

### **Section 1 - Before the Device**

1. The Descent into Heart and Lung Failure
2. Heart and Lung Transplantation
3. Ex-vivo Organ Support

### **Section 2 - MCRS Devices**

4. Ventricular Assist Devices: Volume Displacement Pumps
5. Ventricular Assist Devices: Rotary Blood Pumps
6. Total Artificial Hearts
7. Devices for HFpEF
8. Extracorporeal Membrane Oxygenation

### **Section 3 - Implantation and Medical Management**

9. Optimising the Patient and Timing the Introduction of MCS
10. Surgical Implantation
11. Complications and Adverse Events
12. Medical Management of the Supported Patient
13. Pediatric devices

### **Section 4 - Device Design**

14. Hydraulic Design
15. Motor design and Impeller Suspension
16. Design for Manufacture
17. Pulsatile vs Continuous Flow
18. Cannula Design
19. Oxygenator Design

### **Section 5 - Device/Patient Interaction**

20. Blood-Device Interaction
21. Physiological Control
22. Systems for Power and Data Transfer
23. Wearable Systems

### **Section 6 - Route to Market**

24. Route to Market
25. Preclinical Evaluation
26. Clinical trials
27. Cost Effectiveness
28. Regulatory approvals

### **Section 7 - Future**

29. The Past, Present and Future