PREFACE

Serendipity.

One thing led to another.

My department at the University of Tennessee decided to offer a plant biotechnology concentration to the Plant Science undergraduate major. I thought that was a really good idea. But we were missing a key course—a capstone course to integrate plant biotechnology genetics and breeding. I think that plant biotechnology only makes sense in the backdrop of genetics and breeding. So I volunteered to teach such a course. I soon found out that not only were we missing the course, but also the world was missing a textbook to support such a course. Plenty of good textbooks on plant biotechnology are available, but the levels or contents were not what I envisioned for the course we needed. Some were too advanced, and others were too applied with not enough of the basic science. At around the same time, Wiley must have seen the same thing because they asked me to edit a plant biotechnology textbook.

As you have gathered by now, this is that book. It takes the student on a tour from basic plant biology and genetics to breeding and principles and applications of plant biotechnology. Toward the end of the book, we diverge from science to perceptions and patents, which are arguably as important as the science in delivering agricultural biotechnology products to people who need them. I asked some of the leading scientists in the field, many of whom teach in biotechnology, to write chapters of this textbook. I think that seeing several points of view is more interesting to the reader than if I'd written the entire text myself (at least it is more interesting to me).

One of my favorite aspects of this book, and one that makes it fairly unique, is the autobiographical segments that accompany chapters. I asked many of the fathers and mothers of plant biotechnology to author these things I call "life boxes"; to tell their stories and give advice about science and life. In addition to my "elders," I also asked several scientists in the prime of their careers to share their stories. As I expected, their stories have a different feel to them because they lack deep retrospection, but they look more toward the future—futures they hope to contribute and live out. The one person who was too ill at the time to make a contribution was Norman Borlaug. As he is the most famous plant breeder of all time (and I think who will ever live), I could not foresee this book without his life box, and so I asked his biographer to boil his own book down to just a few paragraphs. Finally, on the other end of the spectrum, the book ends with life boxes from two graduate students. They have lived but a very short time in this exciting field, but their stories tell of dreams and future contributions that could change the face of agriculture and science.

I look back to when I was in college—in the early 1980s when Mary-Dell Chilton and colleagues were transforming the first plant. I was hardly a serious student. I was more interested in rebuilding engines than building transgenic plants. I did not set out to be a plant biotechnologist. Likewise, although I did not set out to teach a plant biotechnology course a few years ago nor did I seek to construct a textbook on the subject, it was

serendipitous that it all came together in this product. The rest of the story is up to the biotechnology student and researcher to make new things happen that will cause revisions to this text to be necessary. I am counting on that.

This science called "plant biotechnology" is far from static, and that is what makes it exciting. I hope the reader catches a glimpse of the excitement from each of the chapter authors and decides to change the world into a better place for us all. I am counting on that too.

En route to teaching my plant biotechnology course for the first time my colleagues and I have made a set of lecture Power Point sites that are freely accessible for any student or instructor at http://plantsciences.utk.edu/pbg

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