

# Preface

About ten years ago, I had the idea of writing up a survey of the major embedding theorems of the twentieth century. This book represents the culmination of this idea, and I'm quite happy to be able to finally publish it after all this time. The embedding theorems represent important ideas in the modern fields of differential topology, differential geometry, complex manifold theory, and the general theory of functions of several complex variables, as well as the overall concept of manifolds in general. I thought it would be useful to review the origins of these various concepts as a way of hoping to give a deeper understanding of the theorems themselves.

Consequently, I spent a fair amount of time these past years looking at a number of contributions by mathematicians during the seventeenth through the nineteenth centuries, where almost all of these concepts first appeared and then developed. In my book, I have tried to give the reader some sense of the language and understanding of these earlier mathematicians as they gave voice to the many issues at hand. For instance, the developments of projective geometry and intrinsic differential geometry both evolved at the same time in the first half of the nineteenth century, but in reading the literature of the time, it seems as if they were hardly aware of each other. Only in the last half of the nineteenth century did these seemingly disparate sets of ideas come to be part of a mathematical whole.

I would not have been able to peruse these papers and books from these earlier times had it not been for the Internet and the fact that the great libraries of the world put time and effort into digitizing their collections. I am very thankful that these ideas can be so readily shared today.

I have had the support of three academic institutions over the past decades, where it has been my privilege to hold various academic appointments, and I want to thank them all for their continued support over the years: Rice University in Houston; Jacobs University in Bremen, Germany; and the University of Colorado in Boulder, Colorado, where I now live.

Springer is the publisher of two of my earlier books, and I am very happy that they are bringing this new work of mine to the public. I want to thank, in particular, Rémi Lodh, who encouraged me and helped bring this book to fruition.

The comments of his reviewers were very helpful to me. Anne-Kathrin Birchley-Brun, also in the London Springer office, has been very helpful in the process of managing the digital files and ushering them into the production process.

I want to thank Ina Mette, formerly of Springer and now an editor for the American Mathematical Society, for her encouragement for this project over many years now.

I have dedicated this book to my very close friend, Howard Resnikoff. He has been an inspiration for me for over fifty years, and we have shared many things together. His reading of various drafts of this book and his encouraging words have been very important to me.

Finally, I want to thank my wife, Rena, for her continuous support in so many ways. In particular, she read a final draft and her comments and editorial pen were so very useful, as always.

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