

Handbook of Cardiac Anatomy, Physiology, and Devices

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A revolution began in my professional career and education in 1997. In that year, I visited the University of Minnesota to discuss collaborative opportunities in cardiac anatomy, physiology, and medical device testing. The meeting was with a faculty member of the Department of Anesthesiology, Professor Paul Iaizzo. I didn't know what to expect but, as always, I remained open minded and optimistic. Little did I know that my life would never be the same. . . . During the mid to late 1990s, Paul Iaizzo and his team were performing anesthesia research on isolated guinea pig hearts. We found the work appealing, but it was unclear how this research might apply to our interest in tools to aid in the design of implantable devices for the cardiovascular system. As discussions progressed, we noted that we would be far more interested in reanimation of large mammalian hearts, in particular, human hearts. Paul was confident this could be accomplished on large hearts, but thought that it would be unlikely that we would ever have access to human hearts for this application. We shook hands and the collaboration was born in 1997. In the same year, Paul and the research team at the University of Minnesota (including Bill Gallagher and Charles Soule) reanimated several swine hearts. Unlike the previous work on guinea pig hearts which were reanimated in Langendorff mode, the intention of this research was to produce a fully functional working heart model for device testing and cardiac research.



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Editorial Review

Review

From the reviews of the second edition: "In this second edition of a book/DVD for bio-medical engineers and clinicians, experts from the University of Minnesota's Lillehei Heart Institute team up with scientists from Medtronic, Inc., a medical technology company to offer the latest information on the anatomic features, underlying physiologic mechanisms, and cardiac devices for diseases of the heart. ... The art program features ... diagnostic images, photos of equipment and devices, and anatomical illustrations. ... The book is appropriate for advanced undergraduate and graduate students, residents, and practicing biomedical engineers." (SciTech Book News, December, 2009) "'Handbook of Cardiac Anatomy, Physiology, and Devices' in its Second edition gives comprehensive overview of cardiac anatomy, physiology and devices employed in its examination Each chapter is accompanied by numerous, compendious References and/or Suggested Reading. The text is complemented by numerous well prepared and refined pictures, graphs, schemes and photographs. ... represents valuable, substantial reading for those who are anyhow interested cardiovascular system structure, functions, examining and treatment. This group of readers is represented by medical students, cardiologists and by biomedical engineering students." (Marie Nováková, General Physiology and Biophysics, December, 2009) "This second edition has become a valuable review book and resource for comprehensive therapists who prescribe the increasing numbers of new contrivances involved in investigation and treatment of cardiovascular disease. ... Its anatomy reveals how images demonstrate structure and identifies both the portals for entry and the passages for delivery of instruments. Physiology concerns electrical and other activities suitable for recording, delivery, and function. ... the comprehensive therapist can begin to catch up with overwhelming current development of spare parts for people." (William H. Wehrmacher, Comprehensive Therapy, 2009)

Review

From the Back Cover

With the medical device industry growing at an incredible pace, and the overall understanding of the molecular basis for disease on the rise, today's bio-medical engineers face a constant challenge to re-tool or reinvent devices that remain in step with medical science. In Handbook of Cardiac Anatomy, Physiology, and Devices, Second Edition, leading experts from the University of Minnesota's renowned Lillehei Heart Institute and scientists from Medtronic, Inc. have thoroughly updated and expanded upon the critically acclaimed first edition with the latest information on the anatomic features, underlying physiologic mechanisms, and treatments for diseases of the heart. Key chapters address animal models for cardiac research, cardiac mapping systems, heart-valve disease, and genomics-based tools and technology. Once again, a companion compact disk offers unique insights into the working heart, providing color images and movies that enhance the understanding of key points within the text. Comprehensive and state-of-the art, the Handbook of Cardiac Anatomy, Physiology, and Devices, Second Edition provides clinicians and biomedical engineers alike with the authoritative information and background they need to work on and implement tomorrow's generation of life-saving cardiac devices.

Users Review

From reader reviews:

Henry Evans:

As people who live in the modest era should be revise about what going on or facts even knowledge to make these keep up with the era that is certainly always change and move ahead. Some of you maybe will certainly update themselves by reading through books. It is a good choice for you but the problems coming to you actually is you don't know which you should start with. This Handbook of Cardiac Anatomy, Physiology, and Devices is our recommendation to cause you to keep up with the world. Why, because this book serves what you want and wish in this era.

Charles Jose:

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Dennis Ross:

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