr>
<tr>
<td></td>
<td>Muammer Kendirci and Wayne J.G. Hellstrom</td>
<td></td>
</tr>
<tr>
<td>168.</td>
<td>Avascular Necrosis: Vascular Bed/Organ Structure and Function in Health and Disease</td>
<td>1550</td>
</tr>
<tr>
<td></td>
<td>Chantal Séguin</td>
<td></td>
</tr>
<tr>
<td>169.</td>
<td>Molecular Control of Lymphatic System Development</td>
<td>1553</td>
</tr>
<tr>
<td></td>
<td>Darren Kafka and Young-Kwon Hong</td>
<td></td>
</tr>
<tr>
<td>170.</td>
<td>High Endothelial Venules</td>
<td>1568</td>
</tr>
<tr>
<td></td>
<td>Jean-Marc Gauguet, Roberto Bonasio, Ulrich H. von Andrian</td>
<td></td>
</tr>
<tr>
<td>171.</td>
<td>Hierarchy of Circulating and Vessel Wall–Derived Endothelial Progenitor Cells</td>
<td>1589</td>
</tr>
<tr>
<td></td>
<td>David A. Ingram and Mervin C. Yoder</td>
<td></td>
</tr>
</tbody>
</table>

### PART IV: DIAGNOSIS AND TREATMENT

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>172.</td>
<td>Introductory Essay: Diagnosis and Treatment</td>
<td>1599</td>
</tr>
<tr>
<td></td>
<td>Mansoor Husain</td>
<td></td>
</tr>
<tr>
<td>173.</td>
<td>Circulating Markers of Endothelial Function</td>
<td>1602</td>
</tr>
<tr>
<td></td>
<td>Andrew D. Blann, William Foster, and Gregory Y.H. Lip</td>
<td></td>
</tr>
</tbody>
</table>
xviii  CONTENTS

174. Blood Endothelial Cells  
   Robert D. Simari, Rajiv Gulati, and  
   Robert P. Hebbel  
   1612

175. Endothelial Microparticles: Biology, Function,  
   Assay and Clinical Application  
   Yeon S. Ahn, Lawrence Horstman, Eugene Ahn,  
   Wenche Jy, and Joaquin Jimenez  
   1621

176. Molecular Magnetic Resonance Imaging  
   Susan B. Yeon, Andrea J. Wiethoff, Warren J.  
   Manning, Elmar Spuentrup, and Rene M. Botnar  
   1637

177. Real-Time Imaging of the Endothelium  
   Peter L. Gross  
   1654

178. Diagnosing Endothelial Cell Dysfunction  
   Aristides Veves and Roy Freeman  
   1659

179. Statins  
   James K. Liao  
   1668

180. Steroid Hormones  
   James K. Liao  
   1674

181. Organic Nitrates: Exogenous Nitric Oxide  
   Administration and Its Influence on the  
   Vascular Endothelium  
   John D. Parker and Tommaso Gori  
   1682

182. Therapeutic Approaches to Altering  
   Hemodynamic Forces  
   José A. Adams  
   1690

183. Stent- and Nonstent-Based Cell Therapy for  
   Vascular Disease  
   Michael R. Ward, Duncan J. Stewart, and  
   Michael J.B. Kutryk  
   1698

184. Building Blood Vessels  
   James B. Hoying and Stuart K. Williams  
   1712

185. Gene Transfer and Expression in the Vascular  
   Endothelium  
   Michael J. Passineau and David T. Curiel  
   1725

186. Drug Targeting to Endothelium  
   Vladimir R. Muzykantov  
   1734

PART V: CHALLENGES AND OPPORTUNITIES

Complexity

187. Introductory Essay: Complexity and the  
   Endothelium  
   Ary L. Goldberger  
   1751

188. Agent-Based Modeling and Applications to  
   Endothelial Biomedicine  
   Gary An  
   1754

189. Scale-Free Networks in Cell Biology  
   Eivind Almaas and Albert-László Barabási  
   1760
190. Cell Fates as Attractors: Stability and Flexibility of Cellular Phenotypes 1767
   Sui Huang

191. Equation-Based Models of Dynamic Biological Systems 1780
   Gilles Clermont, Yoram Vodovotz, and Jonathan Rubin

192. Vascular Control through Tensegrity-Based Integration of Mechanics and Chemistry 1786
   Donald E. Ingber

193. Simulating the Impact of Angiogenesis on Multiscale Tumor Growth Dynamics Using an Agent-Based Model 1793
   Chaitanya A. Athale and Thomas S. Deisboeck

Future

194. New Educational Tools for Understanding Complexity in Medical Science 1801
   Grace Huang, Michael J. Parker, and James Gordon

195. Endothelial Biomedicine: The Public Health Challenges and Opportunities 1807
   George A. Mensah

196. Conclusion 1815
   Jane Maienschein, Manfred D. Laubichler, and William C. Aird

Index 1817

Color plates appear after page 922
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<th>Title and Institutions</th>
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