

## **Section 1: Foundations**

1. General Principles of Physiology

1.1 Case Study

## **Section 2: Neurophysiology**

2. An Overview of Nerve Cell Physiology and Electrophysiology

3. Central Nervous System

4. Peripheral Nervous System and the Autonomic Nervous System

5. The Neuromuscular Junction and Skeletal Muscle

6. Smooth Muscle

6.1 Case Study

## **Section 3: Circulatory Physiology**

7. Blood and the Endothelium

8. The Lymphatic System and the Immune System

8.1 Case Study

## **Section 4: Cardiovascular Physiology**

9. The Vasculature

10. The Heart As a Pump

11. Cardiac Electrophysiology

12. Exercise Physiology

12.1 Case Study

## **Section 5: Pulmonary Physiology**

13. The Mechanics of Breathing

14. Gas Exchange in the Lung

15. Gas Transport

16. The Regulation of Breathing

16.1 Case Study

## **Section 6: Renal Physiology**

17. Renal Structure and Function

18. Tubular Transport

19. The Regulation of Blood Pressure and Extracellular Fluid Volume

20. Osmoregulation

21. The Regulation of Potassium Balance

22. Acid-Base Balance

23. Micturition

23.1 Case Study

### **Section 7: Gastrointestinal Physiology**

24. Nutrition, Digestion, and Absorption

25. Control of Gastrointestinal Motility and Secretion

26. Hepatic Physiology

27. The Gastrointestinal Immune System

27.1 Case Study

### **Section 8: Endocrine Physiology**

28. The Endocrine Pancreas: Fed and Fasted Metabolic States

29. The Pituitary Gland

30. The Thyroid Gland

31. The Adrenal Gland

32. Calcium Regulation: Parathyroid Physiology

33. Calcium Regulation: Bone Physiology

34. The Female Reproductive System

35. Pregnancy and Parturition

36. The Male Reproductive System