



Preface

Preface to the Fourth Edition

Once upon a time, an 80-year-old retired university professor was leading a quiet and secluded life. Then one day in the spring of 2010, out of a clear blue sky, he was contacted by Janice Audet, Senior Acquisitions Editor for Academic Press. She said that a number of colleges were still using our third edition of *Cell Physiology Sourcebook* as the textbook for their courses in cell physiology, even though the third edition came out long ago, namely, in 2000.

In fact, I was aware of the use of the third edition in a number of colleges. About 2 years earlier, I was contacted by a graduate student from Georgia State University saying that they were using my book as the textbook for their class on cell physiology, but that he could not buy a copy because it was out of print. He asked me to send him my personal copy of the book. He said he would treat it well and return it to me at the end of the course. He even offered to drive to my home in Cincinnati to pick it up. This student was obviously desperate, so I talked to Noelle Gracy, my former editor, about the problem. She arranged for the class to have access to the e-book version of the textbook. Problem solved!

Janice wanted to know if I was interested in doing a fourth edition. Before I could give her a definitive answer, I wanted her to sample a number of course directors around the country to learn what they liked and what they didn't like about the third edition of the book. The consensus was that our book, in general, was pitched at too high a level for beginning graduate students (or senior undergraduates) taking a course in cell physiology. Some other suggestions were that we should eliminate some chapters/topics that are well-covered in the three textbooks available on cell biology, such as cell division, apoptosis, etc; we should improve the figures by using color; we should add a summary section at the beginning of each chapter; and, although difficult to achieve with so many contributing authors, we should try to make the various chapters more uniform in style.

I agreed to work on the fourth edition, and focused on incorporating the suggestions into the new edition. Some of the changes made to this edition include the omission of

approximately 14 chapters, combining a few chapters, and asking contributors to try to pitch their chapters at the graduate student level. About 10 new contributors were recruited for specific expertise in the subject area. I believe that the final slate of contributors is top-notch, and I am extremely grateful for their participation.

So why did I agree to carry out this project that would require tremendous effort on my part, while in precarious health at that? Was it fortune/money? Absolutely not! That is miniscule. Was it fame/recognition? No, I'm too old to benefit from that now. Besides, I already edited three editions of the very same book. Was it dedication to teaching? Yes, that's what it was! I have dedicated my life to teaching, and I believe that I have the unique ability to present difficult concepts in an easily understandable way. For example, during my student days at the University of Illinois, four of us were studying together for an exam in genetics the next day. I was answering questions that the group had when one of them said, "Nick, you should be the one teaching this class." In the course of my career, I had also received multiple "golden apple" awards from graduate students in the Department of Physiology at the University of Cincinnati for the best teaching in our graduate courses.

One final example is worth mentioning. Michael Palmer, a best-selling author of medical mysteries, used my last name in one of his novels, "The Second Opinion", which came out in 2009. My son, Thomas, asked Dr Palmer how he came up with the name "Sperelakis", which is very uncommon in persons of Greek heritage. Dr Palmer replied that he was a medical student at Case-Western Reserve University in the mid-1960s, and he took my lectures on electrophysiology of nerve and muscle. He said that I was the favorite instructor in basic science of his entire class, and that they gave me the nickname of "Spike" which is jargon for a nerve action potential. Can you believe that Dr Palmer would remember me and my nickname after about 45 years? Dedication to teaching! My dedication to teaching is more amazing because I was a severe stutterer throughout my life, beginning at age 10 and continuing to the present (although now much less severe).

Before the first edition of this book was published, I saw a real need for a good, authoritative textbook in the area of cell physiology and membrane biophysics. The days when a single individual, like my friend Professor Hugh Davson, could cover such a broad area are gone. To cover the wide-ranging expertise necessary for an authoritative textbook, there seems to be no alternative other than arranging a multi-authored textbook by assembling a group of experts in the various topics to be covered. We used this principle in all four editions. The first edition, second edition, and third edition of this textbook came out in 1995, 1998, and 2001. The first and second editions received awards from the American Library Association for being outstanding, namely receiving their "Choice Award".

The Foreword to the first edition was written by Professor Hugh Davson of University College London (UCL). Professor Davson became very famous because of his textbook on cell physiology. It was indeed the "Bible" for all graduate students for a number of years. I first met Hugh when I was there on sabbatical leave in 1965–66. He was an amazing guy and we struck up an immediate friendship. In those days, UCL was quite the place. A.F. Huxley, Nobel Laureate, was head of the Physiology Department, and Bernard Katz, future Nobel Laureate, was head of the Biophysics Department. A.V. Hill, Nobel Laureate, was still coming to his office in the Biophysics Department about once or twice a week at age 90! Unbelievable! Incidentally, UCL is also where I first met Hugo Gonzalez-Serratos, a contributor to this book.

The Foreword for the second edition was written by Thomas E. Thompson. Tom was head of the Biochemistry Department at the University of Virginia while I was there. He was a leading investigator in the area of planar and spherical lipid bilayer membranes. Tom was an excellent teacher, and I had him participate in my graduate

courses. Tom served as President of the Biophysical Society.

The Foreword for the third edition was written by Denis Noble of Oxford University. Denis became a leading investigator and theorist in the field of cardiac electrophysiology. One time, he asked me to give a lecture at a meeting being held at Oxford, and Sir Alan Hodgkin, Nobel Laureate, was chairing the session. I was shaking in my boots!

I decided to ask a long-time good friend, Professor Alexandre Fabiato of the Medical College of Virginia, to write the Foreword for this fourth edition. Alex is an outstanding scientist working on cardiac muscle. He is very well known and highly cited for his Ca-induced Ca release mechanism (CICR). He received the very prestigious Research Achievement Award from the national American Heart Association in 1989. Alex was trained as a cardiologist in France, and he was a graduate student with Professor Edouard Corabouef (University of Paris, Orsay, France) and Professor Silvio Weidmann (University of Bern, Switzerland), both leading pioneers and giants in the field of electrophysiology of cardiac muscle. I am proud and pleased that Alex agreed to do it.

The roadway along the book preparation trail was not without some large bumps and, at times, seemingly insurmountable roadblocks. Dedication to teaching, along with the great need for this textbook, kept me inspired to finish it. In addition, I felt a strong obligation to the Contributors, some of whom already had spent time and effort in beginning their revision. Again, I cannot stress how much I appreciate their efforts and how proud I am that they contributed to this book. We all hope that this textbook will be well received and highly successful.

Nicholas Sperelakis
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