
Preface

You are most likely holding in your hands an actual, physical book, written by a single author (i.e., me), about how cells die, why they die, what happens after they die, and the consequences of such processes for health and disease. At the time I am writing this, in the latter part of the second decade of the 21st century, books such as this one are not especially common. Academics in other disciplines write books (very often as solo authors), but science is more of a collaborative venture, as are the books written about scientific fields. More to the point, though, most of what we read in science is in the form of short publications, primary articles and reviews, that fly into our info-spheres, apparently at the speed of electrons. Books (and especially physical books) are a bit “retro.” But there are a number of reasons I wanted to write a book about this field, cell death and survival, and then wanted to revise it in a second edition.

The field of cell death is certainly not “new.” However, when I wrote the first edition of this book, I felt we had reached a point where our understanding of the processes involved in how cells die were sufficiently developed that we cell death researchers had a pretty good idea of how much of it works. As with any field, there remained differences of opinion regarding some of the finer aspects, but overall there was a lot of agreement. I thought that by putting this together, as a single author, I might be able to outline what amounts to a big picture view of these processes and describe them so that readers with some understanding of biology (perhaps at the college level) could follow all of it, and other readers with a more general interest in science could follow most of it. It was meant to be read in a few sittings, from beginning to end, with the hope that it would stimulate others to think about cell death and how it might relate to other fields of biomedical research. If some of it gets a bit “heavy,” just skip ahead—most of it is pretty easy to grasp, and most of you (I hope) will find it smooth sailing.

In the several years since the publication of the first edition, there has been significant advancement of our understanding of processes involved in and surrounding cell death. Many of the mysteries raised as questions in that edition have been answered, as were questions we did not ask (or imagine!). It was time, I thought, to bring things up to date, and 2 years later, we have the edition you now hold. Surprisingly, I found that the view from 2011 was mostly correct from the current perspective, and we had refined

rather than changed many of our ideas, while “filling in” some of the blanks. But our understanding continues to evolve, and some of what we have learned has dramatically shifted our views. I suspect that a few years from now much of what we think we know will continue to have been refined and may well undergo further shifts. We are far from “done.” Cell death is a core biological process and, as such, is integrated with the whole of biology at every level. We are only beginning to apply our knowledge, and as we take our ideas to the proving grounds, we will continue to learn how little we actually “know.” That is how science works, and a large part of the fun of it.

In the preface to the first edition, I noted the many pioneers (in no particular order) who have brought this field to its current state. Without repeating them here, I would add a number who have continued to propel the field (again, in no particular order): Seamus Martin, Eric Baerhecke, Feng Shao, Tony Letai, John Silke, Loren Walensky, Bill Kaiser, Andreas Linkermann, Marcus Conrad, Peter Czabotar, Peter Vandenabeele, Thirumala Devi-Kanneganti, Kim Newton, Andrew Oberst, Cristina Munoz-Pinedo, Scott Lowe, Jerry Chipuk, Liming Su, Karen Vousden, David Huang, Henning Walczak, Junying Yuan, Alexi Degtarev, Joe Opferman, Mike Overholtzer, Pascal Meier, Kevin Ryan, Andy Villunger, Poul Sorenson, Marja Jaatela, Kodi Ravichandra, Francis Chan, Richard Krawaki, Marion MacFarlane, Manolis Pasparakas, Sudan He, Ana Garcia-Saez, Stephen Tait, Ed Mocarski, Lorenzo Galluzi, James Vince, Brent Stockwell, Janelle Ayers, Sidd Balachandran, Igor Brodsky, Kate Fitzgerald, Mo Kamfi, Peter Brosch, Domagoj Vucik, James Murphy, Scott Dixon, Valerian Kagan, Lisa Bouchier-Hayes, Russell Vance, Julie Magarian Blander, Dagmar Kulms, Philipp Jost, Tom Ferguson, Tom Vandenberg, Mathieu Bertrand, Atan Gross, and many others I have inadvertently omitted.

This book would not have been possible without a number of individuals. Richard Sever, of Cold Spring Harbor Laboratory Press, again encouraged me to do this revision and provided me with a “getaway” to draft the entire book. My project manager at CSHLP, Inez Sialiano, has been forever patient, and our independent developmental editor, David Hatton, was simply amazing. Huge thanks as well to Tudor Moldoveanu, who continued to provide lovely structures that went through seemingly endless tweaks without complaint. Thank you as well to the members of the Green Lab, who put up with my absences and distractions but probably appreciated that I was not ever present to interfere with their research, and who (together with past lab members) provide the rich intellectual environment in which such thought flourishes. This field does not progress independently, and I thank the very many researchers who have elucidated the processes described in these pages, and apologize for my mistakes, misinterpretations, and misrepresentations of their important studies. Finally, thank you to Rona Mogil, who has had to listen to my frustrations and put up with the disaster areas that are my work spaces (and closet!) while I worked on this project, and to Maggie Green, who buys me drinks and to whom Rona complains. This book is dedicated to them.

DOUG GREEN
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