

PREFACE

When I trained as a medical and graduate student, I thought I would spend my career pursuing research in a traditional academic setting; however, life is what happens while you are making other plans. The relationship between academia and the biotech industry changed. After spending 12 years as a faculty member in a nonprofit research foundation and university medical center, I was ready for a change of scenery. I left the relatively safe environment of academia in 1999 to join a biotechnology start-up company. One thing led to another and I found myself involved in co-founding a new company focusing on the use of adipose-derived adult stem cells for tissue engineering applications. It was a great opportunity and one that allowed me to discover the ups and downs of biotech. While these ups and downs sometimes occur for scientific reasons, often they reflect the enthusiasm (or lack thereof) and venture capital available in the marketplace. In the course of my four years in the biotech sector, I was exposed to a wide range of scientific, business, and management situations. While there was nothing I had not heard before, the firsthand experience gave me a different appreciation of the information. Before I decided to return to an academic position, I thought I would try to commit my impressions to print. I have the conceited idea that I actually learned a few things during my biotech years. Of course, nothing in this book is new, to me or to you; however, the associations I can draw might be of value to students and investigators who are considering which path to follow in a scientific career. Those who read the book will have a chance to see how I have organized my experiences into a practical guideline that can be used by a wide range of individuals at different career levels. Graduate students considering a career in biotech might use it to determine what

skills their future employers will be looking for. Academics might find use for some of the organizational elements as they train their students. Alternatively, they might use it themselves if they embark on a transition to the biotech industry. Finally, scientists and administrators in biotech might use this book as an introductory training tool for new employees.

In a nutshell, here is what I discovered: There are many differences between what I will call academia and the biotechnology industry. There are also many similarities. While I thought I already knew this before leaving the university, my understanding was theoretical at best. I needed to work on both sides of the equation to appreciate what these differences and similarities meant in practice. On the surface, there are some tasks that are done better in a university laboratory and some that are more suited to an industry environment. For example, some people believe that creative work flourishes best in academia while product development is better suited to an industry setting. My conclusion is, yes and no. Rather than look at these as "either/or" situations, I have concluded that it is more productive to take a more inclusive "both/and" view. To prepare students for the challenges that we will all face in the decades ahead, scientific education needs to integrate the strengths and processes of both academia and industry into its training programs. I am not trying to predict what the future will be for any individual student; instead, I want to highlight and identify the common tools and skills that all people will need, regardless of the career paths they choose (or that choose them!).